

**WEBEAUCRACY:
THE COLLABORATIVE REVOLUTION**

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Jonathan Chad Stevens
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The Undersigned Faculty Committee Approves the

Thesis of Jonathan Chad Stevens:

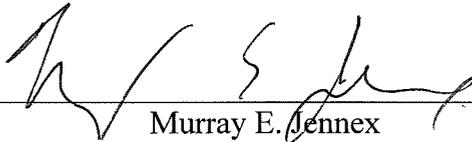
Webeaucracy: The Collaborative Revolution



Eric G. Frost, Chair
Homeland Security Program



Jeffrey S. McIllwain
Homeland Security Program



Murray E. Jennex
Department of Information Decision Systems



Matt Zwolinski
USD Institute for Law and Philosophy

10/20/10

Approval Date

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DEDICATION

For my children, and my children's children; and for Maria – as you have been dedicated throughout all my projects, so is this in turn dedicated to you.

...;that it is time enough for the rightful purposes of civil government, for its officers to interfere when principles break out into overt acts against peace and good order;...

Thomas Jefferson, *Virginia Statute for Religious Freedom*, 1786.

ABSTRACT OF THE THESIS

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by
Jonathan Chad Stevens
Master of Science in Homeland Security
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Through the act of submission we create organization in order to work together toward the common good, thus achieving more than is possible as individuals. It is an unavoidable consequence that this same act of submission simultaneously creates hierarchy, authority, power, and politics, that will forever be linked to traditional bureaucracy. Thus, government bureaucracy is inherently flawed.

Communications technology, more than simply a mirror, has affected sociopolitical organization throughout history. The Internet as actor will assert itself, reshaping the sociopolitical landscape. Collaborative Internet utilities functioning much the same as traditional government bureaucracy, sans power, are the first wave, already taking shape in the Webeaucracy.

Existing collaborative Internet utilities are explored to elucidate form, taxonomy, and possible futures. An online collaboration utility is presented as a practical exercise: <http://yadabyte.org>. Finally, strategy points toward the implementation of government sponsored collaborative Internet utilities are presented.

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Every once in a great while we are inspired by others to achieve more than we would left to our own devices. As an ancillary appendage of my official duties a few years ago, I was the recipient of a semi-private lecture from a tireless visionary. Were it not for Eric Frost, I would not have bothered to begin down this path. Were it not for the heroic efforts of Jeff “Mac” McIllwain, there would be no Homeland Security program at San Diego State University. Many thanks to Murray Jennex and Matt Zwolinski for their academic inspirations and input into this thesis, and much appreciation to my dad and to William E. Holland for taking the time to make the rough draft “bleed.”

Many thanks to the Director and supervisors at my agency for their support in my academic endeavors. Thanks also to the millions of contributors to the “fount of all knowledge,” Wikipedia. Numerous ideas herein were first explored on this most basic of collaborative Internet utilities. A single citation, “see Wikipedia” would suffice; and it is this attribute that first got me thinking about Internet enabled collaboration.

Finally, this is almost certainly the last of many theses to benefit directly from the wisdom that was Leon Rappoport. When I was fresh back from Desert Shield/Desert Storm, Rappo lit the way... and plied me with gin. Thanks, Rappo, for your eager input and gentle insight over nearly two decades; wherever you’re hangin’....

INTRODUCTION

As a 20 year career bureaucrat, I have long detested waste and desired greater efficiency from the organizations for which I have worked. Toward that end, I began research for this thesis under the premise that some form of better government bureaucracy might be had such that tax dollars would not be wasted on endless cycles of political wrangling. If only market forces or the profit motive could somehow be injected into the bureaucratic equation, I thought, then perhaps greater efficiency would be the result. After two years of reading and writing and pondering the question, I came to an unexpected realization: that bureaucracies created by governments are inherently flawed and resistant to change. Throughout this work, examples from the Department of Homeland Security (DHS) are used – not because DHS is any more flawed than other organizations, but because, as the product of massive restructuring, it should be the shining example of all that is possible from government bureaucracy.

The idea of “Webocracy” – with an “o” – has been circulating for some time. Webocracy as a construct seems to have emerged as encompassing the “building of online communities” and “grassroots action” aimed at political objectives (Meehan and Solomon, 2005), or as the web technologies that support direct participation in the democratic process (UNESCO, 2003). “Webeaucracy” – “eau” – as defined in this paper, is the community of collaborative Internet utilities that is emerging to provide basic products and services free of politics and free of charge. Both focus on collaboration, but Webeaucracy is antithetical to webocracy in that it focuses on basic products and services, not on politics and power.

What follows is the assertion that bureaucracies that are emerging through collaborative Internet utilities – Webeaucracy – will revolutionize our sociopolitical composition. The first half of the thesis deals with the theoretical underpinnings of self-governance, bureaucratic legitimacy, and the formation of power. Flaws inherent to traditional bureaucracy are explored in some detail. The second half of the thesis presents the idea that communications technology plays a fundamental role in the shaping of society, and that the Internet will have a revolutionary impact greater than previous communications

technologies. Finally, key strategy points for implementation of collaborative Internet utilities in government are presented.

CHAPTER 1

FUNDAMENTAL LIBERTY AND ORDER

Shortly after the beginning, there was little need for bureaucracy, but there was apparently a need for order. “And the LORD God commanded the man, saying, ‘Of every tree of the garden thou mayest freely eat: But of the tree of the knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die’” (Genesis 2:16-17, The Holy Bible, King James version). One chapter later in the book of Genesis, humankind broke this simple rule and fell from grace. The same or similar story of the fall from grace appears in other major world religions. The rules for orderly civil conduct and the bureaucracies which implement these rules have grown in number and complexity ever since our “fall from grace.”

This narrative may be seen as the genesis of the human condition, or what was popularized by André Malraux (1933) and René Magritte as “La Conditon Humaine;” chiefly that death and suffering are universal to all humankind. As individuals make bargains with God or fate, at times it is necessary to enforce rules for orderly conduct on those who would seek advantage over others in ways that are harmful. To Thomas Hobbes (1651), the establishment of absolute government was a precondition to mutually beneficial social cooperation, i.e. civil society. In the Hobbesian view, we must secure social cooperation with whatever force is necessary because the alternative is chaos and, ultimately, mutual destruction. In the Hobbesian view, institutions should be designed, first and foremost, to secure order. Only after we secure order can we, cautiously and incrementally, allow individual freedom as a sort of by-product, or luxury, of an orderly society. For the sake of this discussion, Hobbes’ will be referred to as “the conservative view.”

Locke, Kant, and their followers place liberty as the ultimate justification for government and especially as the ultimate justification for any form of coercion over citizens. These authors reject Hobbes in part because order is not, and cannot be, an intrinsic value. We need order for some other purpose: to control violence; or to pursue autonomous life plans (Kant, 1793); or to secure natural rights (Locke, 1689). In this view, the state, with its constitution and policies, is justified only by reference to the higher moral values: liberty;

dignity; and natural rights. For the sake of our discussion, this is the “liberal view” (see Tesón, 2005, 60-61).

To the butcher, baker, and candlestick maker, these distinctions of conservatism or liberalism are of little consequence. Rather, in the American democratic state, average citizens want nothing more, and nothing less, than the freedom to pursue those goals deemed by those individuals to be in their own best interest; to “follow their bliss,” or to seek some vague notion of “life, liberty, and the pursuit of happiness” (what Gaus [1991] describes as *constrained teleology*). Of course, personal liberty and the general welfare may, at times, be at odds. Generally speaking, the solution to this conflict should tend to favor the individual. This is the position given by Rawls (1971) and Dworkin (1978) as the *primacy of liberty* (Tesón, 2005, 69). In fact, the depth and breadth of the body of work in support of this position is substantial (see Mill, 1963; Feinberg, 1984; Benn, 1988). This then is the *Fundamental Liberal Principle* – that freedom is basic, and the responsibility for justification is on those who would seek to limit freedom (Gaus, 1996, 162-166). But whose job is it to ensure that fundamental liberty is maintained? Who ensures fundamental liberty in the bureaucratic processes?

It is within this context that we view the reason for, and seemingly *a priori* existence of, government bureaucracy. In light of the forgoing, it would seem that the chief purpose of government bureaucracy, in a democratic state, is to perform the liberal function of ensuring the liberties of the citizens of that state while at the same time performing the conservative stabilizing function of order. But is this possible? Can that kernel of truth which drives the need for liberty reside at the same time within the same bureaucracy that is ensuring order? What epistemological tribulations occur within that bureaucracy when order and liberty are at odds?

THE LEGITIMACY OF BUREAUCRACY

Max Weber’s (1947) epistemology is a widely accepted starting point for any study of the characteristics of bureaucracy. An abbreviated list:

1. There are fixed and official jurisdictional areas, which are generally ordered by rules, that is, by laws or administrative regulations.
 - a. Activities are distributed in a fixed way as official duties.
 - b. There is a chain of command

- c. The positions for the fulfillment of duties and corresponding rights are given only to those qualified to serve.

(In government, these three elements constitute 'bureaucratic authority.')

2. There is a firmly ordered system of super- and subordination in which there is supervision of the lower offices by the higher ones.
3. Management requires documents. This results in a staff of scribes of all sorts. The body of officials along with the material apparatus makes up a "bureau."
4. Management presupposes thorough and expert training.
5. Official activity demands the full (time delimited) working capacity of the official. Normally, this is only the product of a long development, in the public as well as in the private office.
6. Management of the office follows general rules. Knowledge of these rules represents a special technical learning which the officials possess.

Even more briefly, we can condense the bureaucratic milieu to, (1) people make and follow rules, (2) people produce something (management, services, paper work...), and (3) people have to train a long time to learn all the rules, thus becoming of value to the organization for their skills. Rules, product, and skills: the *holy bureaucratic trinity*. The most obvious omission in this short short list is "chain of command."

THE BASIS OF POWER

A child in second grade did not accept a young lady's invitation to join her gang. Her gang promptly "beat him up." Had he accepted her invitation, he would have been part of the gang and enjoyed the safety inherent in numbers. By submitting ourselves to the family, tribe, government, etc., we enjoy the basic security offered by membership in that organization. Through our act of submission, public order is established and a hierarchy or chain of command is formed. By creating a chain of command, by virtue of some having authority over others, the basis of power is established. In this system then, those who seek a higher position than others seek or earn greater power by default. Power in bureaucratic organizations presupposes submission of others.

Is it possible to create an organization which fulfills the basic functions of a bureaucratic organization – rules, product, and skills – without creating hierarchy or power? What would be the characteristics of such an organization?

MAX NOT MARX

Most are familiar with the basic tenants of Marxism: control the means of production by causing the working class to rise up against the bourgeoisie resulting in the socialist state or “dictatorship of the proletariat” as an intermediary phase leading to the “perfecting” of the population in the workers paradise of Communism. Critics will quickly note that no such social experiment has ever progressed beyond the “temporary” phase of socialism and that dictatorships prevail. So in the end, be it capitalism, democracy, Marxism, or the playground, it seems “you gotta serve somebody,” to quote Bob Dylan. But submission to authority – legitimate authority – is not necessarily a negative aspect of society as some might suppose. Submission to authority is the basis for social order, enables basic security, and creates a framework in which members of society can work together in order to accomplish much more than they can as individuals.

We will revisit this notion of the possibility of bureaucracy – that is rules, product, and skilled workers – without a chain of command. But first, let us turn to what we have grown to expect from traditional hierarchical government bureaucracy.

CHAPTER 2

WHAT IS WRONG WITH GOVERNMENT BUREAUCRACY

This chapter will begin the exploration of problems inherent to traditional bureaucracy, establish that despite these flaws traditional bureaucracy in its present form is a necessity, and caution that despite this necessity, when push comes to shove, it is up to the individual to ensure fundamental liberty is ensured.

PROBLEMS WITH BUREAUCRACY

A quick Google search of “problems with bureaucracy” resulted in 13,100 results (August 1, 2010). Interestingly, the highest rated Google search result came from:

Suburban Emergency Management Project for the Gulf Coast near New Orleans, Louisiana: “Most people at some time or another complain about two main **problems with bureaucracy**: inefficiency and arbitrariness, according to political scientist and....”

It is probably not fair to suggest that the Suburban Emergency Management Project for the Gulf Coast near New Orleans, Louisiana epitomizes the problematic bureaucracy. It is however certainly safe to say that this region has become famous for poor bureaucratic response post-Hurricane Katrina; the coincidence is difficult to dismiss outright.

The top-rated results for “problems with bureaucracy” which appeared to be documenting some sort of list of problems are noted in Table 1:

Table 1. Problems with Bureaucracy

Website	Complaint
http://semp.us (What is Bureaucracy?)	<ul style="list-style-type: none"> • Inefficiency • Arbitrariness
http://quizlet.com (Chapter 13: The Bureaucracy flashcards Quizlet)	<ul style="list-style-type: none"> • Red tape • Conflict • Duplication • Imperialism • Waste

(table continues)

Table 1. (continued)

http://completehost4u.com (Module 7 Bureaucracy)	<ul style="list-style-type: none"> • Inefficiency • Arbitrariness.
http://books.google.com (Public sector auditing: is it value for money? (By Sir John Bourn))	<ul style="list-style-type: none"> • Favour the producer and show insufficient concern for the user; • Require the citizen to act and think like a bureaucrat; • Are poor at learning despite gathering enormous amounts of information; • Enmesh themselves in complexity, creating additional problems; • Are poor at examining, assessing and debating their own performance; • Provide little or no incentive to innovate and make better use of resources.
http://criticalmanagement.org (Module 1)	<ul style="list-style-type: none"> • Motivation • Customer service • Resistance to change
http://people.brandeis.edu (Policy Implementation Theories.doc – Policy Implementation)	<ul style="list-style-type: none"> • Not good with individual difference • Inability to change direction • Inability to cross boundaries
http://learn.midsouthcc.edu (Groups and Organizations)	<ul style="list-style-type: none"> • Alienation • Ritualism • Following rules become all- important
http://flashcardmachine.com (Sociology 101 test 1 Flashcards)	<ul style="list-style-type: none"> • Alienation • Inefficiency • Ritualism

While this was not an exhaustive search, some obvious themes arise. Broad themes that seem to capture and encompass the array of complaints are: inefficiency, arbitrariness, and ritualism. Weber extolled the virtues of bureaucracy as “an institutional method for applying general rules to specific cases, thereby making the actions of government fair and predictable” (in Wilson, 1989, 334-335). Those publishing on the Internet appear to argue that classical Western bureaucratic rules and methodologies are the medium on which inefficiency, arbitrariness, and ritualism are propagated.

A few dichotomous Google searches (August 1, 2010) revealed the results noted in Table 2:

Table 2. “Bureaucracy” Search Result Comparisons

String Queried	Number of Hits
“I hate bureaucracy”	61,300
“I love bureaucracy”	39,100 (mostly sarcastic)
“bureaucracy is bad”	3,810
“bureaucracy is good”	1,210
“bureaucracy is inefficient”	12,800
“bureaucracy is efficient”	1,250

Whether it is your notion that bureaucracy is “fair and predictable” or “inefficient, arbitrary, and ritualistic,” these results seem to indicate that public sentiment swings decidedly toward the negative with regard to the meme “bureaucracy.” This assertion should be viewed with caution, however; commercial search engine as primary data-gathering tool certainly carries limitations. This being said, it is reasonably intuitive that a comparison of web search results reflects intellectual zeitgeist. At minimum, one can assert that “bureaucracy” carries a decidedly negative connotation among those contributing web content.

BUREAUCRATIC RESISTANCE TO CHANGE

Many who have been audited by the Internal Revenue Service (IRS) can attest to the frustration experienced while pleading their case to a large and insensitive government bureaucracy. The IRS provides an “800” telephone number for customer “convenience.” “If you need additional time (to respond to an audit notice), call us at 1-800-829-8310,” the audit response form reads. Nowhere does the form mention that you will have to wait on the phone 45 minutes to provide a verbal response to a living person at the other end of the telephone line. The most recent version of the IRS “Response Form (REV. 11/2004),” as if to thumb their nose at every communication norm to emerge in the 1990’s, provides no email address to which a respondent may submit a question, and the taxpayer “contact information” section provides no space for cell phone information. In the absence of market forces, government bureaucracy has little incentive to change (ritualism).

Government bureaucracy does not conform to the needs of the public it serves because it is resistant to changes in demand in the market place. Jacques Lesourne (1992) formulates mathematical models that describe a “new look” toward quantifying the creation

of skill. Lesourne postulates several hypotheses regarding possible relationships between a commodity and the setting of a ceiling price:

- (1) the consumption of a good creates a habit and increases its desirability;
- (2) the consumption of a good temporarily reduces its desirability as the individual seeks variety;
- (3) the consumption of a good engenders an attitude of rejection which permanently diminishes its desirability.

We can imagine that the dynamics of such a model might take very different forms in relation to the distribution among the individuals of the various possible links between consumption and preferences.

Even if this model has the disadvantage of fusing into one set of dynamics the rapid dynamics of market convergence and the slow dynamics of the forming of habits, it presents the tremendous advantage of putting the accent on one of the motivating forces behind economic change, the interaction between transformations in production and change in tastes.

In the private sector, greater demand results in an increase in production capacity which in turn results in an increase in the labor pool. When the desire for a product diminishes, excess production capacity is reduced of necessity. The greater the ability of a market sector to anticipate such adjustments, the more elegantly labor can flow from sector to sector.

It is one of the unfortunate hallmarks of government bureaucracy that vestigial appendages linger long after the event that necessitated their creation. In some cases, these little-used functions are, nevertheless, of necessity (e.g. nuclear contamination response), and their existence is possible only through government bureaucracy. More often than not however, these residual processes persist only because the bureaucratic labor pool responds at the speed of attrition. Businesses naturally rise and fall on the tide of consumption. Careful monitoring of public consumption of bureaucratically-produced consumables – visas, passports, vehicle license plates, applications for building permits, length of lines waiting to enter the United States – coupled with opportunities for retraining and reassignment should be a natural function of a bureaucratic agency that responds rapidly to changes in the market, changes in threat, and changes in the needs of a rapidly-evolving society.

Unfortunately, when it comes to reorganization of government bureaucracies, the social contract between bureaucrat and bureaucracy, both explicit and implicit, is that once hired the bureaucrat will have a job until retirement, barring some egregious act on the part

of the bureaucrat. The assumption of longevity, by both bureaucratic employee and manager, makes it nigh to impossible to provide organizational flexibility that mirrors the needs of rapidly-changing conditions. How then can government bureaucracy be structured so that it becomes more responsive to changing demands?

AUTHORITY IS A NECESSITY

When was the last time you arrested someone? Performed an autopsy? Upgraded a waste-water treatment system? Issued the court order that authorized forcible entry into someone's home? These tasks, and many others necessary to the normal functioning of civil society, often fall to the bureaucrat. These societal functions require that people follow rules, produce something, and possess knowledge and skills – our holy bureaucratic trinity. Often, because the objects of these functions are less than savory (e.g. waste management, processing the dead), or are carried out against someone's will (e.g. issuing a warrant, placing a person under arrest), authority, hierarchy, or power are a necessary fourth component of these bureaucratic functions. We need traditional government bureaucracy to perform these functions, and we as a society cannot eliminate the necessity for this sort of authority.

Every four to eight years in the United States, the heads of each of the various executive departments are appointed by a newly-elected President. This event, under current American bureaucratic structure, is the most direct input the public has on those in charge of many courts, public services, and institutions. Further, there is a body of work that argues strenuously that bureaucracy has a far greater impact on bureaucrats than do politicians (see Meier and O'Toole, 2005). In other words, the public has virtually no control of the bureaucracies that serve them.

Some have observed that when it comes to high-profile appointments such as Supreme Court Justices, most Presidents are eager to avoid any suspicion of personal motivation. The Senate often refuses appointments that seem to reflect a high degree of personal favor or political debt-paying. Be that as it may, accusations of cronyism have been made all the way back to some of the first Supreme Court nominations made by George Washington. While it is generally agreed that President Washington set an admirable example with his first appointments to the Supreme Bench, it did not go without notice that

Robert Hanson Harrison was a personal friend of the first President (Pusey, 1981, 71). The less high-profile the appointment, it can be assumed, the higher the degree of cronyism tolerated by legislators; likewise it can be assumed that at least some who garner political appointments do have effectual ties to the President.

Bureaucrats are, from time to time, called upon to carry out the will of the Chief Executive. Sometimes, the Chief Executive must exhibit leadership that transcends popular views. Former U.S. Court of Appeals Chief Judge for the District of Columbia, Patricia Wald, and former Deputy Counsel to President Carter, Joe Onek (2005), when writing about Guantanamo Bay detainees, opened their argument with, “The right to be free from arbitrary restraint of one’s physical freedom has traditionally been considered a bulwark liberty guaranteed by our Constitution.” And Justice O’Connor, in the U.S. Supreme Court opinion for *Hamdi v. Rumsfeld* (2004) stated that, “[it] is the most elemental of liberty interests – the interest in being free from physical detention by one’s own government.” Yet in the aftermath of 9/11, President Bush called on various agencies to apprehend and detain more than 1,200 American citizens and aliens, detaining them outside the limits of ordinary criminal law or immigration proceedings. While criminal charges were brought against only about 130 of those detained, the charges were typically for minor offences that would not normally result in detention. Very few detainees were ever charged for a terrorist act (Wald and Onek, 2005, 128 & 132).

There are those who have argued that “the detention of captured enemy combatants by the military is supported by domestic law and the international law of war, [and] that the use of this detention authority makes clear policy sense in the context of the War on Terror” (Yoo and Jacob, 2005, 133). It is known that up to 140 Saudi citizens fled the U.S. in the days following 9/11. Members of the bin Laden family were whisked to safety on a private jet September 18-19, 2001 (Zahn, 2003). President Bush issued the military order for “Detention, Treatment, and Trial of Certain Non-Citizens in the War Against Terrorism” on November 13, 2001. It is assumed this order worked toward flushing out remaining would-be terrorists residing in the U.S., even if the order did not result in their apprehension or detention.

Similar swift and decisive action is warranted in many other situations: response to natural disasters; exercising war powers; and riot response, for example. But transcendence

of normative legal procedure in the interest of public safety is not without risk, and scrutiny and corrective measures from many sides are to be expected. In such cases, it is clear that a single point of authority is convenient for the purposes of accountability. Whatever the position taken, clearly, these are difficult decisions that require leadership by, and possible future accounting of, an executive. For this reason, traditional government bureaucracy with its hierarchy and lines of authority, despite accompanying flaws, is a necessity and should remain intact.

SOMETIMES AUTHORITY IS BAD

With authority comes the potential for the abuse of power or apathetic resignation to the rules, traditions, and trappings of the functionary. In “The Cunning of History: The Holocaust and the American Future,” Richard L. Rubenstein (1975) examines the mechanizations that made the holocaust possible. Rubenstein places the blame for “progress in death-dealing capacity” not on technological advances but on advances in social organization. He quotes Max Weber (in Gerth and Mills, 1948):

When fully developed, bureaucracy stands...under the principle of *sine ira ac studio* (without scorn and bias). *Its specific nature which is welcomed by capitalism develops the more perfectly the more bureaucracy is ‘dehumanized,’* the more completely it succeeds in eliminating from official business love, hatred, and all purely personal, irrational and emotional elements which escape calculation. *This is the specific nature of bureaucracy and it is appraised as its special virtue.* [Italics added.] (Rubenstein, 1975, 22).

Rubenstein carries out his argument quite convincingly. He notes that from the moment they came to power, the Nazis understood the bureaucratic machine they controlled. He argues that functionaries at the highest level performed their duty not for sadistic reasons, but simply because that was their job; they were simply good bureaucrats.

Himmler does not seem to have been a sadist. During the war, he did not like to watch killing operations and became upset when he did. But, *Himmler was the perfect bureaucrat.* He recognized that the task assigned to his men, mass extermination, was humanly speaking exceedingly distasteful. On several occasions, he praised the SS for exercising an obedience so total that they overcame the feelings men would normally have when engaged in mass murder. The honor of the SS, he held, involved the ability to overcome feelings of compassion and achieve what was in fact perfect bureaucratic objectivity (Rubenstein, 1975, 24).

While the Holocaust may be the ultimate example of dehumanized bureaucratic efficiency, we must all remember that it took not just bureaucratic efficiency, but the

apathetic or tacit consent of an entire people, to make genocide possible. Open communication combined with public interest and participation are critical to ensuring that these sorts of lapses against fundamental liberty, especially to this degree, never occur again. It is a basic lesson from numerous events throughout history that functionaries act in the interest of good more consistently when a mechanism for illumination of government bureaucratic functions exists and public pressure is brought to bear on those decision-making processes. A citizenry actively engaged in governance is almost certain to be a more positive influence than a disinterested citizenry. It seems then, that while it may be the primary function of government to provide the conservative value of security and the liberal value of liberty, when circumstances result in conflict between the two ideals within the same government bureaucracy, the onus is on the individual to ensure fundamental liberty.

CHAPTER 3

WHAT DO WE WANT FROM GOVERNMENT BUREAUCRACY?

This chapter will further explore basic problems with traditional bureaucracy, set criteria for what we should expect from bureaucracy, and explore in some detail several examples from the Department of Homeland Security that demonstrate why business as usual prevails even after reorganization.

At this point, some basic assertions are in order. Building on the online query represented in Table 1, Problems with Bureaucracy:

Bureaucracy:

- is inefficient.
- is slow to change/ritualistic.
- should serve the will of the people.
- performs functions that are unsavory, not economically feasible in the private sector, or that require authority.
- is impersonal.
- is arbitrary.

Putting inefficiency and slow change aside for a moment, the remaining attributes might be considered by many to be positive characteristics. Many taxpayers would assert – given certain concessions, provisos, and assurances – that functions provided by the government should be limited to security (order) of one form or another, and should be provided without pomp or fanfare. While argument on this point is seemingly endless fodder for political pundits, at the end of the day most reasonable taxpayers would certainly agree that government services should be provided in such a manner that the success of the state is also ensured – chiefly, that government services not “break the bank.”

At present, the executive branch of the United States federal government is divided into 15 Departments:

- Agriculture
- Commerce

- Defense
- Education
- Energy
- Health and Human Services
- Homeland Security
- Housing and Urban Development
- Justice
- Labor
- State
- Interior
- Treasury
- Transportation
- Veterans Affairs

While those of a certain political leaning might argue that some of these departments exist for no reason other than to provide government handouts, they are all, at their core, designed to provide security in one form or another toward the common good. Departments such as Homeland Security and Defense are fairly obviously intended to provide security. Other departments may not be so obvious. The Department of the Treasury mission statement is published on their website:

Maintain a strong economy and create economic and job opportunities by promoting the conditions that enable economic growth and stability at home and abroad, strengthen national security by combating threats and protecting the integrity of the financial system, and manage the U.S. government's finances and resources effectively.

And the mission statement published on the U.S. Department of Housing and Urban Development website:

HUD's mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes; utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business.

Similar mission statements have been adopted by the other thirteen Departments of the U.S. Federal Government. As asserted earlier, government can, from time to time, stray from the

fundamental assurance of liberty; the assurance of liberty is the responsibility of each individual, and as some would seek advantage over others, the burden is renewed each generation. It is beyond the scope of this paper to argue for or against larger or smaller government, but this paper takes as a base assertion that:

1. The basis for the existence of any government bureaucratic entity should be security, and;
2. Those security services should be performed efficiently.

The two rules given here for better bureaucracy are imprecise. The government bureaucracy should provide security, but for whom? The government? The people served by the government? And while we want these services performed efficiently, is it possible to perform services too efficiently? Should incentive be given to police officers to write as many tickets as possible per shift? Or should officers write tickets in such a manner as to create as much revenue as possible during a shift? This sort of “efficiency” could lead down a path similar to that which created Himmler’s SS. For reasons that should be fairly obvious, some services should not be provided in the most efficient manner possible, but perhaps “with due regard” for public interests or public funds. So we modify our base assertions:

1. The basis for the existence of any government bureaucratic entity should be the security of the citizenry, and;
2. Those security services should be performed with due regard for public interests.

We could continue the exercise, further refining these two base assertions, but at the end of the day those stated here are sufficient for the sake of discussion.

How do we build government bureaucracy so that it fulfills these two criteria? Is this even the appropriate question to ask? What have governments done thus far to make better bureaucracy? Have these efforts been successful? Should we “cut our losses” and seek some mechanism other than government bureaucracy for the distribution of basic services?

Let us turn for a moment to past efforts at making better government bureaucracy.

CAN BETTER BUREAUCRACY BE ACHIEVED?

The Homeland Security Act of 2002 resulted in a massive restructuring of bureaucracy in the United States. A nation does not engage in this sort of exercise lightly; it

can be assumed an expectation of some reward – presumably in the form of increased security and possibly efficiency – was expected for the effort.

In “Theory of Social and Economic Organization,” Weber (1947, 324-325) ponders the underpinnings of “The Basis of Legitimacy:”

“The Types of Authority and Imperative Co-ordination”:

The members of the administrative staff may be bound to obedience to their superior (or superiors) by custom, by affectual ties, by a purely material complex of interests, or by ideal (*wertrational*) motives. *Purely* material interests and calculations of advantage as the basis of solidarity between the chief and his administrative staff result, in this as in other connexions [stet], in a relatively unstable situation. Normally other elements, affectual and ideal, supplement such interests. In certain exceptional, temporary cases, the former may be alone decisive. In everyday routine life these relationships, like others, are governed by custom and in addition, material calculation of advantage. But these factors, custom and personal advantage, purely affectual or ideal motives of solidarity, do not, even taken together, form a sufficiently reliable basis for a system of imperative co-ordination. In addition there is normally a further element, the belief in legitimacy.

It is an induction from experience that no system of authority voluntarily limits itself to the appeal to material or affectual or ideal motives as a basis for guaranteeing its continuance. *In addition every such system attempts to establish and to cultivate the belief in its ‘legitimacy.’* (Emphasis added.)

While staff may be bound to obedience through a number of mechanisms – custom, affectual ties, material interests, ideals – the supposition of legitimacy is premier. This is especially true in organizations that have been recently restructured. At DHS, the term “legacy” is ubiquitous. Customs and Border Protection Officers at the Ports of Entry are comprised of three “legacy” progenitors: Immigration Inspectors from the former Immigration and Naturalization Service, Customs Inspectors from the former United States Customs Service, and Agriculture Inspectors from the United States Department of Agriculture. Each “legacy” official came from an organization possessed of its own unique heritage of customs, affectual ties, and ideals. What were formerly attributes in a strong bureaucratic culture suddenly became potential sources of friction for a newly-formed agency.

After reorganization was thrust upon over 220,000 government employees by the Homeland Security Act of 2002, the weak forces of material interest and ideals remained as minor driving forces for organizational cohesion. What is ordinarily the strong force, the basic assumption of legitimacy (by virtue of legislation and executive direction), remained tenuous during early transitional years. Material concerns were addressed by leaders early in

the transition. Assurances were given that despite any reorganization or reclassification, no DHS employee would be affected by a reduction in wages or loss of employment. All employees breathed a collective sigh of relief, and one of the last motivators for obedience (threat of the loss of material gain) evaporated. Thus the strongest remaining force was affectual ties formed during employment in legacy organizations; this remained as the strongest force driving organizational negotiations and restructuring at the fledgling bureaucracies.

In the aftermath of 9/11, ideals peaked. Even Jean-Marie Colombani (2001), the editor of the left leaning *Le Monde*, proclaimed solidarity with Americans with this heartfelt headline: "Nous sommes tous Américains." But just as European solidarity eventually melted under the weight of the realities of a protracted American led "War on Terror," so too, did the idyllic memory fade for many bureaucrats shuffling mountains of paperwork generated by the War on Terror. Bureaucrats who once focused on improving capabilities and eliminating jurisdictional barriers soon fell back to the old habit of ensuring their own longevity and opportunities for advancement. Without clear guidance and direction from above, many stakeholders were left to their own devices to find their way in the emerging environment.

Legitimacy of the organization then emerged as being most critical to establishing obedience of the rank and file at DHS. What then formed the basis for legitimacy of DHS as a government institution? Certainly, when the Chief Executive of a nation issues an order or decree, some weight will be given to that order or decree by some segment of the population. On June 11, 2002, President George W. Bush announced that he wanted to establish a Cabinet-level office of "homeland security" to raise the accountability of government:

I don't like the idea of calling 100 different agencies. I like to call one and say, "Here is the strategy, and what are you doing about it?" And if you're not doing something about it, I expect you to. And if you don't, I'm going to find somebody else that will do something about it (Fox News, 2002).

Those potentially affected by reorganization were apprehensive but were energized by various still-aroused ideological motivations. Bush's rough outline formed the basis for a massive reorganization based on accountability. The Congress swiftly enacted the Homeland Security Act of 2002 five months later. Emotions ran high not only for those directly affected by 9/11, but for legislators and the Chief Executive as well. Merely fourteen months

after the events of 9/11, the largest bureaucratic restructuring in the history of the U.S. had been effected. Ideology aroused “in the heat of the moment” can obviously be a strong motivator for action.

As should be expected, the Supreme Court has acted both for and against the administrative desires of those at both the White House and Capitol, as well as for and against DHS administrators. Finding against the government’s position, the Supreme Court found that 595 foreign national detainees at Guantanamo Bay, Cuba have the right to *habeas corpus* (*Rasul v. Bush*, 2004); and made it more difficult to convict international money launderers (*Cuellar v. U.S.*, 2008). In support of homeland security administrative actions, the Supreme Court upheld a lower court’s decision that a person does not have the right to see the government identification policy that requires a passenger to show proof of identification before boarding an airliner (*Gilmore v. Gonzales*, 2007); dismissed with prejudice the case against Michael Chertoff’s decision to disregard 20 environmental laws in the building of the border fence (*Defenders of Wildlife v. Chertoff*, 2008); reaffirmed the President’s authority to detain enemy combatants, including U.S. citizens (*Hamdi v. Rumsfeld*, 2004); and turned down an appeal from the American Civil Liberties Union (ACLU) to pursue a lawsuit against the domestic wire-tapping program (*ACLU v. NSA*, 6th Cir. 2007).

Regarding homeland security, it is easier to find court decisions in support of the actions of the other two branches of government than against. Thus, we can assert with some confidence that the three branches of government in the United States have been reasonably unified in the desire to create a strong centralized apparatus that ensures the security of Americans on home soil. This seems to form a solid basis for the legitimacy of the Department of Homeland Security.

But despite five years (as of this writing) of legitimacy for DHS, there are those, mostly in the trenches, who ardently adhere to the affectual ties and ideals of legacy organizations. Best practices do not appear to have been adopted in some instances, and greater efficiency does not appear to have been a prime motivator in some reorganization negotiations. A sort of friction exists between those who would cling to past relationships and those who would move boldly forward; between those who are ardent adherents to old ways of doing business and those making attempts to leverage possible efficiencies inherent

to restructuring. Unfortunately, it appears that many fear change simply because it may alter what little authority they have managed to eke out over the span of a career. When large organizations are forced to merge, and there is no clear winner or clear loser at the bargaining table (as in a corporate buyout or hostile takeover), the various stake-holders are obliged to barter and politic. These negotiations can lead to trade-offs that have little to do with seeking better organization or efficiency and much to do with seeking political expedients that defuse tensions and relieve managers of hostility boiling up from beneath. What emerges is a sort of organizational resistance to change that undermines the full realization of the hopes that encouraged reorganization in the first place.

THE DIFFICULTY OF REPLACING ESTABLISHED CONSTRUCTS

Bureaucratic resistance to change does not reside solely with the trenchant malcontent. It is a lamentable characteristic of even the most receptive person that established constructs die hard. In an interview that aired March 2, 2009 on ABC's television news show, "60 Minutes," newly appointed DHS secretary Janet Napolitano responded to a question from Anderson Cooper by saying "...what I have worked on is working with Customs, with ATF,..." (Darnton and Bourg, 2009).

Janet Napolitano was sworn in as the third Secretary of Homeland Security on January 22, 2009. This interview aired March 1, 2009. While it can be certain Ms. Napolitano is a quick study, her response was most telling. The question was in reference to whether or not she would be willing to consider reinstating the ban on assault weapons that was lifted in 2004. The two agencies that came to her mind during the interview as having some *prima facie* legitimate input into this debate were the United States Customs Service, an agency that ceased to exist in 2002 when it was absorbed by DHS, and ATF, an organization that still exists under that acronym, but is a Department of Justice entity that is not under her purview.

Before the Homeland Security Act of 2002, ATF was a part of the Department of Treasury. The acronym stood for Bureau of Alcohol, Tobacco, and Firearms. After enactment in 2002, ATF moved to the Department of Justice and became the Bureau of Alcohol, Tobacco, Firearms, and Explosives retaining the original "ATF" acronym. The United States Customs Service ("Customs") ceased to exist under authority of the same Act

and was moved from Treasury to DHS. Unlike ATF, which remained largely intact as an organization, the former Customs Service was parsed out to various gaining bureaucratic entities within DHS. Immigration and Customs Enforcement (ICE) gained the investigative arm of Customs. Customs and Border Protection Office of Air and Marine (OAM) gained aircraft pilots and boat captains; and the Office of Field Operations (OFO) gained the customs inspectors at land, sea, and air ports of entry. “Customs” as an entity ceased to exist in 2002. Thus, while “Customs” as a construct or meme is still alive and well, its functions were parsed out over three separate and unique bureaucratic agencies – ICE, OAM, and OFO – none of which has gained wide recognition among the general population.

Assigning former Customs functional areas to three new agencies made perfect organizational sense. These functional areas were joined with similar functional areas from the U.S. Department of Agriculture and Immigration and Naturalization Service to create an organizational structure based on functional areas: CBP OAM and Border Patrol, protect the border between the ports of entry, OFO protect the border at the ports of entry, and ICE protect the interior. Unfortunately, none of these three letter acronyms fully encompasses the “Customs” meme, and “DHS” as an entity or meme is too broad an agency or idea to fill the “Customs” void. As a result, “Customs” persists in the national lexicon today, and will not be readily supplanted by one of the new potential replacements, especially when the Secretary of Homeland Security herself perpetuates the misnomer.

The takeaway is this: legacy memes or constructs for understanding persist in the national lexicon long after the organizations that resulted in the meme cease to exist. By simply reorganizing the twenty-two bureaucracies that now comprise the Department of Homeland Security, the meme “Customs” for example, does not go away. This works to subtly undermine some of the best intentions of reorganization, chiefly, more nimble organizational structure and transparent lines of communication and authority.

There are other forces at work against the creation of better government bureaucracy:

RESTRICTION CREEP AND PERPETUITY OF THE BUREAUCRAT

When I was a child, I rode my bicycle without a helmet and without protective pads. Today, children are required by law to wear a helmet. I would carry my rifle from my home to the hills to go “plinking,” an act I would not remotely consider today. Almost anyone who

has been alive for more than a few decades can look back with fondness on “the good ol’ days” when life was simple and laws were less restrictive.

Gustave Le Bon (1897, 234) quotes the Victorian philosopher and sociologist Herbert Spencer, from “The Individual versus the State” (published in English as “The Man versus the State,” 1884):

Legislation since this period has followed the course I pointed out. Rapidly multiplying dictatorial measures have continually tended to restrict individual liberties, and this in two ways. Regulations have been established every year in greater number, imposing a constraint on the citizen in matters in which his acts were formerly at liberty to accomplish or not to accomplish at will. At the same time heavier and heavier public, and especially local, burdens have still further restricted his liberty by diminishing the portion of his profits he can spend as he chooses, and by augmenting the portion which is taken from him to be spent according to the good pleasure of the public authorities.

It appears little has changed in this regard since 1884. According to the Government Printing Office web site (www.gpoaccess.gov) the Federal Register, published by the Office of the Federal Register, National Archives and Records Administration (NARA), is the “official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents.” Data supplied by the Office of the Federal Register and shown in Table 3 indicates that the size of the Federal Register has increased tremendously over the years:

Table 3. Increase in Federal Register Page Count

Year	Vol. No.	Total Pages
1940	5	5,307
1950	15	9,562
1960	25	14,479
1970	35	20,036
1980	45	87,012
1990	55	53,620
2000	65	83,294

(Source: Law Librarians’ Society of Washington D.C.)

Imagine reading 80,000 pages of “rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents” annually. It boggles the mind.

Le Bon (1897, 234-235) adds to Herbert Spencer’s observations of restriction creep:

This progressive restriction of liberties shows itself in every country in a special shape which Herbert Spencer has not pointed out; it is that the passing of these innumerable series of legislative measures, all of them in a general way of a restrictive order, conduces necessarily to augment the number, the power, and the influence of the functionaries charged with their application. These functionaries tend in this way to become the veritable masters of civilized countries. Their power is all the greater owing to the fact that, amidst the incessant transfer of authority, the administrative caste is alone in being untouched by these changes, is alone in possessing irresponsibility, impersonality, and perpetuity. There is no more oppressive despotism than that which presents itself under this triple form.

The difference between the professional politician and the professional bureaucrat is that the politician is often term-limited and can be voted out of office. Not so the bureaucrat. As a professional bureaucrat, I can remember all major policy decisions being stalled during “lame duck” periods in anticipation of a sea change from the next administration. If the answers received from the present administration were not satisfactory, by simply waiting four years an entirely different read on the rules might be provided. Policy makers come and go, but those who carry out policy stay for the long haul. This may in part be a positive attribute (constancy), but it is difficult for the public or market forces to effect change in bureaucracy (resistant to change).

One last example of a shortcoming inherent to government bureaucracy is in order.

THE INTEGRATED PLANNING SYSTEM

What follows is an example of how planning for integration does not necessarily result in integration. At the expense of immersion in a few pages of bureaucratic jargon, the reader will be illuminated with a taste of policy from the Department of Homeland Security. From “The Integrated Planning System” (IPS, 2009):

FOREWORD

The purpose of the Integrated Planning System (IPS) is to further enhance the preparedness of the United States by formally establishing a standard and comprehensive approach to national planning. It is meant to provide guidance for conducting planning in accordance with the Homeland Security Management System (HSMS), described in the *National Strategy for Homeland Security of 2007*. The *Strategy* calls for a national effort to create and transform homeland security principles, systems, structures and institutions across four key pillars of homeland security:

- Prevent and disrupt terrorist attacks

- Protect the American people, our critical infrastructure, and key resources
- Respond to and recover from incidents that do occur
- Continue to strengthen the foundation to ensure our long-term success.

The fourth pillar of the *Strategy* calls for the Federal Government to:

“Establish a more deliberate and comprehensive system that will ensure unity of effort and help maximize success as we work to prevent and disrupt terrorism, protect the American people, critical infrastructure and key resources, and respond to and recover from incidents that do occur. This new Homeland Security Management System will involve a continuous, mutually reinforcing cycle of activity across four phases: Guidance; Planning Execution; and Assessment and Evaluation.”

To execute the direction set forth in the *Strategy*, the President issued Annex I (*National Planning*) to *Homeland Security Presidential Directive 8 (HSPD-8)* (*National Preparedness*). Annex I directs the Secretary of Homeland Security to, among other tasks, develop the IPS.

By introducing a standardized approach to national homeland security planning, the IPS is an important step in enhancing our national preparedness. As this system is implemented over time, it will align and synchronize our Federal planning efforts and serve as a model for planning at all levels of government—Federal, State, local, and Tribal. IPS incorporates lessons learned from both the development of the National Planning and Execution System and the planning process and doctrine elements of the *Interim Comprehensive Preparedness Guide 101 (CPG-101)*.

Understanding several key fundamental concepts is important to ensure effective use and implementation of the IPS:

1. **The IPS has been developed recognizing that homeland security planning is based on coordination and synchronization rather than command and control.** In the Executive Branch, only the President of the United States has directive authority over Federal departments and agencies. Effective planning in this situation can only occur through Federal departments and agencies actively coordinating and synchronizing their planning with each, as required by the situation. [...]

And a brief selection from the IPS chapter dedicated to “integration of plans within and among all levels of government.”

CHAPTER 4: VERTICAL AND HORIZONTAL PLANNING INTEGRATION

[...]

3. The Relationship Between Federal and State, Local, and Tribal Planning. Federal, State, local, and Tribal planning describe each respective government’s approach to operations. Because these levels of government all provide support to

operations conducted at the local level, there are similar and overlapping functions in their plans.

a. Planning must be coordinated vertically among all levels of government to ensure a singular operational focus. As key concepts for a national planning structure, integration and synchronization serve different but equally important purposes in linking Federal plans and State, local, and Tribal plans. The goal is to ensure the effectiveness of combined Federal and State, local, and Tribal operations through integration and synchronization.

b. From the Federal Government perspective, integrated planning helps define how its agencies and departments add the right resources at the right time to support State and local operations. From the States' perspective, it provides answers to questions about working with other organizations and obtaining resources. Figure 4.1 shows the relationships among Federal, State, local, and Tribal planning efforts.

c. Horizontal Integration. Horizontal integration is the blending of a government's effort across all agencies and departments to ensure a coordinated approach to planning for major emergencies, disasters, and catastrophes no matter their origin. The Federal Government's approach is described below; *CPG 101* describes the State and local approach.

(1) Effective integration requires each Federal agency with a role in homeland security to create a planning capability and to support interagency planning efforts. A resident planning capability will allow these agencies to integrate their planning effort with the overall interagency effort.

(2) Horizontal integration also requires interagency collaboration at the strategic, operational, and tactical levels.

(3) Horizontal integration requires a senior-level forum for conflict resolution that addresses issues Federal agencies are unable to resolve as part of the normal planning process. At the Federal level, horizontal integration is accomplished through the *HSPD-1* process.

d. Vertical Integration. Vertical integration is the linking of planning and operations both up and down the various levels of government (Federal ↔ State ↔ Tribal/Local). The goal of vertical integration is to provide consistency of process despite different planning requirements. From the Federal perspective, only those departments and agencies whose statutory authority allows them to interact with State, local, and Tribal authorities participate in vertical integration. In some cases, one agency (e.g., FEMA) conducts the integration effort for many other Federal government entities.

(1) The vertical integration process balances the Federal Government's requirements to execute national homeland security strategies while

supporting the operational requirements of State, local, and Tribal governments. This is accomplished by:

- (a) Establishing a consistent planning approach across all levels of government; and
 - (b) Identifying the interface points in the planning process for each adjoining level of government.
- (2) Federal planning must be based on the requirements of State, local, and Tribal partners so that the Federal Government can provide the necessary support. The IPS provides a common process for State, local, Tribal, NGOs, and private sector to provide essential input to Federal planners.
- (3) Additionally, it is possible that traditional roles are reversed, and State, local, and Tribal officials are acting in support of the Federal Government. [...] (IPS, 2009).

The IPS document is ninety-three pages long. To be certain, the foundational principles encapsulated in this document are important to national incident response planning. Lessons were learned as a result of the events of September 11th, 2001, and this document reflects many years of study and negotiation leading to improvements in process and organization. Criticism of the work itself, and by default the efforts of many learned and experienced contributors, should be approached with a certain degree of appreciation for the monumental proportions of the task this work encompasses: nothing short of an attempt at getting all emergency planners along all jurisdictional lines to standardize their approach to incident response nation-wide.

The IPS is replete with verbiage such as “Vertical Integration,” and “Synchronization,” and “Mutually Reinforcing Cycles of Activity.” Only three pages long, the selection above uses “integrate” or “integration” eighteen times and “plan” or “planning” thirty-five times. What this document is saying over and over in various ways is, “we must plan ahead and work together.”

Why the emphasis on coordination? The various jurisdictions – federal, state, and local – are in no way obliged to cooperate with one another. Authority in a democracy is derived from the electorate and embodied by the elected official. A Sheriff is elected by the citizens of a county. Sheriff’s Deputies work for the Sheriff and are obligated to serve only those citizens who reside in the Sheriff’s jurisdiction. The President of the United States is

elected nationally. He or she appoints the various department heads. The Secretary of the Department of Homeland Security is beholden to the citizens of the entire nation. While “county” may be a sub-set of “nation,” the deputies in a sheriff’s department are in no way beholden to law enforcement officials working for the Department of Homeland Security. Because there are no lines of authority or affectual ties, integration and coordinated planning occur only through the goodwill of the various players at the various agencies. To incentivize cooperation, DHS makes various grants available for state and local agencies; if the state and local agencies want grant money for projects and improvements, they will “play nice” with their counterparts at the federal level.

Going back to the holy bureaucratic trinity – rules, product, and skills – one would assume that by simply changing the rules, the various players could be encouraged to coordinate and integrate. Unfortunately, the fourth characteristic of traditional government bureaucracy (i.e. authority) works against this seemingly simple solution. Because bureaucrats become entrenched in the specific rules of their own organization and because they are keenly attuned to lines of authority, they are all too often reticent to reach beyond their jurisdictional lines in order to create lines of communication that would facilitate the very goals of the Integrated Planning System – chiefly integration.

The systematic planning and integration regimen as outlined in the IPS document can, in fact, be counter-productive to the real work of incident responders. In Chapter 4. 3. d. (1) above, the vertical integration process is accomplished by: (a) establishing a consistent planning approach across all levels of government; and (b) identifying the interface points in the planning process for each adjoining level of government. On the face of it, this appears to be a reasonable approach. How else can planning and integration occur without establishing a planning process and identifying key players to do the planning? What happens when 30% of the “interface points” are unable to attend the meeting? How can good ideas be integrated when they are established outside the approved planning process? What does the end provider of services do if the interface points have failed to establish contact and develop processes that are cogent to the incident at hand? The very act of codification and formalization of the integration and planning process diminishes the impetus for establishing informal lines of communication.

In short, what has served bureaucracy well for generations – process, planning, integration and associated codification – is leaving government bureaucracy in a backwater; a backwater created by technology that has advanced more rapidly than can possibly be incorporated into traditional government bureaucracy. Internet technologies could provide platforms for rapid incident response and adaptation to changing circumstances. Indeed, existing websites have already provided collaboration sites that have complemented international governmental coordination and relief distribution in such events as the January 12, 2010, earthquake in Haiti and fostered collaboration in the patent process and environmental protection (more on this in Chapter 7). Governmental need for security confounds the ability to adopt emerging web technologies endogenously that could provide the platforms for massive collaborative efforts. Allowing these capabilities to reside in non-governmental organizations and the private sector may allow governmental organizations to side-step security concerns.

FIRST CONCLUSION: GOVERNMENT BUREAUCRACY IS IRREPARABLE

As previously set forth, authority is a necessary component of many of the functions carried out by government bureaucracy. But by virtue of hierarchy, authority, and power, government bureaucracy will continue to be plagued by features and characteristics similar to those portrayed here. This point has been a bit belabored, but the conclusion that government bureaucracy is irreparable, or more correctly, will forever be resistant to change and plagued by politics, should not come lightly. After all, we are all reliant on bureaucracies to serve primary security functions, and these organizations come at significant expense to the taxpayer.

There have been various schemes over the years to create better government bureaucracy – Max HR, and massive reorganization at DHS for example – and some have even keyed in on the need for power sharing and increased autonomy for workers such as “post-bureaucracy” and Market-Based Management. Some of these efforts have even provided some measurable success. But rules, product, and skills invariably play a subservient role to authority; politics as usual prevails. If, despite massive restructuring and planning and presidential directives, these organizations continue status quo, what can or should be done?

CHAPTER 4

WEBEAUCRACY, UNDERPINNINGS

This chapter will briefly describe what is envisioned as “Webeaucracy.” Central to the idea that collaboration via the Internet will play an essential role in shaping future sociopolitical discourse is an understanding of the role played by communications technologies in past sociopolitical discourse. Examples of this interplay are presented. Finally, the realization that the Internet is the dawning of a new era in communications and what this means for human socialization is explored and a basic description of interactive media (Web 2.0) is provided.

The bureaucratic holy trinity – rules, product, and skills – combined with hierarchy always leads to one thing: power. Those who spend a lifetime seeking increasing levels of responsibility are understandably reticent to remit that power when organizational needs trump personal achievement. It has been argued in this paper that this sort of traditional organizational structure is, for better or for worse, necessary. As a society we require government that fulfills certain functions that can be achieved only through legitimate authority. Traditional government bureaucracy should be left intact to muddle along as best it can in order to fulfill these necessary functions. But there are many functions necessary to the harmonious conduct of society that do not require traditional bureaucracy and associated lines of authority.

WHAT IS PROPOSED

One of the key underpinnings of this paper is that human sociopolitical interaction has liberalized over time and that this liberalization has in part been a direct consequence of communications technologies.

What this paper proposes is that we are witnessing nothing short of a revolution in sociopolitical structure, enabled by the Internet. This is a revolution that has already begun and will be further enabled through public/private bureaucratic collaboration via Internet utilities. Internet utilities staffed by armies of collaborators are already providing core

resources. These resources are already reshaping such diverse disciplines as emergency response (Palen, Hiltz, and Liu, 2007), election oversight (see Ushahidi, Ch. 7), and epidemiology (Pattie, et. al., 2009; Hulth, Rydevic, and Linde, 2009) in profound ways. Some of these products are simply incidental to core mission: web search engine results are being used to track the spread of influenza for example. In other cases, these are semi-autonomous sites that have been established as joint government/academic ventures. Increasingly however, Internet utilities are being established as fully independent and autonomous organizations that act very much like bureaucracies: sites are established with basic *rules* that make it possible for *skilled* contributors to provide a *product*. Table 4 compares the differences between traditional bureaucracy and Webeaucracy. What sets these utilities apart from traditional government bureaucracies is that they are essentially “starfish” organizations (Brafman and Beckstrom, 2006); that is, they create decentralized organizational structures devoid of traditional leadership and power. The fact that these utilities are devoid of power is their strength. It is this kernel of truth, equality for all, that makes democracy so powerful; and this kernel of truth shines nowhere more brightly than in open source Internet collaborative utilities. It is these independent collaborative utilities that *are* Webeaucracy.

Table 4. Differences Between Traditional Bureaucracy and Webeaucracy

Traditional Bureaucracy	Webeaucracy
Product controlled by the government	Product controlled by the end users
Static government controlled information	Dynamic searchable information
Hierarchy, authority, and power	Flat “starfish” organizational structure
Rules, laws, esoterica	Rules that frame the collaborative community
Resistant to change	Adapts to the task at hand

The remainder of this paper will flesh out the characteristics of Webeaucracy and collaborative Internet utilities in general. Understanding the interplay between government and communications technology is key to understanding what is fueling the Webeaucracy revolution. To that end, we turn now to a brief history of communications technology.

THE EFFECTS OF COMMUNICATIONS TECHNOLOGY ON GOVERNMENT

We should note the force, effect, and consequences of inventions which are nowhere more conspicuous than in those three which were unknown to the ancients, namely, printing, gunpowder, and the compass. For these three have changed the appearance and state of the whole world....

Francis Bacon, *Novum Organum*, Aphorism 129 (in Eisenstein, 1979).

At the dawning of computer-enabled interactive communications, Rogers and Williams (1986) described “Four Eras in the Evolution of Human Communication” in their book “*Communication Technology: The New Media in Society*.” Table 5 presents the twenty-seven events or inventions they consider to be key moments in the progression of human communication:

Table 5. Chronology of Human Communication

	35,000 B.C.	Language probably exists in the Cro-Magnon period.
	22,000 B.C.	Cave paintings by prehistoric men.
I.	<i>The Writing Era of Communication</i> (4,000 B.C. to the present)	
	4,000 B.C.	Sumerians write on clay tablets.
	1041 A.D.	In China, Pi Sheng invents movable type for book printing.
	1241	Metal type is substituted for clay characters in Korea.
II.	<i>The Printing Era of Communication</i> (1456 A.D. to the present)	
	1456	The Gutenberg Bible is printed with movable metal type and a hand press.
	1833	Mass-circulation media begin with the first “penny press” newspaper, the <i>New York Sun</i> .
	1839	A practical method of photography is developed by Daguerre, which is utilized by newspapers.
III.	<i>Telecommunications Era</i> (1844 A.D. to the present)	
	1844	Samuel Morse transmits the first telegraph message.
	1876	Alexander Graham Bell sends the first telephone message.
	1894	Motion pictures are invented and the first films are shown to the public.
	1895	Guglielmo Marconi transmits radio messages.
	1912	Lee de Forest discovers the amplification qualities of the vacuum tube.
	1920	First regularly scheduled radio broadcasting, by KDKA in Pittsburgh.
	1933	Television is demonstrated by RCA.
	1941	First commercial television is broadcast.

(table continues)

Table 5. (continued)

IV.	<i>Interactive Communication Era</i> (1946 A.D. to the present)	
1946	1946	The first mainframe computer, ENIAC, with 18,000 vacuum tubes, is invented at the University of Pennsylvania.
	1947	The transistor, a solid-state type of electronic switch that can magnify electronic messages, is invented by William Shockley, John Bardeen, and Walter Brattain at Bell Labs.
	1956	Videotape is invented by the Ampex Company in Redwood City, California.
	1957	Russia launches the first space satellite, Sputnik.
	1969	NASA's first manned space flight to the moon is guided by an onboard minicomputer that measures two feet by one and a half feet, 3,000 times smaller than ENIAC.
	1971	Invention of the microprocessor, a computer-control unit (the central processing unit, or CPU) on a semiconductor chip, by Ted Hoff at Intel Corporation, a Silicon Valley microelectronics company.
	1975	The first microcomputer, the Altair 8800, is marketed.
	1975	HBO (Home Box Office) begins transmitting programming to cable TV systems by satellite, thus setting off the rapid growth of cable TV in the U.S. (reaching 40 percent of households by the mid-1980's).
	1976	The first teletext system is provided by two British television networks (BBC and ITV), in which "pages" (frames) of text and graphic information are transmitted to home TV sets (equipped with a special adapter) by normal TV broadcast signals.
	1977	Qube, the first interactive cable television system, begins operation in Columbus, Ohio.
	1979	The first videotext system is provided by the British Post Office, so that "pages" (frames) of text and graphic information can be sent from a central computer via telephone lines to be displayed on home TV sets.

(Source: Rogers and Williams, 1986, 24-26)

Note that the interval in years between successive communications technology discoveries grows shorter and shorter. The chronology of human communication is divided into four eras: writing, printing, telecommunications, and interactive communication. This paper uses these "eras" as a construct for understanding how communications technology works to transform sociopolitical organization.

WRITING

From about 4,000 B.C. until the invention of the printing press, all written materials were produced by hand. This labor-intensive method meant necessarily that only important works enjoyed widespread dissemination, and even then were available to only the wealthy. This meant reading materials were scarce, literacy rates were low, and little effective archival and written interaction could occur among common people.

Edicts were written, carried from place to place by courier and latter post, and read aloud by clerics and assorted functionaries. The technology available during this era facilitated top-down management.

PRINTING

The printing press ushered in a previously unseen social form. A man born in 1453, the year of the fall of Constantinople, could look back from his fiftieth year on a lifetime in which about eight million books had been printed, more perhaps than all the scribes of Europe had produced since Constantine founded his city in A.D. 330. Problems of financing the publication of large Latin volumes that were used by late medieval faculties of theology, law, and medicine also led to the formation of partnerships that brought rich merchants and local scholars into closer contact. The printer had to keep on good terms with officials who provided protection and lucrative jobs. In those places where his enterprise prospered and he achieved a position of influence with his fellow townsmen, his workshop became a veritable cultural center attracting local literati and celebrated foreigners, providing both a meeting place and message center for an expanding cosmopolitan commonwealth of learning (Eisenstein, 1979, 45 & 56). Officials serving archbishops and emperors were cultivated, not so much as potential bibliophiles, nor even as potential sponsors, but rather as potential customers who issued a steady flow of orders for the printing of ordinances, edicts, bulls, indulgences, broadsides and tracts.

Some manuscript book dealers, to be sure, had served rather similar functions before the advent of printing. Italian humanists were grateful to the manuscript vendor Vespasiano da Bisticci for many of the same services that were later rendered by the printer Aldus Manutius. Nevertheless, the shop structure over which Aldus presided differed markedly from that known to Vespasiano. As the prototype of the early capitalist, the printer embraced

a wider repertoire of roles. Aldus' household in Venice, which contained some thirty members, has been described as an "almost incredible mixture of the sweat shop, the boarding house, and the research institute" (Eisenstein, 1979, 57-58). There is substantial evidence that printing played an integral role not simply in carrying out the functions of the clergy and state, but in shaping their form over time. By influencing the form of social interaction – a business is shaped by its product and the machinery of its trade – the technology itself becomes instrumental in shaping society.

There may not have been a significant social impact from printing for about the first 50 years or so. This changed abruptly in 1517 with the Reformation. For the first time in history there was unleashed a propaganda campaign conducted through the medium of printed material. The full capacity of the press to influence thought and shape public opinion was revealed in the war that ensued between Martin Luther and the Catholic Church.

We must, of course, be careful not to ascribe to the book or even to the preacher too much important a role in the birth and development of the Reformation. It would be wrong to regard propaganda and propagandists as the main cause of such developments. It is not our intention to revive the ridiculous thesis that the Reformation was the child of the printing press. It is perhaps the case that a book on its own has never been sufficient to change anybody's mind. But if it does not succeed in convincing, the printed book is at least tangible evidence of convictions held because it embodies and symbolizes them; it furnishes arguments to those who are already converts, lets them develop and refine their faith, offers them points which will help them to triumph in debate, and encourages the hesitant. For all these reasons books played a critical part in the development of Protestantism in the 16th century. Before then the Church had detected many heresies but had always triumphed over them, in the West at least. One is justifiably inclined to wonder, as Henri Hauser did, what might have happened if some of the earlier heresies (the Hussite, for example) had had the power of the press at their disposal – power that Luther and Calvin used with great skill, first in the attack on Rome and then in the diffusion of their new doctrines (Febvre and Martin, 1976, 188).

During this period, when one book after another was being banned, printing was not simply a vocation, but often an act of political defiance. To print and distribute the forbidden works of Luther was an act punishable by death. However, so great was the demand for his works that it was a matter of business necessity, not simply of devotion, to provide them to his following. There can be no doubt but that the histories of printing and sociopolitical organization are deeply intertwined.

In 1801, the postal service between Halifax, Nova Scotia and Quebec City was described as “tedious, irregular, and most uncertain.” The average delivery time between the two cities was 26 days; postal satchels were found floating in the St. Lawrence River after one boat was found crushed by ice. With many improvements, the citizens of Montreal and Quebec City enjoyed an average delivery time of 34 hours by 1824. Still, by virtue of a disinterested postal bureaucracy back in England, the majority of improvements were made not for the sake of geopolitical image in the region; rather, improvements in the communications network were driven by the needs of business: by newspaper editors; postmasters; merchants; and other users of the system (Goheen, 1987). In business, the bottom line is the bottom line. Any increase in efficiency can improve net profit. The ability to transmit information more efficiently then can be witnessed as a direct improvement in profit. It should be fairly self-evident what a monumental improvement was made when Samuel Morse sent a few dots and dashes down a wire in 1844.

TELEVISION

According to the Museum of Broadcast Communications, 70 million viewers tuned in on 26 September, 1960 to watch Senator John F. Kennedy and Vice President Richard M. Nixon engage in the first-ever televised presidential debate. Kennedy was tan and appeared fit; Nixon refused makeup and appeared gaunt on camera. While print accounts of the event indicated the two candidates were evenly matched, those who tuned in formed a different assessment. At election time, over half of all voters reported that the “Great Debate,” as it has come to be known, had influenced their decision at the polls; 6% reported that their vote was the result of the debate alone (Allen, 2010). This now famous and much-studied debate illustrates the interplay between communications technology and sociopolitical discourse.

Similarly, Great Britain has been dubbed a “TV nation.” In 1956 television cameras were removed from Parliament for a fortnight during heated debates over the Suez Canal in order to relieve the governing body of pressure from the public. It should be recognized that television is not simply a mirror, but a key site and source which tends to distill broader political discourse (Black, 2005).

It should be noted that television as a means of mass communication varies widely from country to country. In many parts of the world, television programming is simply an

arm of the government and is an extension of social and political objectives of that government (Huston et.al., 1992). “Television” is not simply a single technology, but a conglomeration of various technologies and interactions between people and financial solutions which form the basis for creating and airing programming. We will see later that this conglomeration may best be described through Actor-Network Theory as an “actor-network.” But our present concern is to understand the basic notion that with each step forward in communications modality, new relationships and social interactions are created by virtue of the change in technology. What form that actor-network takes is a function not merely of the technology, but of the interplay between people and the technology.

As an example of this interplay, television has had an obvious impact on politics, especially in the way politicians carry out a political campaign for election. Television ushered in the era of the sound-bite where political discourse is carried out in 10- to 30-second snippets rather than the full-length articles and speeches of previous centuries. Writing, and later printing, lent themselves to more-fully-developed intellectual arguments within the political arena. Television resulted in an obvious shift away from purely intellectual debate (reason) and allowed the aesthetic (emotion) to make a more significant impact on voter attitudes toward candidates. These characteristics continue today.

It takes time for a technology to be fully assimilated into the broader human skill-set. What an adult must learn, a child assimilates, and the new technology becomes hard-wired into brain organization and function. Just as printing made little impact on social form for the first 50 years, so too will it take a generation or two for humans to be fully adapted to capabilities inherent in the Internet. Current Wikipedia contributors work within the collaborative framework of a wiki because they have a mental image of what it means to contribute to an encyclopedia article. It will take time, however, for the broader public to become comfortable with this technology and infer similar mental images toward creating collaborative democracy (see Noveck, 2009). It will also take many years before the interplay between computational capabilities and interconnected networks is fully appreciated. Indeed, early empirical work on the effects of the Internet on “government” demonstrated that Internet communications with government had less of an impact than traditional contacts. However, this study issued this finding when the Internet was fledgling technology and considered only phone and letter contacts versus electronic mail contacts

(Bimber, 1999). Much water has passed under the Internet bridge in the 11 years since. There is much evidence that suggests the present era of communications technology, interactive communications, will result in a profound change in sociopolitical form.

THE INTERNET – A FOUNDATION FOR COLLABORATION

Most Americans are familiar with the Internet: many use it every day. Search, research, and communication via what has become a powerful critical infrastructure are familiar to almost all who live in developed countries. The basic underlying attributes that make communications via the Internet – hypertext (links), hypertext transfer protocol (http), hypertext markup language (html), electronic mail (email) – these and other basic functions of the medium are at least vaguely familiar to most users. Versatility and uses of the Internet will not be elaborated; and that the assumption of familiarity can be made here is partial proof of the utility of the medium. Many people already engage in social collaboration every day. As an informal demonstration, all students using computers in the resource room at the San Diego State University library were observed in a single sampling. Forty-eight students were on various web sites (better than half of these appeared to be actually studying), one student was checking email, and thirteen students were on Facebook. It is a big leap from sharing content with friends on a social site to improving society on a collaborative site. This simply shows that the basic skill set is demonstrated to robustly exist among a random group of college students, the “labor pool” from which future Webeaucracy collaborators will self-select.

Collaboration is defined by the Webster’s New World Dictionary as: “1. to work together, esp. in some literary or scientific undertaking, 2. to cooperate with the enemy.” Wikipedia (“Collaboration” accessed August 19, 2010) seems to offer a more up-to-date or possibly net-centric definition: “Collaboration is a recursive process where two or more people or organizations work together in an intersection of common goals – for example, an intellectual endeavor that is creative in nature – by sharing knowledge, learning and building consensus.” Hold that thought.

To sum up the philosophical underpinnings thus far presented: none of us is perfect and we are miserable creatures who arose from some base state; we establish government through mutually beneficial cooperation (submission) in order to establish security; freedom

is basic, and the ultimate justification for this submission to government is the assumption that fundamental liberty is assured; through our act of submission we create authority; and authority can be abused, so the assurance of fundamental liberty rests with the individual. To these basic assertions we now add the idea that *sovereignty is inalienable*.

Jean-Jacques Rousseau (1762, 63), in “The Social Contract,” asserts that sovereignty is inalienable:

The first and most important deduction from the principles we have so far laid down is that the general will alone can direct the State according to the object for which it was instituted, i.e., the common good: for if the clashing of particular interests made the establishment of societies necessary, the agreement of these very interests made it possible. The common element in these different interests is what forms the social tie; and, were there no point of agreement between them all, no society could exist. It is solely on the basis of this common interest that every society should be governed.

I hold then that Sovereignty, being nothing less than the exercise of the general will, can never be alienated, and that the Sovereign, who is no less than a collective being, cannot be represented except by himself: the power indeed may be transmitted, but not the will....

This does not mean that the commands of the rulers cannot pass for general wills, so long as the Sovereign, being free to oppose them, offers no opposition. In such a case, universal silence is taken to imply the consent of the people....

This position is not without its critics (e.g. Mazrui, 1967, who questions what Rousseau meant by “Sovereignty.”). However in the passage above, it appears fairly clear that Rousseau intends “Sovereignty” to be synonymous with “the general will.” Taken at face value, as a construct for understanding the mechanism through which majority rule gains legitimacy, this dictum is an important construct for understanding one of the basic tenets of democracy, that is, that the general will alone can direct the state and that this is generally in the best interest of the common good.

What does this have to do with *collaboration*? Everything. For the first time in history, the general will has control of a prime communications medium: the Internet. The intelligentsia, clerics, and government controlled communications during the first two eras of communication: writing and printing. They had control over knowledge and over channels of communication, and they exploited these for their own good and for that of the state, thus dominating the psychic reality of the public. Depending on what country you live in, telecommunications is controlled either by the government or large corporations. The introduction of mass communications technology has not lead to a democratization of

communications technology in the sense of the group in power giving up using the media as a means of advancing its own interests. Thus, until the advent of interactive communications technology, communications continued to follow much the same principles adopted by the ancients. The only difference is that mass media is even more subtle and effective in manipulating the collective consciousness (Nordenstreng and Varis, 1973, 396-397). Only in the interactive era have the means of communication become level across the playing field; each computer connected to the Internet is a node just as any other, given certain limitations. And on a relatively level playing field, all players have basically the same opportunity to perform. This sets the stage for true collaborative democracy as never seen before. The general will has an opportunity to exert itself on government as never before.

If not convinced of the central role of communications technologies in political discourse, think for a moment what it would be like if all forms of communication were illegal or controlled entirely by the state. That was precisely the state of affairs that led to the student uprising in Tiananmen Square. After the death of popular politician Hu Yaobang, students began holding public meetings in the square in his honor. Such was the control of the state over communications that students had little choice but to transmit covert messages to one another via cards and flyers that were overt demonstrations of appreciation for Hu. The Politburo declared the period of mourning over, but the students continued to meet in the square. They then made various demands, among them “freedom of the press.”

Students were confounded by the conundrum of how to challenge state ideology without provoking the military. Their answer was to form a newspaper the *News Harold*. Over a thousand journalists joined their demand for freedom of the press resulting in a harsher stance from Politburo members. University telephone lines were cut; students then produced and replicated their message with cassette tapes, sending them through confidants to various universities throughout China (see Wark, 1994, 95-164 for an excellent treatment). The rest, of course is well known in the West: hunger strikes inspired hundreds of thousands to join in the demonstrations and the Chinese “Bureau of Public Safety,” with the help of the military, killed many thousands before the “turmoil” was routed. This basic narrative is virtually unknown in China today because the state controls all media.

Hu himself had published a lengthy article in the state controlled *People’s Daily*, affirming that it was “policy that the media must be the ‘tool’ of totalitarian thought control”

(Wark, 1994, 100). With all means of effective communication other than oration taken from them, the students had little choice remaining but to assemble en masse. For a society where the opposite is true, where people may form any line of communication they can dream of (via the Internet for example), there is much opportunity for discourse without assemblage. It is hoped this freedom will provide adequate venue for the more peaceful virtual demonstration of public will.

The study of “virtual communities” formed by “netizens” (citizens of the Internet) falls naturally to anthropologists. However, those descriptive tools that emerged during the telecommunications era are proving inadequate to describe the emerging intersections of Internet technology and human communication. Many anthropologists have realized that the Internet is not simply a derivative of prior forms of social communication but constitutes something entirely new. “Moreover, rather than fitting within anthropology as usual, these ‘new’ technologies of communication compel anthropologists to rethink their disciplinary procedures of knowledge production” (Axel, 2004, 26). It appears that modern linguistically-based ideologies of communication are inadequate to describe human communication since the advent of present technologies (see Axel, 2006).

The fundamental technology set underpinning collaborative Internet utilities is known collectively as “Web 2.0.” Web 2.0 architecture is dynamic and participatory (Table 6). Internet users of blogs, wikis, social networking, and other collaborative sites do not simply consume content, rather, they interact with and create content. Where content was once created and controlled by industry or the media, content is now created by users in a dynamic environment.

Table 6. Differences Between Web 1.0 and Web 2.0 Features

Web 1.0	Web 2.0
Content published by owner	Content created by users
Portals	Search engines
Directories and taxonomies	Tagging and “folksonomy”
People and data	People, data, and “mashups”
Stickiness	Syndication

(Source: Drapeau and Wells, 2009)

Net savvy participants create their own web sites using “open source” programming provided free of charge on the Internet. “Mash-ups” can be made of various programs

available to suit the needs of specific tasks. The possibilities for site construction and design grow daily and are seemingly endless.

The implications for government have not gone unappreciated. A substantive study from Mark Drapeau and Linton Wells (2009) of National Defense University is entitled “Social Software and National Security: An Initial Net Assessment.” While they take a look at the Internet from a military “blue vs. red” perspective, their insights into the use of social software and potential effects on global political and social norms hint at broader implications:

Communication on the Internet is no longer a controlled, organized, exclusive, product-driven monologue; it is an authentic, transparent, inclusive, user-driven dialogue. Increasingly, people who habitually use the Internet are not only browsers or readers, but also providers and participants. And listening is the new talking. If you work for the government, someone – right now – is talking on the Internet about your agency and your mission – effectively, your brand. The people participating in these conversations have less trust in mainstream media messaging and traditional advertising, and more trust in word-of-mouth conversations within their social networks. Government ignores this fact at its peril (Drapeau and Wells, 2009, 3).

There are many thousands of refugees from the recording industry who could attest to the unexpected consequences of the transition to dynamic and participatory Web 2.0 technologies. The effects of the shift from a centralized business-controlled industry to a decentralized musician- and consumer-controlled industry are sharply apparent in the recording industry.

CHAPTER 5

WEBEAUCRACY, CONSTRUCTS FOR UNDERSTANDING

This chapter looks more closely at the interplay between communications technologies and sociopolitical discourse asserting that the technology itself has bearing on social and political form. Then, Actor-Network Theory, the Subitizing Limit, Metcalfe's Law, and Parallel Distributed Processing are used as heuristics for explaining why collaboration via the Internet has potential far beyond previous forms of communication for facilitating change in future human socialization. Finally, collaborative Internet utilities emerge as collective consciousness and totemic religious figurehead.

Human social and political organization has liberalized through the centuries, and this progression has in part conformed to structural limitations inherent in the various communications technologies available contemporaneously. This is a strong statement that should not be taken to suggest that other forces were not necessary or fundamentally requisite. Certainly, civilization has gone through various transformations throughout the millennia, and those the result of many mechanisms: the importance of the feudal system as a precondition to capitalism; trade via the seas, population growth as a precondition to the emergence of the city-state; etc. These and many other technological and social developments have had an important bearing on the evolution of civilization.

To simply observe, however, that communications technology has made advances and governmental organization has made advances and that the two have occurred concurrently, with the same degree of correlation as communications advancement and population growth, would be a far weaker statement and would miss the mark.

As noted earlier, of all the worlds' great inventions, three are widely regarded as being of greater importance to the construction of civilization than all others: the press, gunpowder, and the compass. But of all technological advances, the printing press holds a special place as a bellwether technology; its product led to the illumination of the world, for the printed word is the principal conveyance of human thought and ideas. Where there is freedom of the press, there is light and liberty.

THE CORRELATION BETWEEN ADVANCES IN COMMUNICATIONS TECHNOLOGY AND CHANGES IN GOVERNMENTAL ORGANIZATION

Using Rogers and Williams' "Chronology of Human Communication" as a scaffold, benchmark changes in sociopolitical organization are presented in Table 7:

Table 7. Correlation Between Communications Technology and Politics

Advances in Communications Technology	Trends in Governmental Organization
Writing – 4000 B.C. to present: Top-down communications flow from authority to functionaries, few to few.	775 B.C.: Lycurgus gives laws to Spartans. 621 B.C.: Draco publishes laws for Athens. 505 B.C.: Fledgling Democracy in Athens. 450 B.C.: 12 tables of Roman law. 1215 A.D.: Magna Carta.
Printing – 1456 to present: Top-down communications flow from authority to public, few to many.	1653: Oliver Cromwell semi-autocratic leader of England, Scotland, and Ireland. 1748: Montesquieu publishes <i>De l'Esprit des Lois</i> , articulated Separation of Powers. 1776: U.S. Declaration of Independence. 1789: French Declaration of the Rights of Man and of the Citizen/Revolution. 1796-1804: White Lotus Uprising in China. 1804: Napoleon crowned Emperor of France.
Telecommunications – 1844 to present: Corporate or government down communications flow from those with capital means to public, few to many.	1848: Communist Manifesto published. 1868-1871: Meiji created prefectures, representative government in Japan. 1870: 15 th Amendment – Race no Bar to Vote. 1911: Chinese Republican Revolution. 1917: Bolshevik Revolution. 1921: Chinese Communist Party established. 1949: People's Republic of China. 1960's: Rising influence of Political Action Committees in the United States. 1989: Tiananmen Square Incident. 1991: Soviet Union dissolved.
Interactive Communications – 1995 to present: Distributed communications flow, many to many.	2001: China enters WTO. 2007: Treaty of Lisbon adopted by 27 EU countries. 2009: Iranian election protests. 2000's: Globalization. 2001 to Pres.: War on Terror

There is a substantial body of work supporting the idea that communications technology has contributed to the shaping of society and culture (see Duncun, 1985; Couch, 1996); especially that the mass media have had substantial impact on modern society and

social policy (see Rivers, Peterson, and Jensen, 1971; Gerbner, Gross, and Melody, 1973; McAnany, Schnitman, and Janus, 1981; and a comprehensive bibliography compiled by Shearer and Huxford, 1983). The general narrative here is that formation of the social self, and society as a whole, occurs through communication. It is the transmission of symbols – be they pictographs, written language, orality via radio, or television images – that conveys the messages that shape society; the more symbolic the message and the more people that are reached by a communications technology, the more concrete the message and more homogeneous the society. It is one thing to assert that communications technologies have been a driving force in shaping society by conveying human thought; it is an entirely different matter to suggest the characteristics of the technology itself, assuming a uniform message across technologies, has a shaping influence. That collaborative Internet technologies will have a revolutionary impact on sociopolitical form could be argued if only the former were true; the assertion gains far greater credence if the latter is true.

People have not changed substantially over time; our bodies and emotional functions are still in the stone-age. Politics is politics, and though the media may change, it is simply people manipulating the media to their advantage: be it the press in the 1500's or television in the 1960's. How then could the Internet result in a substantively different socialization from previous forms of communications technology?

To assume the individual is sociology's atom, as Weber argued, is as false as the belief that the Earth is the center of the universe. Dyads and their environments are sociology's atom and the lower limit of meaningful action (Couch, 1996, 242). To study the individual is to study psychopathology. It is the interactions *between* that result in socialization and it is this space that we should consider. When two people speak to one another (oration), they pass information: love; respect; and symbols representing various other emotional states and transactions, whether attractant or repellent, result in socialization. The written word was a boon to humankind in that it provided for abstract communication and archival that could bridge the problems of proximity and time. The press increased the rate with which the written word was reproduced, and radio and television reached even broader audiences with verbal and visual symbols. But at the end of the day, it is still simply people – Hollywood, the government, etc. – that manipulate the modality of the day. How then does the technology itself shape society?

It seems clear that governance has made a progressive march through time away from dictatorship and toward preserving the rights of the individual; from autocracy to self-governance; from clan to town to city-state to nation-state. One theory that might help explain these trends is that of *transnational revolution* which asserts that revolution is transported from nation to nation. For example the French Revolution forced the idea of the nation on the divided Germans and injected the idea of liberation into Russia (see van der Pijl, 1996). It seems fairly obvious that a primary transport mechanism for transnational revolution is communications technology. Without communications technology, revolutionary ideas could not move and reassert themselves. But this notion still provides an incomplete explanation of the idea that the communications technologies themselves shape sociopolitical form. Before telecommunications, the print media was used to transmit revolutionary ideas; the seeds of hate and discontent were spread from place to place, simply at a slower pace.

So how then does the technology itself shape society? A concrete example of technology shaping social interaction comes from police operations. Before the advent of the handheld and car radios, police officers “walked a beat” and worked with greater autonomy than they do today. Rarely does an officer in the field today make an administrative decision without the input of a supervisor via radio. In earlier generations, officers made autonomous decisions in the field or transported the suspect to the station for “further investigation.” Today officers can call one another on the radio in order to arrange a meeting on a whim; before the radio, officers would have to make prior arrangements to meet at a specified time and place. Most importantly, radio technology provides situation awareness: by listening to the radio, officers can maintain a mental image of the operational environment and keep track of peers providing support to one another as necessary. If socialization occurs via communication, the social group “police,” while still adhering to basic age-old tenants of loyalty, service, pride, etc., has experienced subtle changes in socialization over time as a result of changes in communications technology.

A better example of communications technology shaping society comes from Nazi Germany. It is natural to want to disregard Hitler as a mad man. He left so horrendous a blot on human history it is only natural to desire to disregard the entire aberration, but much can be learned from his use of rhetoric to unite the masses. How did Hitler stir the masses and

unite Germans to war against the entire world and to commit unspeakable horrors against six-million non-Aryan people? Hitler, the great orator, repeated many times throughout *Mein Kampf* that the purpose of rhetoric and of all political symbolic action is to give people a deep sense of community. “The condition for doing this, the stage on which the political drama must be set, is the public mass meeting. The most important political actor, the shaper of men’s souls, is the orator” (Duncan, 1985, 225-229).

This raises a chicken-egg question. Did Hitler simply manipulate the technology of the day to his advantage, or did the technology shape Hitler’s evil plan? Obviously, the radio, the public address system, and the news real did not of their own accord instruct Hitler to form the Third Reich. But while battling away with pen and paper in Landsberg on the Lech, Fortress Prison, his thoughts and writings were most certainly informed by the technologies of the day. He was fully aware that mass audiences as never seen before could be instructed and roused and that their reaction to his oration could be captured and replayed for the wholesale socialization of all Germans. In personal communications with those who were Hitler youth, it was described as a heady time and all Germans felt as though they were on top of the world. This may be difficult for us to comprehend after the fact, but such was Hitler’s exploitation of zeitgeist. Hitler may have become more than just another agitator on a soap box without these communications technologies, but it is difficult to imagine he could have achieved such thorough sociopolitical homogeneity.

A more recent example of the interplay between communications technology and socialization comes from the bureaucratic setting. Prior to the advent of email, much bureaucratic communication was done via mail, facsimile, and telephone. Because of ease-of-use, email has supplanted many traditional interactions. So thorough a transformation has taken place, that one colleague of the author commented a few days after attending a change of command ceremony that he did not fully appreciate his boss was no longer a part of the chain-of-command until he was instructed to remove the recently departed superior from his email list. Such has become the elevated position associated with email in bureaucracy that the email recipient (or email address) holds a more concrete association with administrative duties than does the corporeal person.

Some bureaucrats fail to appreciate the archival and retransmission properties of email. Once sent, an email can take on a life of its own, sometimes being used against the

originator. While liaisons and schemes have always been a part of human interaction, email has provided an even greater opportunity for collusion and reprisal than existed in the past. Bureaucrats wrestle every day with the new social order that has taken shape as a result of email. The most confounding quality is the compression of hierarchy. Where leadership was once isolated by receptionists and physical distance, the rank and file have discovered their superordinates are only a “click away.” While a leader may have an “open door policy,” both unwritten and written decorum dictates the bureaucrat adhere strictly to chain-of-command when sending an email. Those in leadership up and down the chain-of-command are confronted almost daily with unintentional and intentional violations of email decorum. The inadvertent compression of hierarchy via email is changing informal bureaucratic social structure, and may change formal structure, over time.

So part of the reason interactive communication technology will have a substantial impact on society is that these technologies foster the compression of space and time. Imagine two sisters living in Singapore and Australia. Via the Internet, social interaction continues, and state and temporal boundaries evaporate. Interactive communications have been the technologies that have enabled globalization that has resulted in an unprecedented increase in economic, political, social, and cultural interactions among the populations of all regions and countries. Politics was once dominated by state actors; however transnational corporations, collective international institutions, and even individuals are playing an increasingly dominant role. The vast diversity of viewpoints, far from being cacophonous, is expressed through the Internet with a certain order and relative cohesion (Therien, 2006). The people have not changed, the space between them has.

These examples, while anecdotally supportive of the idea that the technology itself shapes society, fall short of explaining entirely how it might be that collaborative Internet utilities may have a greater impact on society than previous communications inventions. Toward a fuller understanding, some basic theoretical underpinnings should prove instructive.

ACTOR-NETWORK THEORY

Actor-Network Theory (ANT) is a distinctive approach to social theory and research which originated in the field of science studies. Developed by Science and Technology

Studies scholars Michel Callon and Bruno Latour, the sociologist John Law, and others, it can more technically be described as a "material-semiotic" method. This means that it maps relations that are simultaneously material (between things) and semiotic (between concepts). It assumes that many relations are both material and semiotic. For example, the interactions in a bureaucracy involve people, their ideas, and technologies. Together these form a single actor-network.

Actor-network theory tries to explain how material-semiotic networks come together to act as a whole (for example, a bureaucracy is both a network *and* an actor that hangs together and for certain purposes acts as a single entity). As a part of this ANT may look at explicit strategies for relating different elements together into a network so that they form an apparently coherent whole.

According to actor-network theory, such actor-networks are potentially transient, existing in a constant making and re-making. This means that relations need to be repeatedly "performed" or the network will dissolve. (The bureaucrats need to come to work each day, and computers need to keep running.) ANT also assumes that networks of relations are not intrinsically coherent, and may indeed contain conflicts (there may be poor labor relations, or computer software may be incompatible). Central to ANT is the concept of translation, which is sometimes referred to as Sociology of Translation, in which innovators attempt to create a *forum*, a central network in which all the actors agree that the network is worth building and defending (see Callon, 1986).

A few additional key principles:

Actants: ANT defines *Actants* to denote human and non-human actors, and assumes that Actants in a network take the shape that they do by virtue of their relations with one another. It assumes that nothing lies outside the network of relations, and as noted above, suggests that there is no difference in the ability of technology, humans, animals, or other non-humans to act (and that there are only enacted alliances). As soon as an actor engages with an actor-network, it too is caught up in the web of relations, and becomes part of the "entelechy" (the condition of something whose essence is fully realized – an Aristotlean philosophical concept).

Punctualisation: If taken to its logical conclusion, nearly any actor can be considered merely a sum of other, smaller actors. An automobile is an example of a complex system. It

contains many electronic and mechanical components, all of which are essentially hidden from the view of the driver, who simply deals with the car as a single object. This effect is known as punctualisation.

When an actor-network breaks down, the punctualisation effect tends to cease as well. In the automobile example above, a non-working engine would cause the driver to become aware of the car as a collection of parts rather than just a vehicle capable of transporting him or her from place to place. This can also occur when elements of a network act contrarily to the network as a whole. In his book *Pandora's Hope*, Latour likens depunctualization to the opening of a black box. When closed, the box is perceived simply as a box, although when it is opened all elements inside it become visible (Latour, 2005; much of the forgoing from Wikipedia "ANT," 2010).

So from this perspective, book, television, and Internet are actors, as are people within actor-networks. ANT then may provide a framework for describing the interplay between people-book or people-internet as actor-networks, putting flesh on and quantifying the entire unity. It is important to note that the actor-network "Internet," while transient, can be defined and seemingly function as a single entity. This is in part because of the summation capabilities of transactions which occur on Internet sites. Humans left to themselves or previous communications technologies quickly reach collaborative limits. These boundaries are in part inherent to human cognition and in part a function of the communication technology employed. Understanding the subitizing limit helps to understand why an architecture which naturally extends this limitation can be so powerful.

THE SUBITIZING LIMIT AND WORKING MEMORY

The Princeton psychologist George Miller (1955) originally described a remarkable phenomenon. In "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," he showed the effective capacity for the retention of distinct objects such as digits or letters to be between 5 and 9 bits. Much work regarding short-term memory and the subitizing limit has been performed in cognitive science since this early work. Generally, it appears that the average person can maintain four separate distinct "chunks" in working-memory and that visual working memory-tasks and verbal working memory tasks are processed differently in the brain and both are subject to

interference. You know this to be true: next time you look at a phone number (visual stimulus) and attempt to remember it for several seconds while your children are talking to you, you will realize that this interference causes you to work harder as you rehearse this number over and over in working memory. Have someone speak the number to you (auditory stimulus), then perform the same task, and you will experience essentially the same phenomenon, but it appears that our brain is processing the information in a slightly different manner.

While there may be no direct corollary, as a heuristic for understanding socially-complex phenomena, the subitizing limit may be useful. Change the modality, and the “social networking subitizing limit” changes. If someone engages in traditional face-to-face meetings, they can interact with only so many people in one day and still remember their attributes such as names, title, company they work for, etc. Homer’s Iliad and other similar works are roughly fifteen thousand lines; this is thought to be the outside limit for memorization in the oral tradition. Add a telephone to the actor-network, and a person may be able to extend their sphere of influence and improve their memory and organizational skills by keeping a pen and paper handy. Email provides the naturally-beneficial additions of archival and organization. Email address books provide organization that effectively increase the ability to juggle and organize many contacts throughout the day. Imagine then, an Internet-based social architecture that processes many simultaneous inputs from actors – both human and technological – across the country, or across the world. The value of the network formed by these connections increases geometrically with the increase in nodes (see Metcalfe’s Law below). This geometric increase can harness the power of crowds and becomes far more manageable with the right interactive communications tools.

With the advent of printed media came the ability to reach a wider audience; with television, a wider audience still. The Internet represents not simply another step forward in our ability to broaden the audience; rather, it represents an exponential leap in communications capabilities. Not only are ideas documented and transmitted as in books, and with video as in television, but the recipient can manipulate the product and contribute to it. Further, the resultant interactions can be documented, archived, and linked, thus effectively increasing the number of people with whom one can interact. The Internet then does not simply replace books or television as links between nodes (Metcalfe’s Law) or

intermediary (Actor-Network Theory), but results in a previously unknown means of interaction: many-to-many, one-to-one, or any combination thereof. This ability to effectively increase interactions with others is nothing less than an evolutionary leap in the broader sociological ecosystem. Metcalfe's Law may similarly explain why with each advance in communications technology, the resultant actor-networks display an apparent exponential growth in impact.

METCALFE'S LAW

Metcalfe's law states that the *value* of a telecommunications network is proportional to the square of the number of connected users of the system (n^2). As the number of nodes increases, the complexity of the system increases as a function of the "triangular number" $n(n-1)/2$. Two nodes ($2n$) can make only one connection: $2(2-1)/2=1$; five nodes = $5(5-1)/2 = 10$ connections; and twelve nodes = sixty-six connections, etc.

Metcalfe's law may be useful as a heuristic for describing certain social networking problems. Specifically, as the number of nodes (bureaucrats, netizens) in a network (bureaucracy, website) increases, the number of possible connections increases proportionally with n^2 . It is only now, for the first time in history, that utilities exist for truly taking advantage of this effect, making large numbers and diversity a beneficial attribute.

Imagine a meeting with one co-worker where you are formulating a new policy for a new process. The two of you work day and night for a week and provide a solution for the company of which you are rightfully proud. A day later, you have answered twenty questions, and made three revisions to your masterpiece as a result of unforeseen issues.

Now imagine the same scenario, but this time you call in a group of ten from various departments. You attempt to spend an equal number of man-hours formulating the new policy, but because of the increased complexity of the discussions, it soon becomes clear that you will gain no time advantage from calling in the additional "help." The resultant policy product, however, is far more robust, and runs into fewer snags than the first product.

Same exercise, call in EVERY employee from EVERY department. The meeting is unmanageable, the process and input results in a daunting mountain of information, but once you compile the resultant input, the final policy is sufficiently robust to accommodate nearly any combination of possibilities.

Substantial input can achieve something approaching an ideal system. The trick is to harness the input without the process or output devolving into anarchy or chaos. The goal of collaborative architecture for academia, business, or government bureaucracy should be to embrace the increased connectivity shown in Metcalfe's Law and to effectively increase the social networking subitizing limit of each of the contributors. An equally important attribute is the natural aggregation inherent to the Internet. Imagine the power of harnessing great complexity, simultaneously processing and connecting like inquiries, and packaging these inputs into a robust architecture that results in many more well-organized interactions than permitted by previously existing means.

It should be apparent that each node is not exactly equal to 1 and that the values of links between nodes are also variable. When a person visits a site repeatedly or works with a friend, the value of that link may equal 1.0. If the site was visited in the distant past and the user cannot remember the name of the site from their list of "favorites" or the person is working with a new acquaintance, the value of that link may be, for the sake of discussion, only 0.3. Another analog for connectivity strength from one site to another can be found in web search engines. The more links from one site to another, the greater the likelihood a site will be at the top of a search engine results list. These effects can be monitored and manipulated statistically to quantify collaborative Internet products. There are many other factors that go into search engine algorithms the mechanics of which are unimportant in the present discussion. What is of consequence is that the Internet provides connectivity to, and summation of, incredible numbers of nodes. This complexity can be harnessed in collaborative utilities to provide brain-power for products we have yet to conceive of and to answer questions we have yet to think to ask.

There is a much studied phenomenon in neuroscience that makes a nice analog for studying the strength of these connections: Parallel Distributed Processing.

PARALLEL DISTRIBUTED PROCESSING

Vertical flow of information was singled out as a hallmark indicator of ineffective insular government bureaucracy by various panels investigating intelligence failures that led up to the terrorist events of 9/11. Horizontal integration and fusion centers have been the fix-all for "stove piping," bringing down walls that existed between the intelligence community

and the law enforcement community. While much investigation has been conducted into the efficacy of resultant practices, it is beyond the scope of this work to pass judgment or even lend a voice to that debate. That being said, bureaucracy, of necessity, requires formal lines of communication and hierarchical command structure. Formal organization and lines of authority can be naturally antithetical to the free flow of information in the interactive-communications era. It may be beneficial to introduce “Parallel Distributed Processing” (PDP) as an analogy for a desirable attribute of future Webeaucracy collaborative architecture.

PDP attempts to model human information processing in terms of a network of interconnected units operating in parallel. The units are typically classified as input units, hidden units, or output units. Each unit has a default activation level that can vary as a function of the strength of (1) the inputs it receives from other units, (2) the different weights associated with its connections to the other units, and (3) its own bias. PDP, unlike traditional computational models in cognitive science, holds that (a) the representation of information is distributed (not local), (b) memory and knowledge for specific things are not stored explicitly, but stored in the connections between units, and (c) learning can occur with gradual changes in connection strength through experience (see Kincade, 2010). Today we have some vague ephemeral notion of “the Internet” and information existing in and being manipulated somewhere in the Web. Rather than viewing individual sites as semantic repositories of information and collaboration, by virtue of hypertext, many connections may be made between discrete bits, sites, contributors, or databases. The strength or assertiveness of each collaborative input may be weighted by virtue of (1) inputs from other actors/sites, (2) strength of connections to other sites (link, banner, text box), and (3) its own visibility on the web (optimization). In short, humans do not necessarily discover information based on the semantic strength of individual repositories; rather, they stumble into information and ideas on the Web based, in part, on the strength of links between sites and based on their own bias at the time of the search.

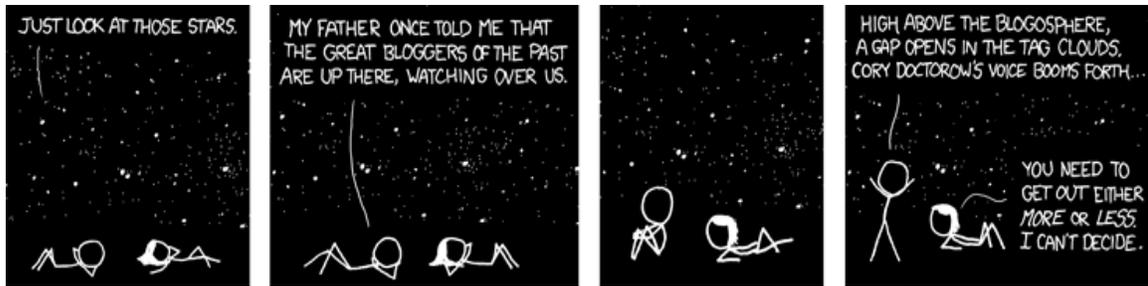
To reiterate, it is what occurs in the space between individuals that informs our understanding of socialization and the formation of society more so than looking at individuals themselves. The communications technologies that fill the space between individuals are as important to the creation of society as the individuals themselves. When

the space was filled with the written word, symbols were transmitted based on the limitations of the medium. When television filled the space, that technology lent its characteristics and limitations to the socializing equation. Now that interactive communications are filling the spaces between people, a whole host of characteristics – e.g. fluidity, links to many nodes, dynamic searchable information, reduction of physical barriers – influence the socialization of participants in profound ways.

An appreciation of the fundamental ideas encompassed by PDP, Metcalfe's Law, and the natural limitations of human memory (the subitizing limit) rouse a greater appreciation for the strengths inherent to the archival, organizational, and knowledge management properties of collaborative Internet utilities. Some combination of these constructs for understanding may provide an elegant means of describing the value of a collaborative bit (of information), a collaborative actor-network, or some other product emerging from collaborative Internet utilities. The relative value of a collaborative actor-network, or bit generated by a collaborative actor-network, will become of increasing political, economic, and social importance as Webeaucracy comes of age.

SECOND CONCLUSION: WEBEAUCRACY IS DISTRIBUTED COLLECTIVE CONSCIOUSNESS

To recapitulate, people and interactive communications technology can be described as actor-networks; the subitizing limit (and history) suggests people left to their own devices cannot fully harness the mental power of crowds; Metcalfe's law suggests that as the number of nodes increases, the value of collaborative actor-network increases exponentially; interactive communications technologies effectively increase the subitizing limit; and at some macro scale, these interactive collaborative actor-networks can be described by the same rules that govern Parallel Distributed Processing resulting in crowd sourcing that acts as a type of distributed collective consciousness. The Internet assumes the role of totemic religious figurehead uniting the members of society through mechanical solidarity forming a collective consciousness (for a summary of Emile Durkheim's, *The Division of Labour in Society*, 1893, see Fish, 2002). The idea of "Internet as totemic religious figurehead" has already emerged in popular culture (Figure 1).



(Source: Munroe, <http://xkcd.com/428/>)

Figure 1. The Internet as totemic religious figurehead in popular culture.

We are limited as individuals, but through collaborative Internet utilities, like ants working together to bring down a mighty tree, for the first time in history humans can work together in vast numbers harnessing the power of crowds, each chipping away at a piece of the puzzle until mountains are moved. “Power” then emerges in an elevated state (focused on the product) from that known through previous human experience (focused on an individual or organization) through the act of collaboration.

CHAPTER 6

WEBEAUCRACY, THE REVOLUTION

This chapter looks at how traditional bureaucracy will be shaped by the public will through collaborative Internet utilities.

For those old enough to remember living in a world with the “Iron Curtain,” whether born in the East or West, this edifice of Eastern socialism was seemingly immutable. Yet, despite the seemingly unwavering will of state functionaries in the East, something remarkable occurred to bring it down. What exactly brought the Iron Curtain down will be a subject of some debate for many years to come. It stands to reason, however, that some basic social change occurred that put pressure on those ideals that brought socialism into being in the first place. One reasonable version of that history is presented here:

MARKET FORCES AND THE FALL OF SOCIALISM

In 1989, the communist government of one Eastern European country after another collapsed: first Poland, then Hungary, East Germany, Bulgaria, Czechoslovakia, and finally the Romanian socialist government. Fortunately, Romania was the only case where violence was enlisted to finish the coup. City University of New York distinguished Anthropologist Katherine Verdery (1999) offers her explanation of the forces that led to this social transformation:

It is clear from what I have said that whereas consumption in our (American) society is considered primarily a socioeconomic question, the relative neglect of consumer interests in socialism made consumption deeply political. In Romania in the 1980's (an extreme case), to kill and eat your own calf was a political act, because the government prohibited killing calves: you were supposed to sell cheap to the state farm, for export...as long as the food offered was edible or the clothes available covered you and kept you warm, that should be sufficient. If you had trouble finding even these, that just meant you were not looking hard enough. No planner presumed to investigate what kinds of goods people wanted, or worked to name new needs for newly created products and newly developed markets.

American bureaucracy, while not nearly as pervasive in all facets of daily life as those organizations found in cold-war Romania, has some of the same features. Why ask the

public what they want out of government when they have but one vendor for most government services? With no competition for bureaucratic services, why gain public input?

Verdery continues:

For those groups who became concerned with questions of output and productivity, the solutions almost always involved introducing mechanisms such as profitability criteria and freer markets. This meant, however, introducing a subordinate rationality discrepant with the system's inner logic and thereby threatening continued Party rule. Market forces create problems for socialism in part for reasons treated implicitly or explicitly above in contrasting capitalism's demand-constrained economies with socialism's economy of shortage (its lack of interest, for example, in the salability of its products). But more broadly, markets create problems because they move goods horizontally rather than vertically toward the center, as all redistributive systems require. Markets also presuppose that individual interest and the "invisible hand," rather than the guiding hand of the Party, secure the common good. Because *these horizontal movements and individualizing premises subverted socialism's hierarchical organization*, market mechanisms had been suppressed. Reformers introducing them were opening Pandora's box (emphasis added; Verdery, 1999).

And so too, many in Western governmental bureaucracy would prefer not to open a "Pandora's box" by injecting public input into their processes. As can be shown many times over in business, market forces lead to greater efficiency and responsiveness to consumer demand because of the profit motive. In the government bureaucratic setting, absent profit motive, it may not be possible to rely on market forces to achieve greater efficiency and responsiveness (see Loevinger, 1966). How precisely to coax a government bureaucracy to respond to market forces is elusive.

Having concluded that government bureaucracy is irreparable, it may seem counter-productive to that position to suggest here a force – the open market – that could potentially subvert hierarchical organization, thus resulting, presumably, in positive change; but optimism dictates we not give up hope. What may be suggested from the fall of Communism in Eastern Europe in 1989 is that market forces may be instrumental not simply in reorganizing hierarchical bureaucracy, but in radically changing it. The argument assumes, however, that Western governmental bureaucracy is as trenchantly hierarchical and devoid of profit motive as was bureaucracy in the Eastern Block. The politics that shape policy-driven bureaucracy in the West are far different from the politics that existed in Cold War Eastern Europe. It may be a stretch to assume that injecting open market economics into government bureaucracy will result in improvement.

That having been said, it is reasonable to assert that government is shaped by the public will, that bureaucracy is the functional arm of government and, therefore, that government bureaucracy may be responsive to public pressure in some instances or over time. The Department of Defense answers not to the American public, only to the Commander in Chief; but it would be wrong to assert the public will played no part in the American exit from the Viet Nam conflict. The public will does effect change in bureaucratic decision making.

THE POWER OF CROWDS

It is not easy to say as yet what will one day be evolved from this necessarily somewhat chaotic period. What will be the fundamental ideas on which the societies that are to succeed our own will be built up? We do not at present know. Still it is already clear that on whatever lines the societies of the future are organized, they will have to count with a new power, with the last surviving sovereign force of modern times, the power of crowds. On the ruins of so many ideas formerly considered beyond discussion, and to-day decayed or decaying, of so many sources of authority that successive revolutions have destroyed, this power, which alone has arisen in their stead, seems soon destined to absorb the others. While all our ancient beliefs are tottering and disappearing, while the old pillars of society are giving way one by one, the power of the crowd is the only force that nothing menaces, and of which the prestige is continually on the increase. The age we are about to enter will in truth be the **ERA OF CROWDS**.

Gustave Le Bon, *The Crowd: A Study of the Popular Mind*, 1897.

Gustave Le Bon (1897, 14-15) was of course talking about “the entry of the popular classes into political life.” He could not have foreseen one hundred years later the effects of the Internet on popular discourse, but his observation is as cogent today as it was in 1897.

From Le Bon’s nineteenth-century imperialistic European perspective, crowds were determined to “utterly destroy society” as it existed, were “little adapted to reasoning,” and “quick to act.” To be certain, crowds quickly and radically changed the political landscape at the turn of the twentieth century, toppling numerous sovereigns, resulting in previously-unknown polities of various form around the world. It is to be expected that, from the perspective of even the informed observer during that period, change from the existing order would be viewed as “destructive,” “chaotic,” and “little adapted to reasoning.” But change from the old guard often comes only through upheaval; such is social transformation – by and large.

In 1991, Linus Torvalds decided to share some code he had written for an operating system to see if he could get some feedback and help from others. This is the text of the original email:

Message-ID: 1991Aug25.205708.9541@klaava.helsinki.fi
 From: torvalds@klaava.helsinki.fi (Linus Benedict Torvalds)
 To: Newsgroups: comp.os.inix
 Subject: What would you like to see most in minix?
 Summary: Small poll for my new operating system

Hello everybody out there using minix-I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since April, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat

Any suggestions are welcome, but I won't promise I'll implement them
 Linus

From this humble email sent to a cluster of about one hundred computer enthusiasts came the collaboratively designed operating system we now know as Linux. As of 2003, Linux had about 24% of the operating system market share for servers and had been adopted by such organizations as “Boeing, Disney, NASA, the NASDAQ stock exchange, the tax authority in the US (IRS), and universities” (Gummesson, 2006, 89-90). It is natural that one of the earliest collaborative products to emerge from interactive communications technology would be a computer operating system. The cornerstone for the collaborative foundation must be laid before the rest of the collaborative house can be built. Brick-by-brick, an open-source collaborative universe is emerging.

Today, the idea that there is wisdom inherent to crowds is gaining momentum. There is a basic notion that with sufficient numbers of contributors, reasonable solutions to many problems will emerge simply through discourse. If responses are plotted, the reasonable solution lies somewhere near the center of the scatter plot. There are many websites that attempt to harness the “wisdom of crowds” through “crowdsourcing” or “mass collaboration.” Web sites like Fluther, Aardvark, Quora, ChaCha, SircleIt, Hunch, and PeerPong harness “social search” engines – that is, individuals can make queries and contributors provide responses or possible solutions to the queries (Bachman, 2010). It is important to remember all of these collaboration schemes have their limitations. It should be

fairly obvious that erroneous information can be provided in these settings and that individual concerns, even important concerns, can get lost in the shuffle (Figure 2).



(Source: Munroe, <http://xkcd.com/325/>)

Figure 2. Possible limitation of Internet collaboration depicted in popular culture.

Change in business is driven by market forces such as supply and demand, the aggregate influence of buyers and sellers, and the quantity of goods and services offered in a market. Businesses are driven by the profit motive, bureaucracies are not. But when Webeaucracy enters the market space, providing some of the same goods and services as conventional bureaucracy, “price fluctuations” are certain to occur. Government bureaucracy will have four choices where market competition comes head to head: (1) protectionism; (2) increase efficiency in order to compete; (3) wither and die; or (4) nurture collaboration, thus freeing government to concentrate on core competencies. The fourth choice would appear the most satisfactory solution for all concerned.

COLLABORATIVE MARKET FEEDBACK

As a general rule, business is more efficient than government bureaucracy. There are few who would argue against this position. Why is it that bureaucratic organizations should be consistently less efficient than similarly large businesses? While rules, product, and skills

may drive government bureaucracy, there is a fourth, all-important force that drives similarly large organizations in the private sector: profit. Large companies respond to market forces. They respond appropriately or perish. Walmart for example is adopting “green” products, packaging, and technologies to the greatest extent possible. Walmart Chief Executive Officer (CEO) Lee Scott said he wanted to, “turn the world’s largest retailer into the greenest.” At the 2006 store employee meeting, Scott invited former Vice President Al Gore to give a green pep talk to store employees. Gore’s parting thought in his presentation: “There need not be any conflict between the environment and the economy” (Gunther, 2006). While government leaders argue over whether or not arctic ice is melting, the public “gets it.” While zeitgeist does not necessarily mean “correct,” to deviate from the dominant zeitgeist often aggravates the crowd. Public perception moves faster than government bureaucracy can respond, but prudent business leaders, led by the profit motive, respond quickly, often expending much effort in trying to anticipate the crowd’s next move.

There is also risk in allowing your competitors to get there first. The public has the opportunity to shop for services. When the Federal response to Hurricane Katrina fell short, many turned to state, local, and faith-based help. Many received no help from the U.S. Federal Government leading to a tremendous public outcry and backlash, leading the head of the Federal Emergency Management Administration (FEMA) to step down. Similarly, when decision makers do not receive the intelligence product they require from the intelligence community, they will turn to other sources. The public perceived a lack of control at the international border, and “Minute Men” sprang up to fill the void. Certainly, an argument can be made for the benefits of “less government” and that these ad hoc solutions are a natural product of doing the “mostest with the leastest.” It may be possible to provide some effective alternatives in those areas where the public currently has no choice – those sectors in which the government is currently the sole vendor.

THE DIVISION OF BUREAUCRATIC DUTIES

While the profit motive drives companies large and small to tap into their most valuable resource (their customers), government bureaucracies can be made the beneficiaries of similar feedback. FEMA’s response to Katrina has generally been characterized as a failure (see House Report, 2006, “A Failure of Initiative”). The “intelligence failure” in the

lead-up to the events of September 11, 2001 (9/11) is another such event that resulted in agencies receiving direct “market feedback.” These failures have driven change at FEMA, DHS, and in the Intelligence Community (IC). Unfortunately, this sort of market feedback can often be characterized as:

1. Knee jerk – this is the sort of feedback that comes just after an event. Future similar events may benefit, but management by reaction is just that, reactive. Good governance should be proactive.
2. Behind the curve – it often takes time for public sentiment to well up and gain an ear in congress. Congressional committees take time to come to a conclusion, then resultant laws or administrative actions take time to effect change within an organization. Years pass between the event and the corrective action.
3. Misplaced – The standard congressional answer to every problem is to write a law or reorganize. While congressional intervention in, and reorganization of, bureaucracy may lead to some improved product flow, administrative re-shuffling is just that, re-shuffling. Office space gets shuffled, but truly, nothing in the rules of the game have changed.

Going back to Weber’s first characteristic of bureaucracy:

1. There are fixed and official jurisdictional areas, which are generally ordered by rules, that is, by laws or administrative regulations.

Consequently, in order to truly effect change in a bureaucracy, you must change the rules of the game. We live in the age of the internet, email, and personal electronic devices of all sorts. We no longer live in the serial society of the 19th century that led to Weber’s observations on bureaucracy. Merely supplanting one set of rules with another set of similarly prepared rules will not truly result in change. With a reverent nod to the past, it is time to step boldly toward a socio-organizational structure that is responsive not to the challenges of the last failed event, but to the challenges of future events. This then is the goal: to build on the dynamic interplay of rules, product, and skills and subtly re-invent the interplay between government bureaucracy and those served by bureaucracy.

Bureaucratic rules that have served us well for generations have suddenly been made arcane by changes in communications technology. The depth of this notion should not be underestimated. Transformation from dictatorship, monarchy, or theocracy to another form of (popular) government appears to come most often only through upheaval. But what is envisioned here is far more subtle. Webeaucracy is not the sort of “democracy by electricity” that was envisioned by James Russell Lowell (1871) in the aftermath of the American Civil War, nor is it the daily “electrified voting” envisioned by Buckminster Fuller (1963). Rather,

what is envisioned as Webeaucracy is a more restrained shift from classical democracy or representative republic to a more pluralistic Web-enabled public/private collaboration that focuses on product and diminishes the political. Taking an Internet-enabled collaborative approach that focuses on the practical problems around us will hopefully result in much less upheaval than past political approaches to change.

There are obvious functional limitations to divining the correct path through public input, even when it is well-organized public input that moves at the speed of the Internet. These limitations therefore make public input via collaborative Internet utilities more suitable to the “recovery” phase of most nationally-arbitrated events. Public input is inherently reactive, whereas response and leadership are the natural residence of administrative authority. This, then, seems to be the natural division of bureaucratic duties: leadership and response belong to the executive and administrative bodies. Recovery and accountability seem to reside more naturally with the citizenry – and these sorts of tasks are the natural province of Webeaucracy.

The transformation to Webeaucracy is already upon us with only marginal notice; but some in government are responding. In the same year that socialist governments in Eastern Europe fell, college students tested the waters in Tiananmen Square. The Chinese met this opposition with swift and ruthless force resulting in many thousands of deaths. It is then quite surprising that only 21 years later an excellent example of Web-enabled bureaucratic change comes from China.

I HAVE SOMETHING TO SAY

Historically, it was expected that a young man in China would have a home and career before asking for a young lady’s hand in marriage. Today, in many urban cities, moderate to low income workers are unable to afford an apartment. A popular music video by Huang Zheng entitled “Sell,” features people from various walks of life looking at a brochure and asking themselves, “How long would it take me to pay for this house?” Answers range from five days for a rich businessman to 225 years for a cleaning lady (Magistad, 2010). There is a popular website in China which translates roughly to “I have something to say.” The website, responded to the fervor created by “Sell” by conducting a

poll regarding China's housing prices. Respondents from many walks of life indicated it would take between 100 and 500 years to pay for a 1000-square-foot apartment.

“Sell” was made available for online mp3 download at <http://www.chinesesong.org> on June 12th, 2010. Numerous articles about the interplay between both the song and video versions of “Sell” and China's national mood were published between June 30th and July 2nd, 2010 (see China Real Estate News, 2010; Vembu, 2010). The video was reported to have received 1.3 million hits on the internet within a week of release (Key, 2010).

The message behind the lyrics is implicit:

Trying to live like a human being,
I was forced to hollow out my heart,
Feeling their dreams are too far off,
Some people have sold off their wings,
Feeling a pain others can't understand,
I lift my head and stay silent,
Having desires [at all] is so arrogant,
Who would be willing to flaunt them [on top of it]?

I would rather bleed than cry,
I would rather see myself suffer,
Selling out my own dreams, why bother hiding it?
I would rather bleed than cry,
I would rather laugh as I suffer,
Selling out my own beliefs, how ridiculous

I don't care, don't care about all the scars,
Whatever, who cares if I'm changed beyond recognition,

I would rather bleed than cry,
I would rather see myself suffer,
Selling out my own dream, why bother hiding it?
I would rather bleed than cry,
I would rather laugh as I suffer,
Selling out my own beliefs, how ridiculous

Feeling a pain others can't understand,
I lift my head and stay silent,
You have your heaven, and I have my wings.

Online responses to the song were explicit:

“Buying a house... [in the video] they spray blood, [but] I [would] spray brains...”

“We can only kill or be killed, it's better to go out like a hero than to be crushed to death by the system. Remember to choose who you kill wisely, kill [government] officials.”

“Regardless of whatever the officials say, in the eyes of the people, this is a great work of art!”

To suggest that government measures to rein in soaring home prices were made as a direct response to the song or pressure from Internet social sites may be a bit of a stretch. This article was published the same day “Sell” was released for sale on the Internet:

BEIJING, June 12 (Xinhua) -- Measures to rein in China's soaring home prices are beginning to see results, and price declines are expected in later half of the year, say economists and market watchers.

The recent fall in trading volume and slower growth in prices was largely a result of the measures the government had rolled out since April, said Professor Chen Guoqiang, of China's Peking University.

Home prices in 70 large and medium-sized cities rose by 12.4 percent year on year in May, 0.4 percentage points lower than the rise in April, according to the National Bureau of Statistics (NBS).

According to Beijing Municipal Bureau of Statistics (BMBS), only 3,028 second-hand homes were sold through 15 major estate agencies in the city in May, down 64.8 percent year on year and 70.7 percent month on month.

Meanwhile, average prices for second-hand homes stood at 12,661 yuan per square meter, down 2,577 yuan from April, said a report on the BMBS website.

"I can say the rising trend in China's home prices has been curbed initially," said Chen.

A report from Centaline China Property Research revealed second-hand home prices in other major cities also fell. In Shanghai prices dropped by 2.5 percent last month from April and in Guangzhou by 1.5 percent.

The second-hand home market was more sensitive to policy shifts as developers were still cash-rich due to last year's boom, and had little incentive to cut new home prices, said Centaline research manager Qu Anxin.

In a bid to curb soaring prices and prevent an asset bubble, the government tightened scrutiny of developers' financing, curbed loans for third-home purchase, raised minimum mortgage rates and tightened downpayment requirements for second-home purchases.

"People are not expecting these measures to do immediate wonders on the market..., but if policy support continues, a price decline can be expected," said UBS Securities economist Wang Tao.

The downturn would put no short-term pressure on construction, as the government was focusing more on building affordable homes, which would offset a decline in construction of commercial housing, said Wang.

"Construction activities will eventually be influenced by the cooling measures and slow down six months later, while market demand for construction materials will fall at the same time," she said...(China Daily, 2010).

Developers responded to pressures in the market during the same period of time:

BEIJING, July 5 (Xinuanet) - One of China's most controversial property tycoons, Ren Zhiqiang, said developers could reduce home prices on their own to bolster the government's policies. This comes as a change of pace for Ren, who has stated several times that prices would keep going up.

Ren, president of Beijing-based Huayuan Group, told a forum in Boao, Hainan Province over the weekend, "If the developers reduce the prices first, the government would not have to push any new stricter policies," according to the forum's official website.

Ren, whose blog has over 23 million hits, has constantly angered the public with his unsympathetic comments about soaring home prices. "Young people should not be able to afford houses," he once opined.

The central government began releasing policies to keep housing prices from rising at the end of last year. Some departments, including the Ministry of Land and Resources, also expressed their conviction in attacking the pricing problems, saying that they would "not give up half way."

Nie Meisheng, director of the Chamber of Real Estate with the All- China Federation of Industry and Commerce proposed China impose property taxes at the same forum.

The housing prices in China "have already become a political issue", Ren said to web portal Netease during the forum break.

"I am confused about how many and which cities are included in the government's controlling plans, and what will it do in the future. Actually the growth of housing prices has already slowed down, " Ren said.

The growth rate of home prices in May was slower than the previous month, and prices in 70 big-and-medium sized cities may decline slightly in the second half of this year, according to a report by REICO, a real estate research institute.

Ren said on his blog that as the rotating chairman of China Urban Realty Association, which includes several developers like global leader China Vanke, he had suggested its members actively respond to the government's policies... (Hong'e, 2010).

Whether changes in *developer sales policy* were made as a result of pressure from government officials, internet chatter, or the popular song “Sell” is unclear. Whether changes in *government policy* regarding housing prices were the result of collusion with developers, internet chatter, or the popular song “Sell” is unclear. What is clear is that housing prices stabilized after (1) government policy changes were made, and (2) developer sales policy changes were made *and* these changes were concurrent with an upwelling of public dissatisfaction that centered around (1) a popular song and video that were displayed, replicated, and perpetuated via Web 1.0 style technology, and (2) public sentiment was displayed, distilled, and widely distributed via Web 2.0 technology during the same period.

This is an important object lesson in the power of the Internet not simply as a venue, but as an organizational tool for public sentiment and its possible affect on public policy. Public dissatisfaction found a central theme (popular song) and interactive conveyance (internet chat site) to result in social change (public policy and developer sales policy). No march was held, no blood was spilled, civility prevailed; change occurred.

This is not an isolated event. In 2008 China took a step toward greater openness by enacting laws that have allowed local governments more transparency on budgets and expenditures. When an entrepreneur in Shenzhen wanted to know how tax money was being spent, the municipal government granted access to several hundred pages of budget data. In Guangzhou, requests to review the city budget led local officials to post the data online. The site received so many views that it crashed in short order (Asia Now, 2010).

This example of Internet-enabled policy change is all the more powerful given that this occurred in a communist nation where most citizens have limited, or government-controlled, Internet access. Lessons learned from the bureaucracies of the U.S. Department of Agriculture and the Tennessee Valley Authority suggest that socialization of bureaucrats can play an important role in the public/private dynamic. Agencies staffed by people trained to consider the public, or certain relevant portions of the public, as their primary constituents are likely to be deferential to direct pressure and input from those groups (Meier and O’Toole, 2006). Assuming that Chinese bureaucrats have some similarities with the countrymen they serve, it is reasonable to assume that direct pressure will have a similar impact in many non-autocratic bureaucracies.

Collaborative Internet “market forces” similar to those seen in China are occurring elsewhere and politicians are moving to take advantage. Pervez Musharraf stepped down to avoid impeachment in Pakistan in 2008. However, bolstered by support from 295,000 followers on Facebook, Musharraf announced in 2010 that he would be seeking reelection in 2013 (Behal and Luk, 2010). Nigeria’s president Goodluck Jonathan also announced on Facebook his intentions to run for reelection (Stearns, 2010). Elected officials react to changes in the social landscape more quickly than do bureaucracies, but there are indications that even government bureaucrats are taking notice of new avenues of approach.

A LESSON FROM SPACE POLICY

Kathleen M. Connell (2007) is a principal of the Whittaker Group, LLC, and a former Policy Director of the Aerospace States Association. In her essay “Deepening Democracy and Space Policy 2.0,” she points toward three trends that are converging to create a “perfect storm” of public consensus that will result in the tipping point moving toward an increase in civilian controlled space. The structural shifts she sites are: (1) from localized space constituents to global space consumers; (2) the rise of proactive space “hives;” and (3) the crisis factor: from civil space as a luxury, to space assets as a necessity in global-warming mitigation. Structural shift #2 is quoted in its entirety:

Structural shift #2: The rise of proactive citizen space hives

A digital plank has been thrown across the distance that once separated the wiki community from the rocket community.

Kevin Kelly, one of the founders of *Wired* magazine, captured this phenomenon in the notion of “hives”, where independent agents spontaneously form to meet group objectives. Kelly viewed this trend as a neo-biological social and economic development. Both led and leaderless hives of concerned parties are now mobilizing fast to make major impacts on space budgets and provide highly competent input into the space policy process.

Web 2.0 is also dramatically influencing 21st century space policy in a direct manner. IT tools now enable viral marketing, web fundraising, blogging, video posting, advocacy, conferencing, user-created content, instant information, texting, meet-ups, friend sites, community building and much more.

These web-empowered, HTML-fluent agents have been dubbed an “Army of Davids” by leading blogger Glenn Reynolds. That virtual crowds could help make space choices for the nation is still a bit inconceivable to those accustomed to the

institutional Goliath language of space discourse, where senior experts were the only voices heard just a few years ago. What is equally interesting is not only the quantity of space opinion and direct policy action on the web, but the quality of the information publicly available. “Billions and billions” (to borrow a well known quote from Carl Sagan), no longer refers just to the firmament of stars, but to the number of global citizens now space-hip, and online 24/7.

Savvy activists and organizers are using tech tools, and more sophisticated advocacy IT platforms, to create communities that mobilize new publics, interest groups, space “prosumers,” beleaguered space scientists with dwindling budgets, and others space constituents. Several thousand of these interest organizations have been cataloged in informal databases. The list of active space networks represent official organizations, industry lobbies, professional societies, informal societies, bloggers, affinitive networks, state-based organizations, consultants, researchers, and media. What it does not fully capture is a profusion of sub-niche players with enormous reach, or those with a “long tail” of impact.

Added to this is the evolution of gaming and simulation, as Second Life and other virtual environments allow for a simulated high-definition space experience for anyone with an adequate computer system. These tools are both evolvable and, most importantly, free or very low cost. In economic terms, some simulated space expertise is looking less like an elite preoccupation, and more like an information commodity.

In political terms, interested persons can now “opt-in” to the space policy debate, click-and-send opinions and requests to elected officials and the media, and host meet-ups in Congressional offices with their representatives. Many more are choosing to do so in increasing, influential numbers and ad hoc crowds. As theorists and practitioners in space policy and political campaigns know, the impact on official legislation and Administration policy from closed to more open, is already happening (Connell, 2007).

Space hive actors are no longer willing to accept marginal status in decision-making about space exploration and utilization of space assets. This activism is enabled by the Internet. Where the space hives want the nation’s taxpayer-funded space investment to go, and whether it should grow, will become increasingly clear in the next few years. What is clear is that space hives are in the space game to stay.

Let us hope that bureaucrats in both the East and West continue to be responsive to gentle nudging and that these sorts of outcomes become a model for future Internet-enabled policy adjustment. It is important to remember that private input into public mechanizations need not be adversarial. An illustration of possible efficiencies gained from public/private collaboration comes from Ron Lane, the Director of the Office of Emergency Services for

the County of San Diego. During a lecture given at San Diego State University, February 17, 2009, Mr. Lane spoke of his experiences during the devastating fires that destroyed over 1,000 San Diego homes in October of 2007. Mr. Lane spoke of a conversation with Director Paulsen of FEMA. They observed:

1. Public-private partnership is important...FEMA should not be in the trailer business and probably wouldn't be if FEMA had better public-private involvement.
2. Non-profit involvement during the recovery phase is paramount to providing goods and services to those in need.
3. Non-profit involvement frees up government agencies to take care of their core competencies.

Mr. Lane went on to explain that special-needs populations are among the most difficult to deal with during emergency incidents and that by seeking public input, special-needs citizens are more fully incorporated and attended to. He also observed that, like it or not, the Internet has become integral to emergency response. During the October 2007 fires in San Diego, he received questions from the press asking why the information on their website was 15 minutes old! Lane asserts that robust Web management will become increasingly important during incident response in the future; this will become more apparent as the shift is made from Internet as information dissemination tool (Web 1.0) to interactive information management tool (Web 2.0).

CHAPTER 7

WEBEAUCRACY, ARCHITECTURE

This chapter proposes a basic taxonomy for collaborative Internet utilities, provides examples from the Internet of nascent collaborative Internet utilities, and offers predictions for how collaborative Internet utilities will effect sociopolitical change in the future.

The speed of discovery moves only as quickly as our ability to network. Few innovations are created in a vacuum; simultaneous discovery – what some historians call “multiples” – is common. William Ogburn and Dorothy Thomas compiled one of the first lists of multiples in 1922. Ogburn and Thomas felt that the sheer number of multiples could mean only one thing: scientific discoveries must be inevitable. “They must be in the air, products of the intellectual climate of a specific time and place” (Ogburn & Thomas, 1922).

While the veracity of this claim is debatable, there can be little doubt but that discovery builds upon past discovery. The speed with which we learn of a discovery is a function of the communication modalities in place during a given era. Gutenberg sped the process of discovery dramatically with the invention of the printing press around 1440, itself an adaptation of screw-press technology that existed at the time for pressing grapes, olives, cloth, etc. As the cost of the production of books and periodicals decreased with time, the spread of ideas increased at some proportional rate. Radio, television, and now the Internet and associated search engines have each led to exponential increases in the spread of ideas, leading to an increased speed of discovery.

Collaboration architecture should provide the next natural exponential leap in the communications chain that has facilitated past leaps in the speed of discovery. Not simply utilities for meeting people or search engines, rather, collaborative utilities should create an environment that links collaborators working toward common goals; they should be amorphous architectures that feed on the natural vibrations of creative endeavor, molding and changing themselves over time as sentient surfers collaborate at an ever increasing rate, problem solving as they go.

It is important to remember there is a fundamental difference between solving problems through compromise and solving problems through collaboration. Web sites such as wikis that facilitate open collaboration result in transparent communications. Many would assume that open and honest transparent communication is a positive attribute. However, critics might observe that when it comes to negotiation and compromise, 100% transparent communication is not always conducive to diplomacy and that private side-bar discussions are sometimes necessary. As an example, assume a group of federal employees in the field have requested a widget, and the technology officer who provides them services is not forthcoming with the desired widget. The requesting agents can take several approaches toward resolving the issue. Bluntly going to the technology officer's supervisor may result in fielding of the desired widget, but this approach will also result in animosity and a repeat of the current reluctance to provide services. If, on the other hand, one of the requesting agents happens to know the technology officer's supervisor, an informal inquiry can be made such as, "Do you want us to have these widgets? If so, let me know and I will make a casual inquiry regarding status with you 'cc'd' and you can add your input if necessary." This form of back-door communication can solve problems without putting too much pressure on a non-performer.

There is no mechanism for back-door diplomacy in many collaboration website architectures. Some might argue that this is a shortcoming of collaboration sites. However, by virtue of a flattened communication space with no hierarchy, the need for behind-the-scenes diplomacy diminishes. Collaborators may engage or disengage at-will, and the project moves forward despite non-performers. Transparent communications in collaborative site architecture squashes hierarchy, reducing the need for this sort of diplomacy.

One movement that espouses this quality is the "Tea Party." The political movement conducts much business via Internet social sites and has been proclaimed a "starfish organization" (NPR, 2010) by Rod Beckstrom, author of "The Starfish and the Spider" (Brafman and Beckstrom, 2006). While there is strength in the decentralized structure, certain weaknesses will also become apparent over time. The same moral imperative that leads many to become members of the movement will also lead to periodic fractionalization. Former President Jimmy Carter is a good example of a politician motivated by the moral imperative. His desire to implement idyllic reforms, while possibly in the long-term best

interest of the country, led to alienation from Congress and eventually the voting public. His inability to appreciate the value of the social contract, and the assumption that compromise was a virtue subservient to principles, led to a single-term presidency. Similar friction between the social contract and moral imperative within the Tea Party may result in the self-limiting tendency of fractionalization. The party will most likely not supplant one of the existing major parties in the U.S. That having been said, there is no reason the Tea Party will not be an effective agent for change. Much of party planning, ideology, and direction will come from collaboration via the Internet.

There are lessons from the Internet that may point the way toward what can be achieved through collaboration sites. Rather than formulate a list of what basic features and architecture these sites should display, one should appreciate that initial features may be less important than simply establishing the proper set of rules. Harkening back to the holy bureaucratic trinity – rules, product, skills – simply setting the proper rules and encouraging contributors to grow the architecture over time may result in the best fit organic to the task and skill set of the collaborators. The purpose of a collaboration site after all is collaboration; duties may as well include the creation and maintenance of the site.

We turn now to examples of existing collaborative sites and what they have accomplished. Bureaucratic decision makers often nurture relationships with legislators and lobbyists in an effort to smooth out potential disruptions in the administration of their particular agencies. The Internet could act as the great energizer: one click, one input into the bureaucratic process. When Webeaucracy blooms, lobbyists and legislators will not be able to offset the millions of individual clicks that give shape to public empowerment via collaborative utilities.

WHAT WOULD GOOGLE DO?

In his book, *What Would Google Do?*, Jeff Jarvis attempts to reverse-engineer the fastest growing company in the history of the world. On NPR (National Public Radio), March 1, 2009, Jarvis said “Google always releases a ‘Beta’ version.” They are saying to the public, this isn’t done, we have problems with it, help us fix it. This creates community buy-in. Problems unforeseen by staff can be revealed and corrected by contributors in the community. This leads to a superior product with help from free labor. Auto manufacturers

do everything in secret. Imagine the power of this kind of community input being unleashed on the auto industry. Because auto manufacturers create new products in secret, they do not benefit directly from customer collaborative design. While auto manufacturers may gain customer input through owner feedback, “idea cars,” and focus groups, there is a time lag from the time this input is given until it is incorporated into a new product. Further, because the public is not incorporated in the design phase, opportunities for innovation are missed. Google is the fastest growing company in history not because it creates in shadow shrouded in mystery. Rather, it presents new ideas to the public early and often and invites the public to collaborate toward providing a solution.

It is important to fully appreciate and differentiate between what Google has achieved and what Google is as an entity. Google does not exist as some utopian dream of one company for all, benefitting all of mankind. Quite the opposite; they are a for-profit company and profit is their driving motive. Inspired by Warren Buffet, Google founders never intended to allow the public to control the company. In the initial public offering (IPO) “Letter from the Founders,” Larry Page wrote:

The main effect of this structure is likely to leave our team, especially Sergey and me, with increasingly significant control over the company's decisions and fate, as Google shares change hands. After the IPO, Sergey, Eric and I will control 37.6% of the voting power of Google, and the executive management team and directors as a group will control 61.4% of the voting power. New investors will fully share in Google's long term economic future but will have little ability to influence its strategic decisions through their voting rights.

While Google the corporation is obviously a classic hierarchical organization, Google the actor-network has effectively harnessed the spirit of collaborative enterprise.

Google builds it, and they come. For example, Google presumably spent millions of dollars developing “SketchUp” software, then literally gave it away on the Internet. This was puzzling to those who think in terms of classical supply-and-demand business models. What many did not appreciate is the collaborative nature of the Internet. Many millions of people have since used SketchUp to create three dimensional (3D) images of buildings that have been inserted into Google Earth. As a result, the entire globe has quickly been populated with 3D renditions of entire cities. These 3D buildings have been provided by an army of free help. This work represents many millions of man hours that Google could not have paid for in a traditional fee-for-labor model. This is quickly becoming the standard platform for

many business and governmental uses. Google will presumably recoup their costs through professional versions of the SketchUp software and by providing additional services to enterprise users. This represents the creation of an entirely new 3D mapping utility (product) built using free software (rules) supplied to an army of (skilled) collaborators, for the cost of software development.

This is not what we think of when we conjure a mental image of bureaucracy, but it is a future piece of bureaucracy. Just as cell phones and the Internet itself have become critical infrastructure and are indispensable to our daily lives, so too will the products of collaborative Internet utilities become critical infrastructure. Much of this infrastructure will reside on servers controlled by nameless, faceless collaborators.

PROPOSED COLLABORATIVE UTILITY TAXONOMY

Lacking an established classification system for collaborative Internet utilities, we may distinguish three forms:

1. Collaborative Internet sites that go straight to the heart of the matter, providing some product or solution directly to those who need it without attempting to change existing bureaucracy. Google Earth and SketchUp are basic collaborative utilities.
2. Collaborate sites that work toward government oversight or in some way attempt to directly effect change in governmental organizations. “Space Hives” are an example of websites interested in direct government involvement.
3. Websites that inadvertently affect political discourse leading to change in government bureaucracy, typically so-called social networking sites. “I have something to say” typifies incidental sociopolitical involvement.

More briefly, collaborative Internet utilities may be classified as:

1. Infrastructure or basic product
2. Policy or government change
3. Incidental social sites

Websites that fit the description collaborative Internet utility and which contribute to Webeaocracy can be designed and administered by government or private entities. Those run by the government generally fit the first form (the government is not generally in the business of self-scrutiny or running social sites).

While sites may at times be one or a combination of all three forms, those which concentrate on simply providing a service or product may be seen as the more pure form; it is this form, devoid of politics and concerned only with providing infrastructure or a basic

product that is the purest form of Webeaucracy. Those collaborative sites directly involved in political discourse may suffer by getting mired down in political muck. Those sites which incidentally effect political change may avoid problems inherent to the first two forms. What is certain is there is room for all three approaches to collaboration on the Internet.

The website Ushahidi appears to be doing an admirable job of riding the fence between the first two forms:

USHAHIDI

Ushahidi (<http://www.usahidi.com/>) is an open source mapping utility. From the website:

Ushahidi, which means "testimony" in Swahili, is a website that was initially developed to map reports of violence in Kenya after the post-election fallout at the beginning of 2008. Ushahidi's roots are in the collaboration of Kenyan citizen journalists during a time of crisis. The website was used to map incidents of violence and peace efforts throughout the country based on reports submitted via the web and mobile phone. This initial deployment of Ushahidi had 45,000 users in Kenya, and was the catalyst for us realizing there was a need for a platform based on it, which could be use by others around the world.

As early as May of 2008, we shared our code with a group in South Africa that used it to map incidents of xenophobic violence. This rudimentary deployment made us realize the need to rebuild the framework from the ground up. By August seed funding from Humanity United in the amount of \$200,000 allowed the team to get started rebuilding the platform. In October the alpha version of Ushahidi was completed and promptly deployed to the DR Congo for testing. In its alpha form, Ushahidi was tested and deployed with 11 different organizations directly, including the International Center for Transitional Justice (ICTJ), Peace Heroes and the Kenyan National Commission on Human Rights. Externally, there were 4 major alpha deployments, including Al Jazeera during the War on Gaza, Vote Report India (to monitor the recent local elections) and Pak Voices (to map incidents of violence in Pakistan).

Our goal is to create a platform that any person or organization can use to set up their own way to collect and visualize information. The core platform will allow for plug-in and extensions so that it can be customized for different locales and needs. The beta version platform is now available as an open source application that others can download for free, implement and use to bring awareness to crisis situations or other events in their own locales, it is also continually being improved [and] tested with various partners primarily in Kenya. Organizations can also use the tool for internal monitoring or visualization purposes.

We are now focusing on scaling the organization in order to make the tool as widely accessible as possible, to increase the platform's user-friendliness, and to help support the community that has grown around Ushahidi.

Ushahidi projects include (quoted from the website):

- Sudan Vote Monitor is a Sudanese civil society initiative that used SMS to monitor the elections in the Sudan.
- Chile Crisis Map is tracking the post-earthquake crisis response and recovery efforts in Chile.
- Open Forests Italiane is a project that is designed for information and knowledge sharing among the public and several institutional and volunteering organizations involved in risk prevention and management activities surrounding forest fires.
- Snowmageddon: The Cleanup - Where the Washington region comes together to dig out of Snowmageddon 2010.
- Haiti Crisis Map is tracking the post-earthquake crisis response and recovery efforts in Haiti.
- Wildlife Trackers is a citizen science project to track wildlife in Kenya.
- Connection GeoMap, managed by Survivors Connect seeks to create a space to share critical information about trafficking and anti-trafficking activity globally, promote transparency in our efforts, engage communities and learn best practices, current challenges and needs in our global effort.
- Atlanta Crime Maps tracks crime in the Atlanta metro area.
- Stop Stockouts is an initiative to track near real-time stockouts of medical supplies at pharmacies (in a medical store or health facility) in Kenya, Uganda, Malawi and Zambia.
- The Computer Professionals' Union in the Philippines created the initiative called TXTpower, an effort to keep an eye on the mobile phone companies by ordinary citizens.
- The Cuidemos el Voto mashup is an independent platform to help monitor the federal elections of 5 July 2009 in Mexico.
- We set up a site to track the Swine Flu reports coming in from official and unofficial sources at Swineflu.Ushahidi.com. We have also created a way for citizen reports to be submitted (they remain unverified).
- Vote Report India is a collaborative citizen-driven election monitoring platform for the 2009 Indian general elections.
- Al Jazeera uses Ushahidi in their "War on Gaza" website covering the activity happening in Gaza in January 2009.
- Peace Heroes: Unsung Peace Heroes is a campaign developed by Butterfly Works and Media Focus on Africa Foundation. The goal is to nominate people who helped do positive things during and after the post-election violence in Kenya. Kenyan heroes are ordinary people who did extraordinary things for their fellow citizens or their country.
- Congo (DRC): Deployment to the DRC Congo happened on Nov 7, 2008 - the week after our initial release of the alpha version of the new Ushahidi Platform.

- Kenya: The initial mashup, used to track reports of incidents of violence around Kenya.
- South Africa: Used to map xenophobic attacks perpetrated against non-South Africans.

HAITIAN EARTHQUAKE 2010

The earthquake in Haiti turned out to be the seminal event for the intersection of collaborative technology and boots on the ground relief efforts. Technology “camps” such as Transparency Camp, Government 2.0 Camp, and Random Hacks of Kindness, were marathon events designed to allow programmers to “hack for humanity” and preceded the devastating earthquake. These camps resulted in tangible products that directly affected crisis response in Haiti. One product was a routing protocol that enabled point-to-point wireless communications between camps in Haiti where long ping times occurred because of multi-kilometer WiFi tower distances (Zuckerman, 2010). Another impressive collaboration to emerge from these camps was OpenStreetMap which uses satellite imagery released by the UN (United Nations) to create highly detailed maps. These maps leverage the work of “boots on the ground” who trace roads with GPS equipment, tagging locations as they proceed. The result was a highly-detailed map that allowed relief workers to route materials, equipment, and food from half a continent away.

Not everything that comes from these collaborative efforts is peaches and cream. Volunteers tend to “burn out” after weeks on a project, the technically inclined do not pay much attention to usability for the rest of the population, and projects can become disconnected from needs on the ground. That being said, much good has come from these efforts. Sites associated with these efforts are forming rudimentary collaborative bureaucratic web utilities of the first form (infrastructure or basic product).

CRISISCOMMONS

One of the rudimentary functions missing from many grass-roots collaborative efforts is standards: standards for performance measurement and project success; standards for code; and standards for project updates and documentation. Because of their desire to be a leading volunteer organization, Crisis Commons (<http://crisiscommons.org/>) may emerge as a benchmark for standards in the emerging area of collaborative crisis response.

From the website:

CrisisCommons is a global network of volunteers who help people in times and places of crisis. If you can use the Internet, a word processor, a cell phone or any other kind of technology, you can help, right now virtually online or during one of our many CrisisCamps around the world!

Our Vision – CrisisCommons creates and sustains a culture of information sharing, improving emergency management and humanitarian activities.

Our Mission – To become the leading volunteer organization developing shared technological solutions, enabling information sharing in all phases of emergencies with the desire to alleviate suffering and loss of life.

History of CrisisCommons – Founded in March 2009 at Government 2.0 Camp, CrisisCommons was formed out of a discussion about the idea of creating a common community of citizen volunteers, crisis response organizations, international humanitarian relief agencies, non-profits and the private sector. CrisisCommons and our CrisisCamp events were created to unite communities, seek common ground and cultivate innovation in the use of technology for mobility and efficiency during crisis.

Our Projects – Through our numerous camps and meetings we have had many successful projects. You can read more by visiting our collaboration site that we are currently building out to enable better collaboration both within the CrisisCommons community and with new volunteers and the public.

Collaboration sites are not the sole domain of private hackers and computer nerds. Some in government do “get it.” A number of government-run collaborative utilities have been successfully implemented. Peer-to-Patent was among the first; the pace of proposal and implementation is increasing.

PEER-TO-PATENT

Beth Noveck taught “Introduction to Intellectual Law” at New York Law School. She realized that the 5,500 patent examiners at the United States Patent and Trademark Office (USPTO) lacked expertise specific to the inventions they were issuing patents for and lacked sufficient resources to research all pertinent past art in a timely manner. In July of 2005 she proposed an Internet utility, Peer-To-Patent (<http://www.peertopatent.org/>), whereby self-selected experts could provide research and direct input into the patent process. The idea quickly gained momentum, and the USPTO was onboard by the end of 2006 (Noveck, 2009).

From the website:

Peer-to-Patent opens the patent examination process to public participation for the first time. Become part of this historic program. Help the USPTO find the information relevant to assessing the claims of pending patent applications. Become a community reviewer and improve the quality of patents.

Peer-to-Patent invites the public to share information, knowledge, and expertise with patent examiners about the patent applications that are participating in the pilot. Nearly 6,000 patent examiners for the USPTO labor independently under a backlog approaching 1.2 million applications with 64% of those awaiting first office action. They typically spend no more than 18-20 hours to review each one. Peer-to-Patent allows you to contribute prior art that will be included in the review by the examiners.

Step 1: Review and Discuss Patent Applications.

Step 2: Research and find Prior Art.

Step 3: Upload Prior art relevant to Claims.

Step 4: Annotate and evaluate all submitted Prior Art.

Step 5: Prior Art references forwarded to USPTO

After the review period, which typically lasts 90 days, the top ten prior art references are forwarded to the USPTO. When the patent examiner reviews the application the prior art provided by the Peer to Patent community will be included in the scope of the review. Applications that participate in Peer to Patent are moved to the head of the queue for examination and first office action, typically reducing the time to a first office action by as much as a year. Once the information is sent to the USPTO, the application will be moved from the active list to the archived list. You can still see all of the information on archived applications, you just cannot update it.

Some fear Peer-To-Patent will pave the way for those with no “skin in the game” to bog down the review process or create problems for companies they are apposed to; think Green Peace on the Internet (private communication with patent attorney). However, the project has been a success story thus far. There are now pilot programs in Australia and Japan. A recent addition to government-spawned collaboration sites is the Environmental Protection Agency’s (EPA) “iemHUB.”

iemHUB

The EPA’s Integrated Environmental Modeling website, iemHUB (<http://iemhub.org/>), is a “community center” for developing and sharing knowledge and tools for environmental analysis.

From the website:

The iemHUB is an online community resource that supports the development, evaluation, and application of environmental models. As a consequence of the

interdisciplinary nature of environmental modeling, the iemHUB is designed to facilitate knowledge sharing, discussion and collaboration on models and tools that support multimedia and multidisciplinary analysis. The iemHUB provides a unique environment for model access, simulation, and teaching and learning about environmental modeling.

The iemHUB is the state of the art web-based platform for the Community of Practice for Integrated Environmental Modeling (CIEM). The mission of the CIEM is to stimulate interactions among its members to foster learning and knowledge sharing and spark innovation in the field of integrated environmental modeling. The CIEM serves as an umbrella community that facilitates collaboration across domain-specific communities (e.g. hydrologic modeling, air quality modeling, ecosystem modeling, etc.) and promotes integrated modeling as a means of achieving better management decisions, so that resources are more sustainably exploited and impacts are better understood. Convergence toward a community approach to integrated environmental modeling has led the US EPA to catalyze and support the development of a Community of Practice for Integrated Environmental Modeling (CIEM). Other groups that are also participating in this effort include the International Environmental Modelling [sic] and Software Society (iEMSs), the OpenMI Association, the Interagency Steering Committee on Multimedia Environmental Modeling (ISCMEM), the Open Geospatial Consortium and the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI).

The EPA also has a collaborative site called “Watershed Central Wiki”

(http://wiki.epa.gov/watershed2/index.php/Main_Page). This is a watershed management resource where participants can share best practices, case studies, and lessons learned.

Unlike a simple message board, contributors may edit one another’s work resolving content as best-fit solutions. The underlying site architecture is open source software made available by MediaWiki, the same software used by the yadabyte.org practical exercise in the next chapter.

INRELIEF.ORG

InRelief.org (<http://www.inrelief.org/>) is a joint U.S. Navy-San Diego State University collaboration site dedicated to increasing the speed with which disaster relief reaches those in need.

From the website:

InRelief.org’s mission is to increase the velocity of the response during Humanitarian Assistance and Disaster Relief (HADR) events by connecting military/civilian organizations, disseminating data freely over the internet, and providing the collaborative tools to expedite the sharing of critical information.

Connecting Organizations – By utilizing technical and social networks, we connect organizations before, during, and after catastrophic events.

Disseminating Data – We aggregate data from the State Department and other agencies, United Nations (UN) and member organizations, Department of Defense (DoD), and Non-Government Organizations (NGO) to present vital information via innovative Web services.

Collaborative Tools – We facilitate the coordination and sharing of information critical to accomplishing missions through customized and collaborative cloud-computing solutions.

Geospatial Imaging – We facilitate the gathering of imagery and Geographic Information System (GIS) data via high-bandwidth connections, processing information into multiple formats and delivering output via web services, including low-bandwidth delivery into disaster areas.

InRelief is a US Navy effort that is managed by San Diego State University (Registered NGO) to promote better interactions and results when disasters strike. InRelief is based primarily on Google technologies. However, we at InRelief want to provide the best environments to share information, so please do not hesitate to make recommendations regarding a variety of technologies or processes. We humbly ask you to try InRelief; it is a safe, free, and secure environment to collaborate with all. Licenses are not required to view information, however, if you would like a license for the site so you may build your own site within InRelief, just ask. The managers of InRelief only need proof that you are a member of an NGO, IO, government agency or military (foreign or domestic). You do not have to work with organizations within InRelief, only ensure that appropriate data your organization wishes to share is publically available. InRelief is a wholly owned enterprise that is managed by San Diego State University. Google does not monitor nor does it have administrative access to InRelief.org.

COLLABORATIVE SITES SUMMARY

The essential elements for successful collaborative Internet utilities appear to be the same rules that govern bureaucracy – again, the holy bureaucratic trinity: establish a clear set of rules thus establishing mechanical limitations on the collaborative community; clearly define the intended product; and attract those with the appropriate skill set for the task at hand. The clear departure from traditional government bureaucracy is collaboration for collaboration’s sake; none of the forgoing examples from the internet create hierarchy, authority, or power. A simple “thank you” in the form of an acknowledgment or citation is generally accepted as sufficient recognition.

Another key to collaborative utilities is building the sense of community. Establishing rules provides a part of the necessary structure, but providing a mechanism for visualization of the problem, product, and process is also fundamentally important. “Reflecting the work of the group back on itself” helps collaborators track progress, visualize the task at hand, and establish a sense of community (Noveck, 2009). Certain limitations present themselves in a virtual format; email for example, is notoriously devoid of the feeling and intent conveyed in a face-to-face exchange of ideas. However, there are benefits that arise from the collaborative media: devoid of the temporal and physical restraints of a live meeting, contributors may be freer to exchange ideas, build understanding, and drop prejudices, thus, greater creativity can result from an online community (Bender, 1995).

Characteristics of virtual communities that seem to be emerging are that many are social in nature, they are not directed toward democratic debate, and they do not stimulate citizen participation in government decision-making processes (Maciel, Roque, and Garcia, 2010). This appears to coincide with practical real community experience. From Maslow’s perspective, it could be argued simply that “love and belongingness” needs are being expressed and that politics does not enter into consciousness until something is perceived as being amiss. While it may be in the best interest of certain groups to find a format that fosters political participation, the obvious path of least resistance is to avoid the issue altogether. By building collaborative utilities of the first form (pure product), politics can be avoided and participants can focus on the task at hand: collaborating toward providing some basic function or product.

Some obvious questions arise from the forgoing discussion of possible collaborative Internet utility forms and examination of existing collaborative websites: How will they interact with existing government bureaucracy? Sites like InRelief and iemHUB are just the tip of the public/private collaborative iceberg; deeper penetration into traditional governmental bureaucracy should be expected. What will government bureaucracy look like after the infiltration of Webeaucracy? This question is more difficult to answer, but the governmental bureaucratic edifice will be smaller and more efficient, or at least that is the desired outcome. Only time will tell.

As asserted in Chapter 4 of this paper, the spread of sociopolitical thought seems to correlate strongly with advances in communications technology. Communications

technologies act on society as more than simply a mirror, but are less than prime motivator. Suffice to say, it seems reasonable that by observing emerging trends in the interplay between interactive communications technology and society we may gain some insight into future governmental morphology.

PREDICTIONS

From the lens of the future looking back, many predictions appear quaint at minimum and downright silly much of the time; the waste bins of time are littered with peer-reviewed papers making fantastic predictions of future wonders. The general public considers the weather man intractably inaccurate; the pilot looks to the weather man with confidence. What is fuzzy at a week distant is reasonably certain only a few hours into the future. With that perspective, I hazard a very few predictions into the not too distant future.

Globalization is one obvious characteristic of the 21st century; globalization has been a byproduct, in part, of the Internet. Just as nomadic tribes were squeezed-out by an increase in European population during the Middle Ages, so too are populations being squeezed out in the emerging global economy. The same technologies that offer an opportunity for collaboration and societal homogenization also provide a venue for the resultant diasporas to find community on the Internet and to create an unrealistically large footprint relative to their percentage of the total population. At the same time that China is normalizing relations with the west, and Iran is moving slowly back toward liberalization not seen since the Shah was in power, and the European Union is solidifying, so too are terrorist groups that represent an incredibly small percentage of the population using mass media to greatly increase their potential world influence (see Nacos, 2007).

In broad brush strokes, the world will continue to grow smaller and outliers will seek to continue to use mass media to their advantage. Because of the archival qualities of the Internet, government leaders will become hyper-sensitive to what would have been disregarded in previous centuries as the desperate acts of splinter groups. As an example, one preacher in Florida with a congregation of 50 who simply threatened to burn a Quran on the ninth anniversary of 9/11 received worldwide attention and comments from President Obama and other high-ranking U.S. government officials (Healy and Erlanger, 2010) despite never actually performing the act. The images that would have resulted from such an act

would have survived on the Internet indefinitely and been used to recruit Al Qaeda members for decades to come. Geophysical or political diaspora gains leverage in the Internet for those with little to lose in the real world. This is an excellent example of the amplifying potential of the Internet, a quality that should be regarded with care by those who intend to develop social collaboration sites.

It is easy when enamored with an idea to sing its praises while bestowing supernatural powers on the new construct. By no means are collaborative Internet utilities presented here as the solution for utopian bliss or as some refashioned Reformation concept of the ideal society; far from it. Humans are still humans and the collaborative Internet revolution has the same seeds of miscarriage that have historically attended other innovations in communications technology that have shown promise for increased democratization of society (see Carey and Quirk, 1973, 497-502). Collaborative Internet sites and their associated communities are not going to cure cancer, or find a replacement for fossil fuels, or end illiteracy...but then again, why not? Or to frame the question more poignantly, if we do not solve these problems through the use of collaborative Internet utilities, despite all that has been accomplished, we as a species will not have evolved socially beyond that which was possible when language first came into being.

CHAPTER 8

COLLABORATION PRACTICAL EXERCISE

This chapter presents practical lessons learned from the implementation of a collaborative Internet utility, Yadabyte.org.

YADABYTE.ORG

It is possible to discuss water, list the properties of water, decompose and recombine water, but until wetted, never appreciate the full experience that *is* water. There is much to be learned from practical experience.

Yadabyte.org (<http://yadabyte.org>) was selected as the name for a practical collaboration website exercise first and foremost because it was available. Yadabyte is a double-double entendre. First yada, as in to speak endlessly or as an interjection, “yada yada;” and as in yotta, the largest unit prefix on the International System of Units (SI) scale, denoting one septillion or 10^{24} . Secondly, byte, as in a unit of digital information used in computing or telecommunications composed of orderly bits configured in such a manner as to carry information or transport a message; and as in bite, to bite off and chew, to ruminate, to break down the whole into bite-sized pieces small enough for an individual to digest.

Rules: yadabyte.org has as its basic premise that any bureaucratic function can be deconstructed by the community and collaborative creativity brought to bear where necessary to effect change. As an example, assume someone has completed a program of study for licensure as a nursing assistant. The state board exam has been completed and necessary paperwork submitted some months prior. Contact with the state licensing board reveals that the typical wait for a license is four to six months because of a shortage of staff. The typical assertion in this case might be that the state simply needs to hire more staff in order to process the backlog of paperwork. This solution, however, leads to larger government and more taxes spent. Additionally, this sort of solution may not be available for many budget-constrained states. Rather, why not provide a brief statement of the problem, and then allow others to add changes to the statement of the issue and provide possible solutions? With enough people chipping away at the problem, a novel solution set may emerge such that

traditional government bureaucracy is diminished and a more efficient mechanism or procedure emerges through public/private collaboration.

David Bohm received his Ph.D. in physics at U.C. Berkley under Robert Oppenheimer. He was also an associate professor at Princeton, where he worked closely with Albert Einstein. Bohm spent much of his later years investigating “thought,” producing the seminal work, “Thought as a System.” To address societal problems, Bohm envisioned many groups engaged in “Bohm Dialog” in which equality and “free space” promotes communication:

...it is proposed that a form of free dialogue may well be one of the most effective ways of investigating the crisis which faces society, and indeed the whole of human nature and consciousness today. Moreover, it may turn out that such a form of free exchange of ideas and information is of fundamental relevance for transforming culture and freeing it of destructive misinformation, so that creativity can be liberated (Bohm, 2010).

The rules of engagement on yadabyte.org are based loosely on Bohm dialog. From the yadabyte.org website:

- Contributors agree that no group-level decisions will be made in articles – it is crucial to the process of collaboration in social improvement that no single solution be agreed to. There is no one-size-fits-all solution to most social problems, and there is no final end state, merely ever-changing social mechanisms and processes to meet the needs of a given population at a given time and place.
- Each individual agrees to suspend judgment in article contributions – never attack someone else or their ideas.
- As individuals suspend judgment, they also simultaneously are as honest and transparent as possible – don’t hold back because you think your idea is impractical.
- Individuals try to build on the contributions of others – the group often comes up with ideas that are far beyond what any of the individuals thought possible before the project began.
- No Politics – No substantial part of the activities of yadabyte.org shall be the carrying on of propaganda or otherwise attempting to influence legislators, and the organization shall not participate in, or intervene in (including the publishing or distribution of statements), any political campaign on behalf of or in opposition to any candidate for political office.

It is not the intent of yadabyte.org to directly confront politics or politicians. The principal intent is simply to bring about change apolitically; to find solutions to social problems at the operational level, and implement them without expecting the state, or governmental functionaries, or politicians to intervene.

Unfortunately for David Bohm, as a product of the World War II era, his ideas emerged as or were perceived of as socialist. While he was acquitted of accusations made by the McCarthy hearings, many of his ideas suffer from this stigma. Today, collaborative Internet utilities may provide the perfect apolitical platform for what he envisioned as the “free exchange of ideas and information...for transforming culture and freeing it of destructive misinformation, so that creativity can be liberated.”

Product: yadabyte.org is a wiki. It is simply a space where contributors may describe and fully flesh out issues that exist in the environment around them then invite others to collaborate toward solutions. Two tabs exist at the top of each “project page.” Under “page,” a formal presentation of the problem and possible solutions forms the starting point or presentation of the issue, and a second tab, “discussion” allows informal dialog, leading to collaboration and consensus.

Skills: it is envisioned that contributors, presumably from a broad cross section of netizens, provide the skills necessary for the full spectrum of site needs from site content to management and administration, code writing, and defense against attacks emanating from the Web. It is essential to build a cadre of trusted administrators from the outset for such a site to be successful.

Site construction was fairly straightforward. The domain name was selected and purchased, and a server account established with a reputable host. Once the domain and hosting account were established, the current version of MediaWiki was downloaded onto the newly established site from the MediaWiki main page (<http://www.mediawiki.org/wiki/MediaWiki>). Tutorials and code for altering the wiki were readily available. This was a fairly painless process, even for a novice. Selecting a host with robust telephonic support was instrumental to successful initiation of the site.

CYBER ATTACKS

As of this writing in August of 2010, over forty social networking sites have more than ten million registered users, and six boast more than one hundred million users. While not all of these are active users, several of these sites have sufficient membership to have achieved some degree of financial success. With success comes vulnerability. Users of these sites are notoriously the victims of malware, phishing, clickjacking (e.g. a fake error message

designed to fool people into clicking a hidden button concealed beneath), worm floods, and various other ploys to extract information from users, hijack server space, or otherwise cause general mischief (see Sophos, 2010).

Many of the sites that are plagued with these attacks may be smaller and not as well maintained as global giants. As a result, vulnerability patching and provisioning adequate security controls may become an excessive burden to administrators. Indeed, the proof of concept site for this writing, <http://yadabyte.org>, was the victim of numerous attacks between June and August of 2010. Wikis, built specifically to provide free-flowing contribution space, are especially juicy targets for those who wish to increase Web presence through creating links. Typically, depending on site level settings, anyone can edit an entry or create a new page on a wiki without creating a log-in name. Initially, yadabyte.org received an entry from someone creating a link to a site about a football match result in Italy. This seemingly innocuous addition to the site was followed a few weeks later by a link to a prescription drug site; a few weeks later, gibberish was placed on the site from an anonymous URL (Uniform Resource Locator) in Jakarta. As one anonymous URL after another was blocked, the attacks grew increasingly problematic and time-consuming.

Blocking a URL from making edits on a site is a problematic solution. An IP (Internet Protocol) is used for communicating data across a packet-switched Internet network. Internet Protocol Version 4 (IPv4), still widely used, has four “levels” (separated by a decimal point), and each level is an integer from 0-255. This results in nearly 4.3 billion possible addresses. Because of the proliferation of Internet-enabled devices, this is a number that is already inadequate. An IPv4 example is 173.201.93.128, the address for a Go Daddy server. Because this is a server, the address remains constant. Those devices which are simply served by a server, usually an ISP (Internet Service Provider), are most often assigned a URL at log-on. As a result, each time an individual conducting a malicious campaign signs in, they are assigned a new URL by the ISP. Defending yadabyte.org by blocking URL’s was all but ineffective. All the malicious person had to do was log out, log back in, and they had a new URL and could go on about their business placing links to pornographic sites on the wiki.

The logical step then was to limit those who could provide content and edits to the site. Anonymous edits were blocked by changing code in the underlying architecture of the

site. This changed the administrative rules of the site, thus requiring the creation of a username and password beginning at 03:50 a.m., 6 August, 2010. By 17:50 p.m. the same day, the first of six user accounts were created resulting in another five pages of links. This created five minutes additional work. Below is the log of actions taken from just one day of spamming under the new, more restrictive rules:

(Block log); 02:18 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Flamebournecinj](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

(Block log); 02:17 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Jem6759yv](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

(Block log); 02:17 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Whisperdragonschneideroairg](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

(Deletion log); 02:17 . . [Wonks1](#) ([Talk](#) | [contribs](#)) deleted "[Zantac information - zantac 150 ranitidine hydrochloride tablets](#)" (Vandalism: content was: '[<http://www.trancewhore.com/showthread.php?p=335582> endow], producer
[<http://www.hmfa.co.uk/Forum/viewtopic.php?f=2&t=113331> antagonism], broker
...' (and the only contributor was

'[[Special:Contributions/Hayesdd42hizl|Ha)

(Deletion log); 02:16 . . [Wonks1](#) ([Talk](#) | [contribs](#)) deleted "[Traveling with asthma and allergies - skin allergies in pekingnese dogs](#)" (Vandalism: content was:

'[<http://forum.scorea-rm2u.com/index.php?topic=329662.0> preponderance], againstfereto
[<http://firstgearpinned.com/phpBB2/viewtopic.php?p=...>] (and the only contributor was '[[Special:Contributions/Silverseeker79sa7x|Silvers)

(Block log); 02:16 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Silverseeker79sa7x](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

(Deletion log); 02:15 . . [Wonks1](#) ([Talk](#) | [contribs](#)) deleted "[Help change herpes meds valtrex acyclovir - procon for herpes](#)" (Vandalism: content was:

'[<http://anarsizmir.com/showthread.php?p=19797> foul], double
[<http://foro.iberovaves.com/viewtopic.php?f=2&t=29920> gasp], unquestionable
[<http://www.scion...>] (and the only contributor was

'[[Special:Contributions/Jem6759y)

(Block log); 02:15 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Hayesdd42hizl](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

(Deletion log); 02:14 . . [Wonks1](#) ([Talk](#) | [contribs](#)) deleted "[Latex allergy ada - allergy to mice](#)" (Vandalism: content was:

'[<http://www.postcodeforum.com/showthread.php?p=687947> wager], outline
[<http://emboyoloco.com/ForumPage/viewtopic.php?f=3&t=61008> oppression], partition...' (and the only contributor was

'[[Special:Contributions/Bador685j54|)

([Block log](#)); 02:13 . . [Wonks1](#) ([Talk](#) | [contribs](#)) blocked [Bador685j54](#) ([Talk](#) | [contribs](#)) with an expiry time of infinite (account creation disabled) (Spamming links to external sites)

([Deletion log](#)); 02:11 . . [Wonks1](#) ([Talk](#) | [contribs](#)) deleted "[Round white pill gg 296 - blue watson 350 pill](#)" (Vandalism: content was: '[<http://www.adornosprecision.net/portal/viewtopic.php?f=2&t=207802> pageantry], wit
[<http://forum.coalescecorp.com/viewtopic.php?f=2&t=238507> wi...]' (and the only contributor was '['[[Special:Contributions/Flamebournecinj|Flam](#)]

These pages received between four and one thousand nine hundred eleven hits from viewers – all of this on a Web site that had not been linked anywhere, that had not been intentionally optimized for Web search engines, and that was not intended for use by other than a very select few individuals. Multiply the amount of work created through this exercise by ten million users on a highly-visible site, and you get some idea of the impressive amount of resources that must be allocated toward maintaining site security.

On August 9, 2010, changes were made to the configuration of yadabyte.org such that edits and additions could be made only by logged-in users and so that no one could create a new user registration without help from the site administrator. No additional vandalism occurred after these changes were made. This also rendered the site virtually ineffective as a free and open canvas for new users to explore. There is a solution to this sort of vandalism that will also allow the site to operate in a less restrictive manner, and that is the tactic adopted by MediaWiki.

MEDIAWIKI

There are various ways to approach the problem of maintaining balance between openness and ease of use on the one hand and protection on the other. All balanced approaches require some sort of human staff. One way to provide this staff is to hire a cadre of professionals, presumably at some significant expense. Another approach is to build a cadre of trusted volunteer administrators. According to the Wikimedia Foundation “Staff” page (<http://wikimediafoundation.org/wiki/staff>, accessed August 13, 2010), the Wikimedia Foundation employs approximately 49 staff members. According to the Wikipedia article “Size of Wikipedia (http://en.Wikipedia.org/wiki/Wikipedia:Size_of_Wikipedia, accessed August 13, 2010) there are 3,377,357 articles in the English version of Wikipedia:

At a rate of 600 words a minute, twenty-four hours a day, a person could read nearly 27,000,000 words in a month. In the month of July 2006, Wikipedia grew by over 30,000,000 words. Given this, it is unlikely for any single reader to read all of

Wikipedia's new content. Reading the current incarnation at that rate would take over two years, and by the time they were done, so much would have changed with the parts they had already read that they would have to start over. Therefore, the best way to get an idea of the bigger picture is with statistics (<http://en.Wikipedia.org/wiki/Wikipedia:Statistics>, accessed August 13, 2010).

So how do 49 staff members input, edit, maintain, service, and protect this volume of content? They don't. Wikipedia has 1,742 site administrators and 12,867,571 registered users all of whom are volunteers. The world is full of bright people with abundant time, expertise, and resources on their hands. This is the power of collaboration via the Internet. Given the right set of rules and utilities, this could be the power of Webeaucracy.

There has been much study of wikis used for academic collaboration. More study of wikis and similar collaborative technologies should be conducted in the broader society. But wikis in the organizational setting have been recognized for their ability to allow dispersed groups to create shared content via collaborative editing. Wiki-based collaboration enables previously unseen communication practices (Wagner and Schroeder, 2010). These changes in communication practices will inevitably lead to changes in the way in which political discourse is conducted.

EXPECTATION OF PRIVACY

The Achilles heel of social collaboration sites may be privacy. Despite the “me generation’s” and “gen-x’ers” seemingly ubiquitous use of digital cameras and posting of “pics” on social sites like MySpace and Facebook, there is still a basic expectation among most users that personal information will remain...personal. While a site can be built such that it aims toward improving society, democracy, or bureaucracy, the same forces that can work to improve the social fabric can be turned toward the destruction of site collaborators. It would be truly unfortunate if a site designed in part to champion personal liberty were used to destroy individual security or used as a vehicle for slander. Mechanisms to safeguard such activities should be in place early in site design and rigorously enforced.

Facebook famously announced relaxation of their privacy policy in early 2010. A poll taken by the Internet security company Sophos (2010) showed that 95% of users disapproved of Facebook’s proposed changes. As impressive, the German Federal Minister of Consumer Protection, Ilse Aigner, wrote an open letter to Mark Zuckerberg, CEO of Facebook, expressing her dissatisfaction with Facebook’s stance. She wrote:

Dear Mr. Zuckerberg,

I was astonished to discover that, despite the concerns of users and severe criticism from consumer activists, "Facebook" would like to relax data protection regulations on the network even further. Your current privacy policy states that in future user data is to be automatically passed on to third parties. These parties are supposed to comprise previously vetted operators of websites and applications. Anyone who does not want this to happen must take action themselves and use the opt-out function.

I use the Internet every day, both professionally and privately, and am a member of several social networks, including Facebook. Social networks are an enrichment and it is difficult to imagine our lives without them. Networks such as Facebook link millions of people across national boundaries, and it is for this very reason that particular importance must be attached to protecting privacy. As you know, I, in my capacity as Federal Minister of Consumer Protection, am striving to ensure that personal data on the Internet is protected. Private information must remain private – I think that I speak for many Internet users in this respect. Unfortunately, Facebook does not respect this wish, a fact that was confirmed in the most recent study by the German consumer organisation "Stiftung Warentest". Facebook fares badly in this study. Facebook was graded as "poor" in respect of user-data policy and user rights. Facebook also refused to provide information on data security – it was awarded a "5" (= poor) in this category as well.

It is therefore all the more astounding that Facebook is not willing to eliminate the existing shortcomings regarding data protection, but is instead going even further. Decisions such as this will not engender trust in an enterprise in the long term.

I expect Facebook to revise its privacy policy without delay.

Facebook must ensure that the personal details of all members are subject to a high level of protection.

Planned amendments to its terms of use must be communicated to all users in a clear and straightforward manner prior to the amendments being made.

Personal data is not allowed to be automatically passed on to third parties for commercial purposes without consent. Private data may only be passed on and used for commercial purposes with the consent of the persons involved. Enterprises such as Facebook bear a particular responsibility due to the fact that users, in particular young users, are not aware that their personal profiles are to be used for commercial purposes.

Should Facebook not be willing to alter its business policy and eliminate the glaring shortcomings, I will feel obliged to terminate my membership.

Yours sincerely



Ilse Aigner

Federal Minister of Consumer Protection

(Source: Cluley, 2010)

Lest a collaboration site find itself in an equally uncomfortable position, the prudent administrator would be well advised to ensure that the privacy of users is considered at every phase of development and implementation.

CHAPTER 9

WEBEAUCRACY, IMPLEMENTATION

This chapter presents rationale and a roadmap for the acceptance and incorporation of collaborative Internet utilities into government bureaucracy.

The primary function of Webeaucracy is to provide basic services to the public free from the political morass that bogs-down traditional bureaucracy. There are collaborative endeavors with sufficient market potential for them to emerge on their own in the public sphere. Wikipedia and Facebook are two good examples. What should be of greatest interest to government is tapping into collaborative resources for administrative leverage and problem-solving. Think of a collaborative Internet utility as the best chance at tapping into the “brain trust” of society.

The biggest hurdle to implementation in the government setting will be policy and politics. How do we incorporate collaboration into existing bureaucratic governance? How do we deal with the flattening of hierarchy? Will this result in a mountain of public input? These and many other questions will face those who attempt to incorporate a collaborative Internet utility into their already hectic work environment.

Policy makers should recognize that the public will engage in these activities like it or not. Public pressure and enlightened policy makers will be the driving forces for the adoption of collaborative Internet utilities in government bureaucracies. Unfortunately, many government bureaucracies are unable to directly incorporate Internet technologies that could foster collaboration. Barriers to implementation may include security and budgetary concerns, but introducing new technologies to organizational cultures that are resistant to change is likely to be the biggest hurdle.

The Technology Acceptance Model (Davis, Bagozzi, and Warshaw, 1989) is designed to explain the acceptance of computer technologies by a broad range of end-users. *Perceived Usefulness* has been regularly identified as the key determinant in the adoption of a new technology (Jennex, Frost, and Judge, 2008; Agarwal and Prasad, 1997; Dishaw & Strong, 1999). In order to break down the barriers to adoption of a collaborative enterprise

by an existing bureaucracy, key stakeholders must be convinced that such technology will be *useful* to the organization. It is up to policy makers to ensure that senior government leaders are fully apprised of the potential benefits of leveraging collaborative Internet utilities.

Where in the organizational structure is the best fit for a collaborative project? Should it belong to S&T (Science and Technology) until reaching some benchmark for maturity? Should it be tacked on as an appendage of the headquarters cell? Should it be its own discrete entity through planning, implementation, and operation? Two examples given earlier seem to provide the best exemplars for incorporation of collaborative Internet utilities into government bureaucracy. InRelief and iemHUB are collaborative projects that are not incorporated directly into bureaucratic organizations, but are kept at arm's length and allowed to grow and flourish on their own. InRelief is a non-governmental organization (NGO) wholly owned by San Diego State University and funded by the United States Department of the Navy. The relationship to government is transparent on the website, and site governance is completely autonomous. The same holds true for iemHUB, a joint venture between the United States Environmental Protection Agency (US EPA) and Purdue University. iemHUB is the platform for the Community of Practice for Integrated Environmental Modeling (CIEM). Convergence toward a community approach to integrated environmental modeling led the US EPA to catalyze and support the development of CIEM. Other groups are also participating in the nascent (as of this writing) effort. In short, it appears that independent and exogenous is the best arrangement for collaborative Internet utilities.

The beauty of these arrangements is that they are a win-win-win: the collaborative organization benefits from government funding; the public enjoys the personal satisfaction of contribution; and the government, and presumably society, benefits from the collaborative product. Additionally, this arrangement keeps the site and its activities at arms-length from bureaucratic politics and interference, an important attribute in the nurturing of a collaborative community.

ORGANIZATIONAL MATURITY

The Object Management Group (OMG) is an international non-profit computer industry consortium. OMG sets worldwide enterprise integration standards and promotes the

optimization and innovation of business technology. According to the OMG, the ability to act as a collaborative system is the hallmark of a mature organization. The OMG Board of Directors adopted the Business Process Maturity Model (BPMM) in 2008 as “an evolutionary improvement path that guides organizations in moving from immature, inconsistent business activities to mature, disciplined processes.” “BPMM draws from the work of Weber, Curtis, and Gardner who posit five “levers of change” that are the elements of the organization that are core to any substantial organizational change. These elements are: *People, Process, Technology, Strategy, and Controls*” (Jennex, Frost, and Judge, 2008, 32-33). This dovetails nicely with the holy bureaucratic trinity discussed throughout this paper: *Rules, Product, and Skills*. The *Strategy* element in BPMM addresses the strategic understanding of roles, positioning, and focus for enterprise-wide decision-making in support of the overall organizational objectives; and *Controls* addresses the governance model for management, administration, and evaluation of initiatives, with strong appropriate metrics for measurement (Jennex, Frost, and Judge, 2008, 33).

The Business Process Maturity Model (BPMM) takes these five elements into account and proposes five organizational maturity levels: *Siloed; Tactically Integrated; Process Driven; Optimized Enterprise; and Intelligent Operating Systems* (Fisher and Howell, 2004). The 9/11 Commission had strong recommendations for the removal of silos of communication within component agencies of DHS. Inability to move information horizontally made these bureaucracies act, at the macro level, as if they were on the lowest rung of the BPMM maturity ladder. The highest level proposed by BPMM is *Intelligent Operating Systems*: this level of organizational maturity is characterized by the entire organization, its external partners, and the market it serves, acting as a *collaborative, interconnected system*. This requires extensive interchange of data and the use of the power of information technology to make real-time collaboration possible. “Of course, this shall require the management to have a long-term vision to make the futuristic integrated collaboration a reality. It should just not be thinking about short or long term profits or losses but their vision should [be] on state-of-the-art transformation of business processes that shall give them a clear edge over its competitors” (Jennex, Frost, and Judge, 2008, 34). Bureaucracy in the United States acts as though there is no competition for services.

However, if the United States is going to continue to compete on the global stage, tapping into collaborative resources is of necessity.

In keeping with examples taken from DHS component agencies in this paper, Jennex, Frost, and Judge (2008) propose the “Border Security Readiness and Maturity Model” (BSRMM) for incorporation of new technologies into government agencies that operate within the border space and at ports of entry into the United States. While this model is intended for the adoption of endogenous technologies, the acceptance of exogenous technologies is an equal, if not greater, indicator of, and pathway toward, organizational maturity and an obvious component of the ability to share information cross-culturally.

The purpose of the border security organization maturity model is to assist border organizations in preparing to manage the risk of new technology adoption. Five areas were identified as key to technology adoption and incorporated into metrics used by the model:

- Infrastructure/Resources – the ability of the organization to support and use new technologies within the context of their existing technological infrastructure and resource allocation.
- Personnel – the ability of existing personnel to operate and utilize new technology.
- Management/Governance – the ability of the organization’s management to lead and encourage adoption and use of new technologies.
- Process – the ability of the organization’s processes to adopt and utilize new technologies.
- Knowledge Transfer/Flow – the ability of the organization to bi-directionally transfer knowledge internally and externally. Focuses on *collaboration* ability, communication protocols, data/information acquisition/processing/distribution, and reporting. (emphasis added; Jennex, Frost, and Judge, 2008, 45-46).

It is significant that the BSRMM, BPMM, and various other organizational maturity models all incorporate the ability to “collaborate” as a hallmark of organizational maturity.

EFFECTING CHANGE

There are three chief methods of effecting change in bureaucracy: top-down, bottom-up, and external pressure. External pressure will be exerted by the public will over time through Collaborative Internet utilities. This paper is evidence of bottom-up pressure. But the most important of these forces for change is top-down adoption of collaborative practices. According to Niazi, Wilson, and Zowghi (2003), senior management commitment is the most frequently cited Critical Success Factor (CSF) in the implementation of Software Process

Improvement (SPI) programs. Their work also shows that organizational politics is ranked as the highest barrier to the implementation of SPI programs. Needless to say, SPI programs are an integral part of maturity development of an organization (Jennex, Frost, and Judge, 2008, 40). While we are discussing more than simply improving software, it should be self-evident these findings have implications for the broader acceptance of information technology. Toward the adoption of a collaborative culture, senior leadership must understand that a mature organization is desired and that the adoption of collaborative Internet utilities is necessary to achieving the desired end state.

Collaboration for collaboration sake will not win many converts however. Usefulness can be demonstrated on a case-by-case basis as projects are proposed. But a fundamental strength of collaborative Internet utilities may gain greater traction: the ability to produce in the absence of leadership. One of the weaknesses of traditional bureaucracy is hierarchy. Many decisions are centralized and at times, entire organizations are left at a standstill waiting for a decision to be made. Webeaucracy, with its starfish organization and decentralized decision making processes, harnesses strengths that equate to the hardening of infrastructure. A collaborative utility, with many nodes and many contributors, is nearly impossible to destroy. It is this characteristic that makes collaborative Internet utilities of great potential worth, especially in the homeland security construct.

HOW DO WE START THE COLLABORATIVE BALL ROLLING?

Once policy makers are convinced of the value of collaboration, how do government planners implement collaborative projects? Beth Noveck (2009) offers a few suggestions from her lessons learned during the design and implementation of Peer-to-Patent. Her suggested methods include government sponsorship of grants that create competition for the design and implementation of collaborative sites, government-sponsored collaboration labs, and pushing the idea to mass media to prompt public support. These seem to be obvious approaches, but there are plenty of people ready to take the grant money and run or clamor for change but not stay for the long haul. What Noveck fails to do in her book *Wiki Government* is to appreciate her own role in the effort; she should “toot her own horn” a bit more.

Central to Actor-Network Theory (Ch. 5) is the idea of *translation* in which innovators create a *forum*, a central network in which all actors agree that the network is of value and worth building and defending. Similarly, in *The Starfish and the Spider*, Brafman and Beckstrom (2006) recognize that one of the keys to success of any “starfish” organization is a “catalyst.” A catalyst is not someone who acts as a Chief Executive Officer (CEO), but someone who is willing to motivate others to action without taking all the credit. They observe that a catalyst is someone who:

- Can let go
- Is not a CEO
- Trusts the community
- Engages in policy matters and focuses on dispute resolution
- Empowers and gets out of the way
- Facilitates trust
- Does not talk about program and budget issues
- Takes a hands-off approach
- Has a tolerance for ambiguity

As pointed out earlier, Drapeau and Wells (2009) found that those contributing to Internet content trust each other, and the information they obtain via the Internet, more than they trust traditional channels. For a collaborative Internet utility to be a success, a person, organization, or ideal, must act as the catalyst, and this entity must be “the real deal.” Potential collaborators can smell illegitimacy a mile away, and they love nothing better than to uncover a fraud, hoax, or endeavor with less than pristine motives. The proposal, no matter what the desired product, must be fully transparent, and those who will benefit must be fully disclosed. An ideologically-grounded and emotionally-mature catalyst is a necessary component of a collaborative Internet community.

The idea of a catalyst may seem counter to the idea of a flat starfish organizational structure, but this is not so. The catalyst is “on fire” for the project, is deeply committed, and is the tireless visionary. Others see the ideological example set, and community forms around the catalyst.

Duncan (1985, viii), in *Symbols and Society*, put forth twelve axiomatic propositions for the formation of social order. Among these, he asserted that “social order is expressed

through hierarchies which differentiate men into ranks, classes, and status groups, and, at the same time, resolve differentiation through appeals to principles of order which transcend those upon which differentiation is based.” Walking down the street, we assess those around us as threats, harmless, possible mates, and so on; this is only natural and has served our fight-or-flight defense mechanism well. We cannot help but “size-up” those around us. We perceive and create our own hierarchy every day. It is important to the sense of community to allow collaborative contributors to create community through recognition. While assessment of public stature may seem ephemeral in the virtual community, there are millions of collaborative game players (*World of Warcraft* comes to mind) and concomitant social scientists who would argue strenuously that social position is every bit as important in the virtual community as it is in real life. In short, social status in the collaborative community is important to instilling a sense of belonging, and rules for the collaborative community must “resolve differentiation through appeals to principles of order which transcend those upon which differentiation is based” (Duncan, 1985, viii). The catalyst – person, organization, or ideal – assumes the role of totemic religious figurehead around which ideological musings are expressed and rules evolve to resolve differentiation thus forming community. Linus Torvalds acting as the real and figurative center of the Linux universe is a good example. Those in government who wish to establish collaborative Internet utilities would do well to identify a catalyst for the project early in the planning process.

START THE COLLABORATIVE!

The roadmap to collaboration unfolds as:

1. Policy makers appreciate the importance of collaboration in achieving a mature organization and desire to incorporate collaboration into organizational structure.
2. Senior executives are brought onboard and funding is allocated.
3. A catalyst is identified and is “fired-up.”
4. And stake-holders are readied to join the collaborative project.

How do we ready stake-holders and program managers and web designers? Noveck (2009, 171-172) proposes the ten following lessons learned from the Peer-to-Patent project for the implementation of collaborative decision making projects:

1. *Ask the right questions:* The more specific the question, the better targeted and more relevant the responses will be. Open-ended, “What do you think of x?” questions only lead to unmanageable and irrelevant feedback.
2. *Ask the right people:* Creating opportunities for self-selection allows expertise to find the problem. Self-selection can be combined with baseline participation requirements.
3. *Design the process for the desired end:* The choice of methodology and tools will depend on the results. But the process should be designed to achieve a goal. That goal should be communicated up front.
4. *Design for groups, not individuals:* “Chunk” the work into smaller problems, which can easily be distributed to members of a team. Working in groups makes it easier to participate in short bursts of time and has been demonstrated to produce more effective results.
5. *Use the screen to show the group back to itself:* If people perceive themselves to be part of a mini-movement, they will work more effectively together across distance.
6. *Divide work into roles and tasks:* Collaboration requires parceling out assignments into smaller tasks. Visualizations can make it possible for the people to perceive the available roles and choose their own. Wikipedia works because people know what to do.
7. *Harness the power of reputation:* Organizations are increasingly using bubbling-up techniques to solicit information in response to specific questions and allowing people to rate submissions.
8. *Make policies, not websites:* Improved practices cannot be created through technology alone. Instead, look at the problem as a whole, focusing on how to redesign internal processes in response to opportunities for collaboration.
9. *Pilot new ideas:* Use pilot programs, competitions, and prizes to generate innovation.
10. *Focus on outcomes, not inputs:* Design practices to achieve performance goals and metrics. Measure success.

As a DHS certified Program Manager it is my natural inclination to insert here a prolonged discourse on planning cycles, the importance of end-user input into requirements capture, and to introduce the Spiral Model of information technology project management. I resist this urge now as a demonstration of one of the fundamental elements necessary for collaborative innovation: just let it happen. The ten lessons above appear to be fairly sound and practical program management advice for the development of a collaborative Internet utility. Create a fertile environment – cultural, fiscal, managerial, and administrative – then turn it over to the collaborative organization, NGO, or academics, and let them grow the site organically. The more programmatic guidance and guidelines offered (forced) by the government organization funding the collaborative project, the more it will be strangled from

the outset. Ensure accountability? Certainly. Measure success? Absolutely. Provide oversight? As little as possible, and do so without interfering in the collaborative/creative process.

VISUALIZE THE COLLABORATIVE

While it is not the intent of this paper to get mired down in site construction or discussions about scalable PHP, MySQL, or XML wrappers and the like, it is important to point out one physical pre-condition to the success of a collaborative Internet utility: visualization. There is, presumably, a bell-shaped curve that describes the group of people willing to engage in a given collaborative site. At one end of the continuum are those willing to contribute because it is incredibly easy. At the other end are those who engage in the activity because it is incredibly difficult and they take great pride in being one of the five people on the planet willing to persevere. In the middle are the ninety percent of humanity who will be engaged by a robust visual representation of the community and its purpose. Capture the most collaborators through robust visual representations of the community and associated information; and, as pointed out by Noveck (2009, 126-127), “reflect the work of the group back to itself” in order to make the project and process self-evident and in order to foster a sense of community.

Information and data available on the site should also be transparent, accessible, searchable, and usable. After the January 12, 2010, earthquake in Haiti, many people on the ground began walking and driving around the island-nation with handheld Global Positioning Systems (GPS's) documenting locations of tent-cities, ad-hoc markets, and make-shift medical treatment facilities. The minds behind InRelief got their hands on the data and turned the information into visual representations of the island. Before the *USNS Comfort* made anchor on January 20, 2010, sailors aboard were already armed with a logistical plan for distribution of vital relief supplies based on these visual representations (Frost, 2010). This is the power of graphical interface and this is the power of collaborative Internet utilities – this is the future of Webeaucracy.

CONCLUSION

All thought draws life from contact and exchanges.

Fernand Braudel, *The Structures of Everyday Life: Civilization & Capitalism 15th-18th Century*, 1992.

This paper has provided theoretical and philosophical underpinnings for collaborative Internet utilities through literature review and a practical exercise. Examples given of current collaborative Internet utilities – the engine driving Webeaucracy – are just a glimpse of what will be possible in the future. These sites are already providing basic products to society without many of the political encumbrances associated with traditional bureaucracy. In the future, collaborative Internet utilities will provide problem-solving capabilities as never seen before. Harnessing collaborative Internet utilities will provide the brain-trust necessary to tackle “the big problems.”

This narrative has implications for the broader sociopolitical fabric. These assertions are made apolitically: they are not Republican assertions; they are not Democrat assertions; they are not Communist, or Socialist, or anarchic. Simply put, revolutionary interactive communications tools have been put in the hands of a large segment of ordinary society. Collaboration on a scale unprecedented in human history will change the social fabric world-wide. This is already taking place, the signs are everywhere.

Like the sea lapping at the shore of society, the collaborative revolution can transport us to new heights of discovery, point us in new directions, or wreak tsunami-like havoc on the ill-prepared. Government leaders and policy makers should be aware of the natural transition to Webeaucracy and should leverage collaborative Internet utilities to harness their potential problem-solving characteristics. Leaders ignorant of Webeaucracy may receive a rude awakening from their constituents.

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