

Shovel-Ready IT Infrastructure

We Americans are about to make a massive investment in physical infrastructure: roads, bridges, buildings, tracks, turbines and other forms of concrete, wood and metal. Good. But we would be making a huge mistake if we did not also invest aggressively in our “virtual” infrastructure—the information systems that are an increasingly vital part of our economy.

Investments in networked information systems and services have a history of producing reliable, high-yield dividends. Quickly.

This paper lists a number of “shovel-ready” Information Technology (IT) projects that the new administration can launch almost immediately. These projects offer important advantages over other forms of infrastructure investment because:

1. **They’re fast.** Some new Internet-based systems can be up and running in days.
2. **They’re agile.** Agility is never more important than in uncertain times, like now.
3. **They’re highly distributed.** A single project can easily provide jobs to people all over the country.
4. **They can save energy.** Telecommuting reduces traffic, telepresence reduces air travel, smart sensors save on heating costs.
5. **They create sustainable, high wage jobs.** New Web tools are relatively easy to learn—and provide ideal entry jobs for unemployed college grads.
6. **They can deliver increasing returns.** Internet systems require relatively small investments, yet are famous for growing and evolving quickly, and becoming more valuable than was initially hoped.

Listed below are eleven strategic IT infrastructure projects. Each is high value, low risk and ready to roll. These are by no means the only IT infrastructure investment possibilities, but they’d make a great start.

(In parentheses at the end of each listing is a source or two for more information.)

- **NIEM moonshot:** The Depts of Justice and Homeland Security have done impressive prep work on something called the National Information Exchange Model, or NIEM. We suggest moving this program forward at light speed. It can infuse government IT systems with data interoperability like no other single step we know of. And, it can make real the vision of a trusted yet dynamic national *Information Sharing Environment*—enabling the sharing of sensitive law enforcement and other sensitive information seamlessly across federal, state, local, tribal, international, public and private entities. *(c.f., NIEM.gov)*
- **National Transparency Infrastructure (NTI).** Citizen trust in government is tied closely to administrative transparency—especially when government is in stimulus-spending mode. Web 2.0 systems such as mashups and other collaboration tools provide an easily accessible, low cost, highly interactive platform for distributing real-time information about budgets, grants, infrastructure projects, foreclosure policies and much more. Launching a new national Web 2.0 system that delivers dramatically increased government transparency would not only build public support, but also improve managerial oversight and operational efficiency. *(c.f., Dr. Lawrence Lessig, Stanford University; Swan Island Networks).*
- **Rural broadband.** Like rural electrification in the 1930s, investment in rural broadband could pay dividends for decades. Like the interstate highway program of the 1950's, it could open doors of economic opportunity to countless rural households and communities. *(c.f., the Bonneville Power Administration, which has developed unique broadband uses of dark fiber in its electric distribution systems.)*
- **Federal telepresence.** Cisco saved over \$300 million dollars in reduced airline ticket costs (not counting hotel and per diem) because of meetings conducted using video conferencing instead of air travel. How many billions could the federal government save? *(c.f., Cisco Telepresence).*

- **Open source intelligence.** Let's face it: government security officials watch CNN to learn about emergency incidents...and search Google for intelligence. The federal government could start its own open, global intelligence wiki, where non-sensitive intelligence on everything from human trafficking and drug smuggling to nuclear proliferation is shared openly—with the public being the major contributor and reviewer. In the new era of government transparency, intelligence isn't just for Presidents anymore. The deterrence effect alone of putting a public spotlight on bad guys could justify the meager costs. *(c.f., CRS Report: "Open Source Intelligence (OSINT) Issues for Congress" Dec. 5, 2008)*
- **State/local/tribal Clouds.** Cloud computing is the next wave in IT systems. It's a kind of new interconnected digital utility infrastructure that consolidates resources and eliminates unnecessary redundancies. In certain situations, it can produce quantifiable benefits in efficiency, cost savings and innovation. A new national "cloud service" designed specifically for state/local governments could simultaneously improve government services and save money in strained local budgets. Example: In America, we have over seven thousand 9-1-1 emergency call systems. Sweden has one. One! Imagine the savings...and the increased efficiency. *(c.f., Amazon.com, Google, Microsoft and a host of others)*
- **Controlled Unclassified Information (CUI).** CUI is a sweeping, cross government initiative that will simplify and enhance information sharing by reducing over 100 different classification combinations for sensitive information down to three. It is supported by a Presidential order, and by key members of Congress. Essentially, it's the law of the land, and it normalizes sensitive classification at the policy level in government—no mean feat. It's ready to roll, at least in early adopter stage. Time to get started. *(c.f., Presidential Memo of May 9, 2008, "Designation and Sharing of Controlled Unclassified Information")*
- **Smart emergency notification.** Government emergency notification systems are a bad joke. Coastal communities can get word of the latest blue light Walmart specials on iPhones faster than they can get a tsunami warning. Kill the emergency broadcast system; create the emergency broadband system. Give FEMA the money—and the political imperative to move quickly—on its promising IPAWS initiative. *(c.f., Send Word Now, a next-generation emergency notification company.)*

- **Next-Generation 9-1-1.** Last year in the San Diego wildfires, a group of Second Life teenagers were accurately predicting neighborhood evacuations 30 minutes before reverse 9-1-1 calls arrived. A great deal of intelligent planning has been done inside government to help us move 9-1-1 into the 21st century, but progress has been slow. Again, it's time to get started. (*c.f., the U.S. Dept of Transportation, which has been developing "next-gen" 9-1-1 blueprints for years.*)
- **National Specialized ID Registry.** Trusted credentials (physical and digital) for all of America's first responders, law enforcement, medical professionals and public officials could be a tremendous asset in an emergency, and streamline government operations every day. A repository of these credentials could also facilitate collaboration, and help manage some of our nation's most important human assets. A common standard used by all, versus multiple, non-interoperable systems. (*c.f., the Smart Card Alliance.*)
- **Smart cities.** New interconnected urban monitoring and control systems—taking advantage of advances in wired sensors and mobile devices—could help deliver tremendous efficiencies in building management, energy savings, intelligent transportation, suspicious activity reporting, pandemic surveillance and dozens of other functions. Though this project is larger than most of the previous ones by an order of magnitude, relatively inexpensive pilots in a few cities could begin immediately. (*c.f., Joint Forces Command, and its Synthetic Cities program; DOT's Intelligent Transportation System.*)

So, Congressional and administration leaders, pundits and bloggers, citizens and friends—there you have it. A list of eleven information infrastructure projects that could raise public trust in government, add long-term, high-paying jobs, make our country safer, increase efficiency and save billions. And you could completely fund nine of them for less than the cost of one \$4 billion dollar bridge (*c.f., the proposed new Interstate 5 bridge between Portland and Vancouver.*)