



Building a World Class IT Infrastructure

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The State of Utah is nationally recognized as having well-managed IT. Indeed, a number of states are only now starting to take some of the steps that have given Utah this advantage: among these are consolidating network management and data center operations. Utah's national recognition in IT is not an accident, it has come about because of conscientious decisions and hard work by hosts of dedicated IT workers in Utah state government.

Utah should be proud of these accomplishments, but we can't rest on our laurels. As well managed as our IT is, we have to understand that this is in comparison to other states, not the best managed entities anywhere. Our goal should be that Utah not just do well compared to other states, but that our IT infrastructure be in keeping with the best IT management practices in any enterprise, public or private.

Infrastructure in this context can be a confusing word since we normally think of infrastructure in terms of capital. But, an IT infrastructure is not just machines, software, and networks, but includes people and processes as well. I call these the three P's: platforms, people, and processes. This distinction is important because it keeps us from making a serious mistake of believing that technology will solve all our problems. To be sure, technology advances play a role, but they can't provide a reliable IT infrastructure without well trained, talented IT professionals and a set of time-tested processes. So an IT infrastructure is the entire service organization, not just the capital that it uses to deliver the service.

World Class Companies

When we look at the leading companies in almost any field of business today—whether it be Wal-Mart, Federal Express, or any of a host of others—these companies compete because they have built world class IT infrastructures. These companies win because they have built systems that allow them to compete better, at a cheaper cost.

Let me cite a few examples:

- Wal-Mart controls when the lights go on and off in all of their stores, and even the temperature of the frozen food cases, from a central location in Arkansas rather than leaving this up to the individual store managers. Not only have they off-loaded this rather mundane task from the local manager, they've saved tens of millions of dollars per year.

- FedEx and UPS have built bar code tracking systems into all their packages and invested heavily in computerized tracking of packages, including mobile computers in their trucks. Not only does this allow them to offer their customers superior service, but they also save millions of dollars by more efficiently routing packages.

You may be wondering why I've wandered off into a discussion of frozen food cases and bar codes in an article about IT infrastructures, but in fact, this is an important point: If we're going to use IT to change our businesses, we have to stop thinking about this in terms of computers and start thinking about how technology can allow us to manage information. Wal-Mart manages information about their lighting using technology. FedEx manages information about their core business, moving packages, using technology.

A recent Gartner Group study showed that IT will account for 35% of all capital spending by companies in all sectors in 2001 and projects that this will grow to 50% over the next 5 years. Why are companies investing heavily in IT? Because they believe they can manage their business better and increase their productivity by doing so. World class companies found this out ten years ago and have turned it into a competitive advantage. Others are now playing catch-up.

The Governor has challenged us to become a 24/7 state, to put our services online, to move to paperless processes with electronic workflow, to leverage information across the enterprise, and to re-engineer our business processes. He believes that doing so will allow us to increase the quality of our services without significantly increasing the cost. The Governor's goals are predicated on Utah having a well managed and effective IT infrastructure that is effectively used by agencies to accomplish their various missions.

World Class IT Infrastructures

World class companies not only use IT, but they use it in identifiable ways. In short, world class companies have world class IT infrastructures. A world class IT infrastructure has the following characteristics:

- **Aligned with business needs.** This is first on the list for a reason. One of the most crucial characteristics of a world class IT infrastructure is that it takes its tone and its direction from the business needs of the organization. The chief IT person in the organization is a trusted member of the executive team and advises them on how IT can be used to improve service and cut costs. In addition, business managers at all levels of the organization are tech-savvy and understand the potential of IT to change their business.
- **High reliability, availability, and security.** These three are the holy trinity of a world class IT infrastructure. Once the infrastructure is aligned with the business it must provide reliable, available, and secure IT services or the organization won't trust it.
- **High customer satisfaction.** Customers in this instance are not the end customers of the organization, but the internal customers of the IT infrastructure. High customer satisfaction goes beyond the first two characteristics and ensures that the customer's needs are being met and that they're comfortable trusting their critical business

processes to the IT infrastructure. They have to view the IT organization as an important partner in meeting their mission.

- **Well established metrics.** Metrics provide a means of measuring the characteristics we've already discussed and showing management where they need to apply time and other resources to get the most out of the IT infrastructure. Without metrics, for example, no one can tell whether customers are satisfied or not.
- **Cost effective.** Clearly, achieving the goal of establishing a world-class business through IT is only worthwhile if it can be done in a cost effective manner. A world class IT infrastructure offers service at competitive rates and has well documented costs of service.
- **Data integrity.** A world class IT infrastructure protects data integrity. There are a number of dimensions to this: Are systems designed so that data is not compromised? Are the systems trusted so that users don't create shadow systems with the *real* data? Are systems integrated so that the same information is not stored and updated in multiple places? Is data backed-up and can it be recovered?

Does Utah need a world class IT infrastructure? I believe that the answer is an unqualified "yes." Governor Leavitt's vision requires that we depend more and more on IT as a vehicle for carrying out our jobs. If we are going to rely that heavily on our IT, our IT infrastructure must have the characteristics I've listed above or we will be plagued by problems and frustration.

Overcoming Objections

At first blush there may be a number of objections to this idea and our ability to carry it off, but I firmly believe that it needs to be done and it can be done. Let me deal, in a straightforward manner, with some of the possible objections that might be raised:

Doing this in the private sector is one thing, but limitations of the public sector make it much more difficult. Building a world class IT infrastructure in the public sector is surprisingly similar to the task in the private sector. The methodologies and organization can be nearly the same in either case.

This will cost too much. While building a world class infrastructure isn't free, the State of Utah already spends millions of dollars per year on IT. The task doesn't have to mean spending more money, but it might mean spending it differently. I don't believe we can afford to build multiple world class organizations, but we can afford to do it once.

Government doesn't need "world class" just good enough to get the job done. This is a common misunderstanding and usually happens when people mistake the phrase "world class" for "gold plated." As we've discussed world class IT infrastructures meets the customer's needs in a cost effective manner. Anything less is not getting the job done.

We've already got good processes. This is true in some cases. In fact, our need for improvement shouldn't be seen as an indictment of the current situation or people. As I said at the beginning of the article, we should be proud of where we are. But, taken as an enterprise, there is much room for improvement and numerous instances where we fall short. This is really just the next step in an evolution that started many years ago.

Isn't this just a call for centralizing IT? In fact, this isn't necessarily a call for centralizing all IT in the state. While many functions can and should be centralized because they are generic and applicable to all, I believe that agencies need and will continue to need good, agency-based IT advice. This *is* a call for better cooperation to find ways we can provide world class service at an acceptable cost. That said, there is an organizational basis to effective and efficient IT management.

I've seen the pendulum swing back and forth and I don't see how it changes anything. I don't view this as a pendulum swing, because I don't think we've ever been where I propose we go.

Conclusions

The Governor has challenged us to reach far beyond where we presently are and to use the best practices we can find to manage the business of government. To do this we need to build an IT infrastructure that can support that vision. Building a world class IT infrastructure will require our best efforts and the ability to see beyond our current perspectives to new horizons. Over the coming months, we will be making changes in keeping with reaching this goal. I welcome your comments and suggestions in this difficult, but worthy undertaking.