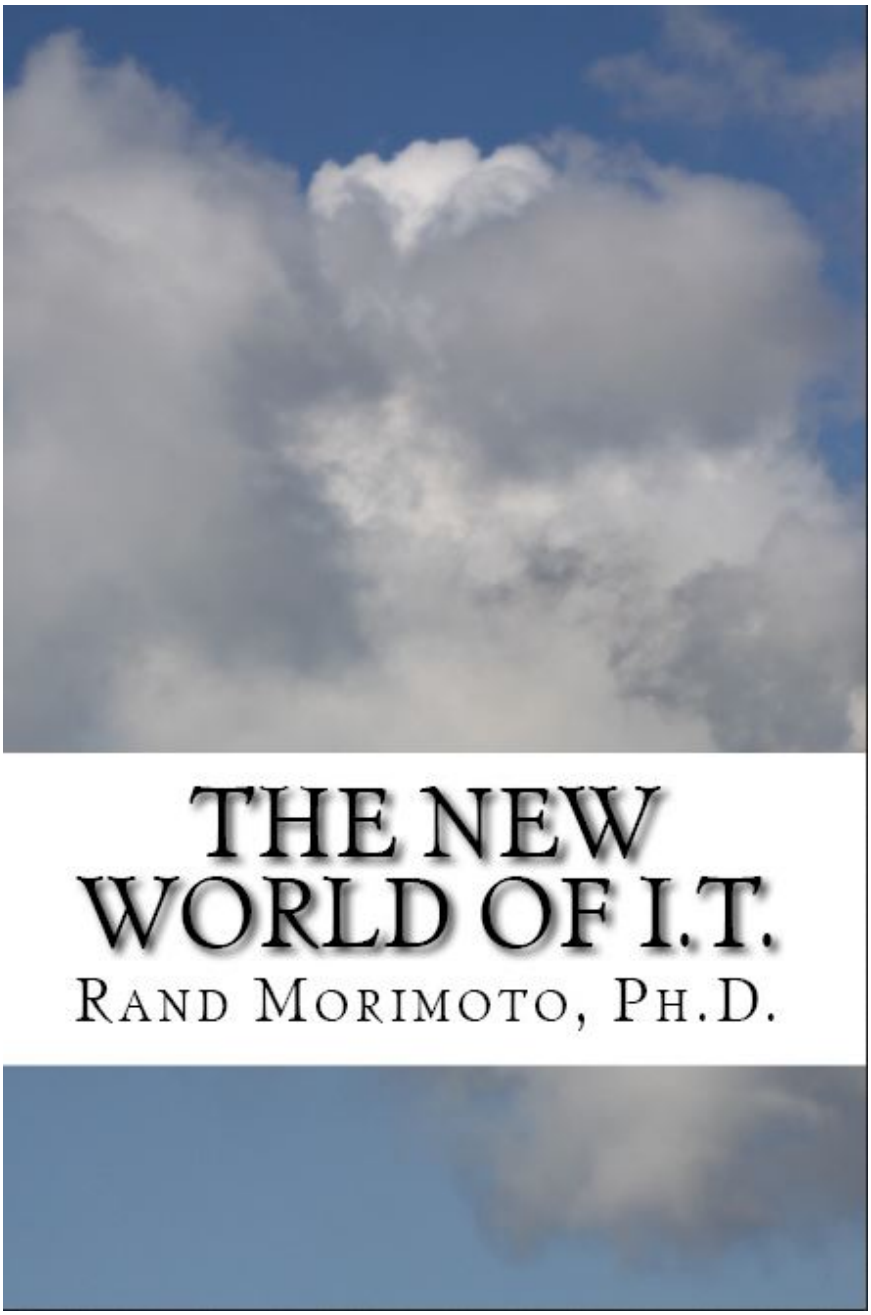

THE NEW WORLD OF I.T.

RAND MORIMOTO, PH.D.

The New World of I.T.

Mini-Book Strategy Series – Book 1

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DEDICATION

I dedicate this book to the experts at Convergent Computing (CCO)
and to all of the incredible clients we serve!

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INTRODUCTION

Over the past few years, the tech industry, that for the previous two to three decades were operated in organizations as the Management Information System (MIS) department or Information Technology (I.T.) department, has undergone a drastic change. And presentation after presentation, I've seen those in the industry talk about the impacts and effects of the change, but not a single person has gotten to the root cause…until now!

The importance of understanding the root cause for this major shift in organizational operations is that the leadership team addressing the operational and technological changes in enterprises can't begin to address the change, until they clearly understand the impetus for the change.

I have been in the tech industry since the 1970's, living and breathing the very essence that has built this industry from its very beginning. However I've also spent a lot of my time in the classroom in the world of academics through Masters and Doctoral programs studying and teaching economics and organizational behavior. It is the academic side of me that shook me awake one evening on a long transpacific flight that had me clearly realize what was going on in our industry.

The popularity of "the cloud", the notion of "bring your own device" (BYOD) to work, the immersion of "social media" in the work place weren't just coincidental consumer driven technology introductions into the work environment, but clear signs that our little computer industry has grown up. We're no longer in an industry where tech is just for techies, that I.T. had to be run by I.T. professionals, and where complex I.T. integration is a good thing.

No, in fact what is crystal clear, that an Econ 1 student learns in their first

week of class, is that successful businesses (and industries) have their competitive advantage, a barrier to entry, and is driven by an economies of scale, which the Tech industry had crossed the barrier into its next realm of its operational existence. I'll cover the ideas of the new world of supply and demand in the I.T. industry in Chapter 5, "Welcoming Identity, Align, and Supply."

BYOD is simply the users of technology confirming that given the right device, they don't need I.T. to "image" a system for them, hand them a pre-configured device, and to be handheld through the process of using new tools and applications. Much of the entering workforce in the past half-decade were born into a world of computers, technology, and the Internet as I will drill in to in Chapter 10, "Knowledge and Expertise is No Longer in the Datacenter." The entering workforce has gone through school using the Internet as their information library, as they enter the workforce, they don't need someone to show them something new and fancy like email, word processing, or Web applications. Those already in the workforce have been using computers and technology for at least a decade if not two or more. BYOD is simply the workforce saying "thanks, I got it…"

In Chapter 6, "Identifying Business Initiatives and Strategies," I'll cover the bleeding of Social Media into the workforce. Social Media goes far beyond users saying I want something like Facebook at work, rather the workforce saying, "give us a say in what we do". We know that having "big brother" watching after the workforce, and top down management structures as not being the core structures in the most successful businesses today. Instead, the most successful businesses are those where employees at all levels in the organization are empowered to make critical decisions, or at a minimum have a valued say in how things are done. THIS is the foundation of Social Media in the workplace. It's the enablement of communications throughout the enterprise to ask for input, and listen to the input in the decision making, business processes, and operations of successful organizations.

And lastly, I will address the impact "the cloud" has had in the shaping of the marketplace. In Chapter 9, "Technology as a Tool, Not the Solution," what I cover about the cloud is that as much as Google, Salesforce.com, Amazon, Microsoft, and Twitter are the quintessential examples of the cloud, they as businesses aren't what have defined the driving force of the cloud in business enterprises. In fact, it was the "sales pitch" that every early cloud provider used that drove the cloud into the changes in the Tech industry. It was all of the promises executives heard early on that the cloud provides the flexibility and agility to grow and shrink I.T. on demand, which ultimately helps organizations lower costs of I.T. operations. Early adopters of the cloud never saw those lower costs materialize, but what is very clear is that

executive leadership at the very top of enterprises (CFOs and CEOs) want options for I.T. other than what they have been getting in-house. And when Sales and Marketing departments "go around I.T." and setup their own Box.com accounts or Salesforce.com accounts, it is their message to I.T. that they want options, not the "old way I.T. has always been done."

With internal I.T. built on such complexity with year to year rising costs and multi-year long implementation and integration of "systems", the crystal palace that I.T. has built has to change. Cloud promised cheaper and better options, and while the cloud may or may not deliver it (the jury is still out on that one), what I.T. organizations have to realize is that between BYOD, Social Media, and the Cloud, I.T. MUST build a path to address the root factor driving the changes in the industry.

This book clarifies the changing forces in the I.T. industry and businesses I.T. serves of these driving initiatives within I.T. operations, and provides a path how organizations can build their environments to meet the needs of the new (and evolving) workforce. This book focuses not on addressing BYOD and Social Media as fads and factions that "have to be dealt with", but rather as core changes in the needs, expectations, and requirements of a more tech savvy workforce, and leveraging that savviness to empower the workforce to do better and greater things through the leveraging of technology, not locking down tech savvy workers and limiting their potential.

End of the day, the goal, expectation, and requirement of I.T. is that it needs to bring down the barriers that it has spent a couple decades building, and instead simplify I.T., making it more accessible to users, and truly driving the costs of I.T. down, whether that's through leveraging cloud-based solutions, or internally building up I.T. with built in economies of scale to optimize the costs of I.T. operations.

It is the I.T. leadership's ability to understand and embrace the changes in the marketplace, and leveraging that knowledge in transforming I.T. into a business enabler that can reach far into the evolution of the 21st Century business environment.

Part I:
The Changing Environment of I.T.

1 FROM THERE TO HERE – OH HOW OUR INDUSTRY HAS CHANGED

It's always good to start off with a definition of terms and references so we're all on the same page as we mention things like the I.T. Department, Bring Your Own Device (BYOD) or The Cloud. This book is about changes in what we have most recently defined as the role and responsibilities of the I.T. Department. How we have gotten to where we are today sets the stage of how we need to unravel things and get on track to the I.T. environment of the future.

The Impetus for Change

To ensure we begin with the same understanding and of where we are now and where we're heading, I will clarify specifically what it is that we have today in I.T. operations, and where we're headed. First and foremost, this book is about the role Information Technology, or I.T. Departments play in businesses, and how that role needs to change to meet the changes within the industry and the marketplace.

The I.T. department has traditionally consisted of techies in the business that build servers, configure systems, install software, and make sure connectivity to systems and the Internet are operational. When technology was new and complex, it took a team of technical experts to work together to make the technology stuff function.

What made technologies so difficult to implement and manage just a decade ago has changed and I.T. operations need to change what they do as

well as how they do things as we transition to the new world of I.T.

I.T. from a Couple Decades Ago

I.T. operations from just a couple decades ago were complex environments. Mainframe and minicomputers were not built to be user friendly, they were built to utilize operational code as efficiently as possible. As such, the operating environments required trained experts to run the systems. UNIX systems and early databases were also not built with a goal of performance and functionality, not to be user friendly.

It wasn't until Microsoft Windows Server came out that the interface used to operate a business system was similar to the interface used by day to day users to access their word processing software and spreadsheets. However, despite the prettier user interface, early versions of Windows NT, Exchange 4.0 email, and primary and backup domain controllers didn't work well together. They had significant reliability issues (old timers remember the "blue screen of death"), and required a trained professional to manage even the fundamental functions of the system.

Roll forward even to 10-years ago and the releases of Active Directory, Redhat Linux, VMware, and Oracle databases still required experts to install, setup, configure, and keep systems operational.

Identifying the I.T. Department of the Recent Past

For the past couple decades, I.T. departments have just continued the process of taking old versions and upgrading them to the latest version. Improvements in user interfaces and menu systems should have made everything easier as each subsequent release of a product had more features and functions than the previous release. Instead, the products ended up being more difficult to setup and more complex to operate.

I.T. departments of the recent past for the most part were staffed to design I.T. environments, migrate and implement new technologies, develop internal custom applications, and support end users of the environment. Some of these roles were contracted to professional services organizations to perform the tasks, especially one-time upgrades and complex coding and integration. In the past couple years, many organizations even outsourced the day to day mundane tasks in I.T. such as helpdesk support and day to day administration.

Smaller organizations typically had individuals that "did everything" whereas large enterprises had specialists working in teams to cover all of the tasks in the environment. However, large or small, I.T. operations have for the most part been where things are planned for, things are built and configured, things are customized, and people are supported and trained.

Locking Down and Building Barriers Was the Norm

To simplify the task of training users, providing helpdesk support to users, and ensuring everything worked the same across the enterprise, it was common for organizations to have end user systems all exactly the same. Users were commonly issued systems with identical make/model, identical template configurations, and all running the exact same version of Microsoft Windows and Microsoft Office. In many cases, the systems were completely locked down so that users could not make modifications or changes to the default configuration. This standardization and lockdown became a best practice for organizations to spend less time and effort managing and supporting their users.

Security Threats Make Us Even More Cautious

In addition to the desire to standardize, simplify administration, support, and future upgrades, security threats have forced organizations to tightly control their endpoint systems. In the late 1990s, organizations were challenged with viruses and worms that spread rapidly through enterprises that had no standard method of patching, updating, and managing their end user systems. And the need to keep systems updated to support the switchovers to Y2K and Daylight Savings Time further embedded in I.T. organizations the need to tightly control user systems.

With tight security policies, standards for patching and updating systems, and tools to directly manage endpoint systems, a big part of an enterprise's I.T. process is to keep systems under this tight control. The good thing about tight controls is that systems can be updated with consistency and some predictability. However, the tight controls have also created challenges for organizations.

Being Too Rigid has Limited I.T.'s Ability to Innovate

The tight security and standards controls have limited I.T. organizations in their ability of providing the best I.T. services to users. Not that the I.T. department provided poor I.T. services to its users, but the reality is that an organization had to fit within its own rigid constraints in its upgrade and operational processes. This is seen more easily in very large enterprises where a simple upgrade to a new operating system or new version of Microsoft Office is a 6-18 month process by the time everyone in the organization has an upgraded system. The lengthy process includes time to validate compatibility of new software with existing tools and business processes, time to cross-train users, time to physically get around to update all systems across the enterprise. For many organizations, the process includes multiple continents and dozens of different language sets that have to be addressed as part of the upgrade.

Over the past decade, I.T. has been relegated to the realities of what can be done with the budget available and constrained by the self-imposed technical and security restrictions, as opposed to truly having I.T. services make the best possible use of the latest technologies available. I.T. has been limited in its ability to help employees in the enterprise innovate using technology or enable and empower its employees to leverage technologies to the fullest. More and more organizations do things from an I.T. perspective that is "safe", that is "least disruptive to the business" and "just keeps things operational" rather than truly enabling I.T. to be a strategic advantage to the operations of the business.

But this is what I.T. has evolved into over the past decade, furthered by an economic downturn that pressures to cut costs and decrease spending. It could be said that I.T. operations have been "stuck in a rut."

Thought Provoking Questions

- Have you experienced I.T. "locking things down" as the common best practice in environments you've worked in?
- Do you feel that I.T. practices of the past decade will have a limiting effect on an organization's ability to be successful serving the enterprise in the future?
- Do you believe there's an appropriate balance between having a secure and manageable environment that also provides flexibility to empower users to be more effective in their work efforts?

2 WHEN HAVING THE BEST OF EVERYTHING IS JUST TOO MUCH

As much as user facing tools and resources were standardized to the least common denominator, locked down, and simplified in enterprise environments, much of the growth in I.T. spending over the past half-decade has been focused on the "backend" of the I.T. operations. Organizations have spent a good part of their budget converting physical servers to virtualized servers, implementing Enterprise Resource Planning (ERP) systems, buying more and more storage capacity to support the growing desire to "make everything digital", and have worked to make every part of the I.T. operations redundant to minimize downtime.

Because security and reliability of I.T. operations was so important for organizations, it was common to go out and buy the best of everything deemed necessary to meet operational goals and objectives.

It's Complicated, thus it Must be Valuable

Having the very best technologies typically meant the organization bought tools that by definition of being the best also meant they were complex to implement, integrate, and support. This complexity required experts and specialists to work days, weeks, and months to get the systems operational. And when it came to upgrading and updating the system to the next version, it required more experts and more specialists to keep the old system operational while the new system was implemented and updated.

The complexity of these systems justified the need to have experts on

staff as well as extensive budgets to support them. Users were trained on the new complex systems. To simplify usage, a team of experts would customize the system to make it easier for users to access the information they were looking for. The complexity created a vicious cycle that generated thousands of hours of expert time to do things. However, if it was complex, it must have been valuable.

The More Features and Functions, the Better it Is, Right?

As part of the complexity of systems, every couple years, software vendors had to justify a new version of their software to continue their licensing revenue stream, so each version of updated software had more and more features and functions. When the average word processing user is asked how many features and functions in the word processor they use, an overwhelming percentage of users respond that they use fewer than two dozen features. The most common are opening files, saving files, printing files, making basic font changes, spell checking documents, and maybe automatically generating a table of contents. All of these features were in versions of Microsoft Office two decades ago, so what's in the latest release of over 3000 new features in functions that are packed into the product that users don't utilize?

It's just been an ongoing cycle of adding more functionality and making things "better" whether users and organizations needed the new functionality or not. And not only do users not use all of the thousands of new features, organizations are forced to upgrade to the newer versions as software vendors discontinue support for the older products requiring users to update to the latest version. But of course, the more features and functions a product has, the better it is, right?

Product and Vendor Shoot-outs, Last Man Standing Wins

As products grow and expand with more and more features and functions, organizations go out to purchase a product, they frequently do a vendor to vendor comparison to choose the best product. Best however doesn't necessarily mean the product is the best fit for the organization. In many cases, products are compared from one to another solely based on included features and functions. So while the organization may only need 2 dozen features, during a product and vendor "shoot-out", a "winning solution" might be the one that has 4000 features vs a solution that only has 1000 features. The "shoots-outs" drives vendors to regularly assess the included features and functions in their product in comparison with their competitors, and further drives organizations to continue to add more and more features and functions.

In addition to feature and function comparisons, as software and

hardware vendors are acquired, and competition is consolidated to just a handful of strong vendors, there's little room for being #3, #4, or #5 in a product category when the #1 and #2 vendors for the most part win in terms of sheer market dominance. So the smaller vendors go out of business, and by default, the largest enterprises are the last man standing, and end up having the strategic benefit in a product category.

Enterprise Licenses Have you Covered

I.T. would be a lot simpler if software and hardware vendors didn't feel like they had to develop something "newer and better" to sell you to keep their revenue numbers growing year after year. But the fact that vendors have to sell as much if not more next year than they did this year, whether that's 10% or 20% more year after year, the drive for business profit and growth numbers forces software and hardware vendors to always come out with something "new and better".

However rather than selling something new when you buy it, the whole concept of an Enterprise License Agreement, or a Volume License Agreement with a 2-year or 3-year term allowed vendors a longer projection on growth and profitability by locking organizations into these revolving licensing arrangements. Over the years, the terms of the agreements have changed from simply getting the new version included as part of the license, to a subscription model where the use of a product required an ongoing payment to a subscription with a monthly or annual fee.

The licensing agreements do provide substantial discounts as well as perks in form of support hours, free add-ins, and other incentives to entice organizations to continue to renew their licensing agreements. And to ensure the vendors increase their license contract each year by 10-20%, vendors have gotten in the habit of buying new companies and melding new products and solutions into the licensing contract.

The whole idea is that instead of buying products from 10 different companies, the overall portfolio a license agreement covers could simplify spending to just 3-4 vendors that include everything an organization needs in terms of I.T. tools and solutions.

"Stuff" frequently gets thrown in the first couple years, and as organizations actually implement the freebie that was thrown in, within a year or two, the organization then has to buy the licenses for the new solutions now that they're using them. These Enterprise Agreements or Volume License Agreements are good for organizations as it does simplify the purchasing process, the tools and technologies eventually work better together than across to other vendor solutions, and the volume discount is leveraged by keeping with just a handful of vendors and contracts.

I Have the Best Solution, For Now…

Over the past few years, purchase decisions have bounced back and forth based on best of breed solution one vendor has versus another. And over short periods of time, the decision of what is "best" has bounced back and forth depending on the priorities of an organization. So an organization may have the best solution (for now) but may switch to something else that ends up being "better" at that time.

The definition of "Best" has changed frequently, and as such, organizations have gotten good about integrating different solutions with others. In fact for many organizations, more time is spent making disparate products work together than actually advancing technology forward throughout the enterprise. The best solutions have tended to be short lived, and the cost and effort of integrating various solutions together is one of the biggest challenges for organizations.

Best of Breed is Best, as Long as There's a Connector

To allow organizations the ability to acquire a product they deem to be the best technology has usually been justified as long as there's a "connector" or "integration pack" that ties the product in with other technologies the organization is using. Of course, the connector and integration is never as easy as the vendor makes it appear to be during the sales cycle. However the pre-sales demo looked great, and someone figured it wouldn't be insurmountable to integrate a new product in with everything else in the business.

In fact, a huge part of an organization's I.T. expenditures has been in labor costs (whether in-house personnel or contractor/consultants) spent integrating various disparate products together. Even technologies from the same company usually require complex integration as many times products from a vendor are acquired through mergers and acquisitions. Even long standing technologies within an organization are developed independently within a vendor (like early versions of Microsoft Exchange email, and early versions of SharePoint document management) and thus required extensive integration to tie them together.

"Connector" seems to be just the code word for "requiring extensive amount of time to actually make the solutions work the way they're supposed to."

Time to Upgrade Again, Hang On

So while an extensive amount of time is spent implementing, upgrading, updating, and connecting stuff together, as soon as the organization has everything working reasonable well, a new upgrade of one of the products and components comes out and the whole cycle of planning, testing,

migration, implementation, integration, and user training begins all over again. The more connectors and integration pieces, the more time and effort is typically spent to ensure the upgrade works properly. And frequently various products are linked together so an upgrade to one requires the upgrade of another product at around the same time. So an organization choosing to upgrade one product may actually end up having to prioritize 2-3 other product upgrades as dependencies in the process.

It's a never ending cycle, one where organizations get good at planning, preparing, testing, upgrading, and getting users trained and helpdesk support teams proficient at supporting users.

Thought Provoking Questions

- Do you have a clear understanding what you already own as part of your license agreements, and do you consider selecting those products you own before looking at other options?
- Are decisions about product and technology selection done heavily on the inclusion of the best features and functions, or a balanced approach of cost and functionality?
- When calculating the cost of an I.T. initiative, is ongoing maintenance, integration, and support of the solution taken in account in the cost assessment?
- Are product and technology selection decisions made primarily by architects and technologists in the I.T. department, or are solution selections inclusive of business decision makers and end users?

3 ONSET OF CLOUDS DO MORE THAN CHANGE THE WEATHER

A question I regularly find myself debating with my peers in the industry is whether the "Cloud" changed the marketplace, or whether it was solely the promise of the cloud the drove the change. It's one of those chicken and egg scenarios, I tend to believe that early hosted services like Salesforce.com or email in the cloud piqued the interest of organizations looking to do I.T. a different way. But the promises made in the early days of marketing of the cloud was what really shaped both cloud providers and consumers of cloud services to make the cloud what it is today.

Early Cloud Solutions had Little Connection to Businesses

The "cloud" has been around for a very long time, some may argue that the birth of the Internet and common services like Google and Yahoo search engines, and Hotmail and AOL were key enterprise cloud services. But what is not argued is that the initial services in the cloud were for the most part broad based and targeted at individual consumers of the service. Enterprise businesses weren't using MSN or Hotmail as their primary email system. The early days of Google and Yahoo search were focused solely at indexing the general Internet, not internet file shares and document stores.

But a LOT of very good lessons were developed in these early days of the cloud. Email is the easiest example as consumers that use Yahoo Mail, Gmail, Hotmail, and MSN don't really worry about whether their email will disappear or that there will be an extended period of outage in their access to their email. In fact, even today, many I.T. professionals use a public email

provider (Gmail, Yahoo, MSN) to communicate over email when their internal corporate email is down. We've come to rely on the stability of the hosted provided service in our day to day lives. Individuals typically only spend a couple minutes setting up their email in one of these hosted cloud provider sites, no I.T. department at Yahoo or Gmail goes to your home to connect your iPad, Windows tablet, or Apple Mac computer to the email system. The public email services have simplified their process to onboard new users and the endpoint client software to access emails. Whether just a Web browser or a built-in email App, the service has been customized to make things simple for users.

THIS is what I.T. should be like. And this is how the enterprise focused cloud service providers have been evolving in their service offers to large enterprises, to adopt this easy to onboard, easy to support, highly reliable and dependable concept of I.T. computing.

Early Business Cloud Solutions fit Niche Needs

So with basic email providers available from early on that have hosted consumers and individuals within enterprises for years, the early business cloud solution providers really were organizations like Salesforce.com and Microsoft's Business Productivity Online Service (BPOS). Although I'll take this opportunity to take one step back and note that thousands of organizations have been using a business cloud hosted solution for years before that through employee payroll services like ADP. When security officers in large enterprises tell me they don't trust the cloud, I always ask whether they use ADP or some other cloud provided payroll service, and most of the times they confirm they do. And when I ask for how long, and more specifically whether they feel things like employee social security identification numbers, payroll information, home addresses, and other employee related data is important to them, and that they've been using THAT cloud for years, we can usually get over the hurdle that cloud "might" be something they are good with considering.

But back to the early days of Salesforce.com and BPOS, these are services that early on had their challenges in terms of supporting users that were on premise under the realm of an I.T. department, yet the application and data was up in the cloud. And the early days of these services were marred by outages, upgrade windows, and other unexpected interruption of services as the cloud providers built processes and practices to improve their services.

We know that cloud services CAN be reliable and dependable as proven by the Hotmail, Gmail, and MSN days of messaging, however core processes are different when performing upgrades and updates of applications. Unlike

with an in-house application upgrade where the organization knows that their employees are potentially offline over the weekend, or the middle of a quarter is a quiet period and good time to perform an upgrade, when the cloud provider is hosting email for hundreds of organizations from every time zone and in a wide range of industries, there's typically no "good time" to bring a hosted cloud environment down. As much as an educational institution might identify a lull period during the holidays as a good time for an upgrade, a seasonal retail sales organization or an emergency care hospital might find the holidays to be their busiest and most critical time of operations. So the cloud providers can't simply provide I.T. services like an internal I.T. department might, and thus the challenges in cloud services has required a rethinking of how to provide reliable services, yet upgrade technologies rapidly in a 24x7x365 no downtime environment.

The Cloud Bandwagon, Promises, Promises

By 2009 the concept of the enterprise cloud started to catch the media, and Chief Information Officers (CIOs) needed to be able to respond that they had a "cloud strategy" being that it seemed like that was key to every (strategic) organization at the time. Products were renamed so that the exact same product a year earlier as an "enterprise business solution" was now rebranded and sold as a "cloud-ready solution". Everything was tagged with the word "cloud" in it.

And with the cloud marketing came the promises. The promise that leveraging a cloud service was cheaper than implementing things in-house. That the cloud was "elastic" meaning that the org can grow or shrink and only had to buy cloud services for the number of current employees in the organization, no overbuying or under buying hardware devices in-house that were over or under powered. The cloud was to provide organizations "agility" in their growth and expansion as an organization could spin up hundreds of users immediately in the cloud in a business acquisition. The cloud was this amazing thing that did EVERYTHING! And of course when CEOs and CFOs heard the advertisements, read very compelling articles in well-respected business and financial journals about how good the cloud was, it was the focus that organizations had to take the cloud seriously.

Early Cloud Adoption, Hold on to your Seats

But the early cloud was far from actually providing what was promised. Early cloud services were plagued with outages, sometimes lasting an entire business day or more. The agile pricing sounded great in the marketing materials, but most cloud providers charged an annual subscription fee for users and thus if the organization shrank in size, the organization would still be contracted to pay for the number of subscribed users for the balance of

the contract/subscription. Most cloud providers, while having datacenters potentially around the globe, would only allow organizations to host their company from just ONE datacenter, so users in Asia or Europe would have to traverse back to a North American datacenter to access business information instead of connecting to a datacenter just a few miles from where they were located. Many cloud providers still have drastic limitations of what they can provide, however those buying cloud services today have more realistic expectations.

So you don't get (as many) wild promises as in the past, and the buyers are more aware these days, however it took several years before the cloud marketing (and over promises) really settled down. But those that lived through the early days of the cloud were promised more than what they received, and there were some very "exciting" times in those early days.

In Hindsight, This is What I Really Want

What this first section of the book provided was a background of where we've been lately and why we have what we have today. The balance of this book will provide guidance on where organizations can now start thinking about what they'll do in this new world of I.T. I'll be going over clear changes in how I.T. today and in the future will be VERY different than it has in the past, and how organizations will need to shift their business models and thinking accordingly.

This new I.T. environment is one where users want options, businesses really need to take advantage of true I.T. agility, and at the end of the day if this is all done right, costs can be saved while services greatly improved.

Thought Provoking Questions

- Do you feel that the public cloud is ready for enterprises?
- Do you have a "cloud strategy" as it relates to private and/or public cloud offerings as supplemental choices for technology solutions for your organization?
- As the cloud evolves every 3-6 months, what do you do to keep up with the latest cloud offerings and best practices relative to the current environment of the cloud?
- Are you waiting for the cloud to be "ready" before you jump onboard? If so, how have you defined ready? And when will you jump in?

Part II:
The New World of I.T.

4 EVOLVING BEYOND "PLAN, BUILD, AND RUN"

Just as the I.T. environment drastically changed from one of green screen data entry displays connected to mainframe computers to a world of standalone personal computers, so will the changes be drastic as the new world of I.T. takes on the I.T. business thinking in enterprises.

Plan, Build, and Run – The Foundation of the I.T. Industry

The past couple decades has been what is described as a Plan, Build, and Run I.T. business environment. Organizations plan for the implementation of a new technology, they build the servers and systems needed for the software application, and then they run (and support) the application in their enterprises. There have been dozens of books on creating effective plan, build, and run systems as much of modern manufacturing is based on this methodical process. So from the dawn of the industrial revolution, the largest and most successful businesses have perfected plan, build, and run, and it was most fitting for I.T. operations in the past couple decades to adapt best practices to run internal I.T. operations in the same manner.

With a Discrete Product, I Need Good Planning

Every application hosted in an enterprise I.T. datacenter goes through a planning process, whether a short quick plan or an extensive plan, but someone spends a few cycles thinking about what they plan to do. The planning process is different for a brand new implementation of a brand new software application as opposed to upgrading an existing application. But

regardless, there is planning involved, whether it is planning to implement or planning to upgrade, the process of designing and architecting the implementation of a new system has been the first step.

Additionally, planning has been more than just planning the process of the implementation or upgrade, it also included the planning for the number of servers needed, the placement of the servers and systems for high availability and security purposes, the planning for the integration with other systems, etc. Organizations frequently contracted outside consultants for the planning and upgrade process as these processes are typically only done once. It's better to bring in someone who has done it several times rather than to rely on internal staff or maybe someone that was involved in an upgrade at a previous job once before. Having help with the one-time installation or upgrade task was common.

The planning process also involved individuals from contracts administration, individuals from the project management office, security and compliance personnel, and others. Planning also frequently involved helpdesk support and those responsible for training users and supporting users after the implementation. As change happened within the enterprise, the planning for the change was a very important task that involved a lot of people.

I Have a Blueprint, Now to Build it Right

With a plan in place, for simple applications in small environments, the implementation might just be a day or weekend long process. But for larger enterprises, the plan was just the start of the process, and the building of the I.T. systems is a whole new series of tasks and challenges.

The building of I.T. systems to support the running of applications involves allocation of computer room rack space, buying of hardware and software, contracting outside support services, and developing successful implementation best practices. Frequently the building of the entire system is first done in a test environment before implementing the solution in the production environment. And in many other cases, the building of the process is first done in an isolated test environment, then put into a limited production test environment, and finally put into full production. The build process is quite extensive the larger the enterprise, and the more people the implementation impacts.

Additionally the building of the systems also frequently involved building redundant systems in other datacenters so that when the system was operational, it could be failed over to another datacenter. This build process could involve the building of systems on multiple continents, supporting multiple languages, and providing failover between datacenters.

And if the build process involved reusing existing systems that individuals throughout the enterprise use every day, as in an upgrade of the operating

system on a desktop system or implementation of a new version of Microsoft Office on a system, the build process could be extended to days, weeks, and months as application compatibility testing, backing up of existing user data, cross-training of the user, etc. are all part of the build process.

Again, the build process is not a simple task, and could be quite an extensive process. THIS is why the work of the I.T. department of the past has been quite burdensome because so many people had to be involved to build and test systems, secure and manage systems, and conduct user and administrator training throughout the process.

When Setup Properly, Admins Can Run it Day to Day

Once the system has been setup, which might have been just a version upgrade of a software application, with enough modifications and changes within the application, the resulting process could require extensive cross-training of users and administrators. So the "run" process has its initial phase of getting familiar with running the new system, but then switches into a day to day administration and management routine.

At the start of the run process is identifying what's new, what's different, how to maintain and manage the new system, how to ensure users can use the new system, and ultimately how to keep the system operational with limited or no interruption of operations. The preparation for the run process starts in the planning process and many times it takes weeks to develop the training materials and prepare the organization for change. As such, the run process is time consuming and full of tasks. Having a project manager during the build process is important to keep the build tasks well managed. Having a project manager even early on, like during the start of the run process, ensures that all of the day to day tasks are properly accounted for and daily tasks are properly documented and appropriate personnel trained to run through the tasks daily.

Helpdesk is My Safety Net

For many organizations that implemented systems, the Helpdesk was the catchall for anything that wasn't completely planned and prepared for. When things didn't go quite as well as expected, helpdesk would get overloaded with questions and requests for support. When done properly, helpdesk had minimal additional effort required. Obviously I.T. organizations shot for the cleaner and better planned implementations with fewer helpdesk calls afterward than the alternative. End of the day, helpdesk was the safety net for all plan, build, run I.T. implementations.

New Version is Available, Let's Do it All Over Again

As soon as a new system has been implemented, the I.T. operations typically jumped right into a plan, build, and run of a different implementation system in the environment. So after an email system upgrade, a new voice and phone system upgrade might be implemented. And after that, a document management system might be implemented. And after that, an update to the ERP system. It's been a never ending cycle for the I.T. organization with several projects going on throughout the enterprise on a regular basis. But also part of this process is the realization that the system that was just implemented will need to be upgraded in just 2-3 year time, so it's doing the plan, build, and run process all over again.

Most vendors in the I.T. industry standardized on a 3-5 year major version upgrade cycle, so most organizations could expect to be back to upgrade the system within that 3-5 year timeframe. However the software and hardware industry also started to implement support models that only supported the current and previous two versions of a product, so if a product is 3-4 versions behind, there would be no support for that "old version of the product" and worse yet, no easy way to upgrade to the current release. So it was not optimal to just skip several versions and upgrade down the line. There have been key requirements to keep upgrades on a consistent upgrade cycle.

And in the past couple years, vendors have been pushing the upgrade cycle from every 3-4 years to now a major release every 1-2 years. The product vendors claim that this accelerated timeline is forced on them because as technologies get implemented in the cloud, and cloud providers are constantly upgrading their products every year or two, it's important that ALL products are kept up to date for a competitive reason. So the cloud is shifting the upgrade cycle from one that was fast to a cloud schedule that is even faster.

Thought Provoking Questions

- Do you feel your I.T. environment operates as a Plan, Build, Run operations?
- Do you believe that Plan, Build, Run will remain a sustainable operating model in a cloud-influenced environment?
- Do you feel that a Plan, Build, and Run operation may be inapplicable to your environment now or in the future? If so, when do you think you will need to shift to something that might be more conducive of cloud-influenced applications?

5 WELCOMING "IDENTIFY, ALIGN, AND SUPPLY"

The Plan, Build, and Run model works great in an environment when things are purchased and implemented in a traditional datacenter. However as organizations shift from a product focused I.T. environment to a services focused I.T. environment, there's no longer things to build, thus nothing to plan to build, and I.T. operations have to change. The organization shifts from one focused on plan, build, and run to an organization focused on identify, align, and supply.

Shifting to a Services Model in I.T.

As organizations start to "buy" their services from cloud providers, they shift away from a product deployment model to a services consumption model. The organization no longer needs to size servers, build systems, configure fault tolerance, plan for datacenter space, buy equipment, burn in hardware, and train administrators on backup and maintenance tasks. As a buyer of services, the requirement is no longer to plan the build and implementation of technologies, but rather to purchase the appropriate amount of capacity, and train users to use the application.

There's still a very important requirement to plan, prepare, and train users on the consumption of the services, but it's more end user experience focused than the past of building highly available and reliable systems. The building of the "backend systems" is no longer in the control of the buyer. If a certain level of services are required, then the organization needs to assess the capability of the cloud service provider in meeting those requirements. However in many cases, you get what you get, and you just have to choose to take what the service provider provides now and hope the provider will

upgrade their services in the future. As cloud providers seek to maintain customers and offer competitive solutions, they are incented to upgrade their service offerings, so the cloud-based solution are likely to get better over time.

Supply and Demand Become Key

As a consumer of services, the important factor is matching the supply and demand. While some providers charge a flat rate for what most organizations would feel is acceptable service capacity for each user, such as with email messaging, some services are purchased based on demand and usage. If users are used to unlimited supply, they can consume the service in a manner that causes an unnecessary burden of expense. It's similar to a case where if electricity and water were at a flat rate, no one would turn off the lights around the house and take extra-long showers as there would be no negative consequence to the user. In these cases, the service would be abused. Some I.T. services, like storage of information, is charged per gigabyte and terabyte, so from a cost perspective it behooves an organization to only store information that is needed, and eliminate content that is not. Or if virtual machines are charged when they are running, but not charged when they are stopped, in test and development environments where dozens of virtual machines are used for testing, the organization needs to turn off systems that aren't in use.

As every economics student learns in school, it is when supply equals demand where cost optimization is achieved. And with lower demand, the consumption is conserved, and costs be driven further down in the organization. As the organization subscribes for services, having methods to optimize the desired capacity for demand will help the organization pay for only the capacity the organization requires.

Identifying the Needs of the Organization

To come up with the appropriate amount of capacity, the I.T. department needs to shift its architecture planning from capacity planning in terms of how many servers are needed, to planning capacity by identifying the appropriate amount of supply that is needed to fulfill on the organization's demand for resources. And instead of simply looking at what the organization has in use today and the current growth in usage space, the organization needs to do real assessments on requirements and demand.

When capacity was seen as "free" to the users, they may have stored everything, saved everything, or configured more test systems than what was really needed, because stuff was cheap or free in the past. Thus in a "pay for use" model, usage needs to be optimized, and systems put in place to help regulate consumption to an appropriate level.

This process of identifying the needs of the organization is best done by a business analyst who can assess what users within the organization do, how information, data, and I.T. services are used, stored, and consumed. In order for I.T. to be more effective in a consumption model environment, I.T. needs to better understand the business. And more than just what departments do within the organization, also what an optimized department would do if it maximized its capability of I.T. So the goal is to take the best practices of the best organizations around, and leverage and optimize those best practices to use as the baseline for capacity analysis and planning.

Interview and Observations more than Architecture and Design

The identification process of the new optimized I.T. environment is helped by interviews and observations within the business. Instead of an I.T. architect and designer attending I.T. technology conferences and designing server capacity, I.T. systems fault tolerance, and compliance security in a conference room, to truly build I.T., the I.T. designer, or more appropriately a business analyst, needs to get inside the business and understand the tasks performed by employees of the organization.

By observing how sales people sell, how manufacturing is run, how marketing is driven, how paperwork is processed within an organization, and how similar businesses do it better, the I.T. analyst better understands true business processes. A good example is a salesperson who might traditionally sit behind a desktop making phone calls all day may not be a good example of what the salesperson COULD do if the person wasn't stuck "behind" a fixed desktop PC system of 2 decades ago. Instead, a salesperson could potentially leverage the tools and resources of today in terms of gathering data about sales leads and opportunities by accessing databases and being mobile to actually go "see" how his potential clients do business. By having a mobile device with mobile data analysis tools, a salesperson could be more effective in understanding their clients and thus establishing new business and new revenues for the organization.

It is this use of interviews and observations, combined with an understanding of what other organizations do in optimizing and leveraging I.T. that helps an organization better plan for the consumption of services in the future of the business, not based on stale data of the past.

Aligning Business Needs to Success Criteria

Also in terms of I.T. planning, beyond understanding what people within the organization do (or should do) day in and day out, understanding the business and goals of the leaders of the organization is a huge factor in developing success criteria for I.T. services. If the CEO has stated the

organization will grow by 40%, then the I.T. growth plan isn't simply taking what the organization is doing today and adding 40% in budgeting and estimating the future of I.T., but rather determine how the organization can grow by 40% but increase I.T. costs by significantly less than 40%. Again, instead of the old model of giving each salesperson a cubical tied to a network wired personal desktop computer and plug in phone, what if the 40% growth in business can be achieved with 0 growth in office space by providing employees mobility of their I.T. supplied tools and resources.

The salesperson with a mobile device, wireless connectivity, and telephony on the go can allow that additional hire to be anywhere and get their job done. The person may still need a cubicle to work from, but instead of fixed offices where each person gets their own office with their own dedicated PC, the organization can have shared offices where individuals can bring their mobile device into the office and connect wirelessly to the enterprise. This flexibility in workforce workspace can potentially allow an organization to consolidate dedicated office space into shared spaces thus allowing for the growth of the organization, without the linear growth in cost.

Similarly, if the Board of Directors set the direction for the business to add services on another continent, again, the business model could be take what I.T. has today in terms of "servers" and "racks" and "routers" and "desktop systems" and replicate a current office to an overseas office, OR I.T. could leverage stretched networking capabilities or even cloud-based services so that a new office can be setup with NO on premise services, NO physical writing and just mobile devices for users. I.T. can just drop in a wireless access point to a new site that connects back to an Internet connection that gives the users in the office full access to all I.T. resources in another existing datacenter or to cloud service providers.

I.T. can align its services best when it rethinks its role, and prepares its services to fulfill on the needs of the business, not on the monolithic cookie-cutter replication of I.T. systems and services of the past. With this thinking, I.T. can be an enabler of business growth with less of a burden on the linear costs of growth and business success.

Identifying Service Needs and Requirements

With an understanding of the goals and initiatives of the business from top down, and knowing what individuals within the organization do day in and day out, I.T. can now identify the service needs and requirements of the employees of the organization. If users can untether themselves from a desk and be more mobile, then I.T. can provide mobile services instead of desk side services. If users have historically saved everything and used whatever capacity was available, I.T. could better optimize storage and usage demands through automated throttles and information management filters to more effectively implement a service level that more appropriately meets the needs

and requirements of the organization.

Buy versus Build

The cloud is not the pinnacle of success for organizations where every workload in the organization needs to be hosted in the cloud, but rather the cloud should be seen as just one additional option the organization can choose to select in their I.T. fulfillment plans. As early adopters to the cloud found, just because cloud services were available early on didn't mean they were reliable enough for the organization, feature rich enough to meet the daily needs of employees, or economical enough to make sense for the organization. With proper strategy planning and a good understanding of the needs of the business, an organization can better determine whether cloud services should be bought on a consumption basis, or whether the organization should build capacity as it has done so for years.

By focusing on what is best to fulfill the needs of users, the decision to buy versus build capacity makes more sense. If users need to spin up virtual machines at a rate of dozens or hundreds a day, it may very well be cheaper to build a series of traditional server farms to manage the demand in capacity that to buy services from a cloud provider. However if an organization's development department requires system capacity for sporadic use, and the systems can be shut down when not in use, the organization can leverage the "agility" of the cloud by buying limited services on demand as needed and pay for those services as used.

A new thing organizations also need to add to their thinking about the cloud is whether an all or nothing approach makes sense when making buy versus build decisions. If 80% of the users can move their development to cloud services, yet for 20% of the users it makes more sense to use in-house development resources, the organization doesn't need to have just a single strategy. Having this flexibility in thinking can allow the organization to best optimize cloud benefits, potentially even a hybrid approach, that makes the most sense for the organization.

Conversely though, if the organization uses the removal of on premise resources as a deciding factor for cost cutting, yet the organization chooses a "hybrid model" where it remains both on premise and consumes services from the cloud, the organization may find that the decrease in cost it was expecting is not as low as projected, and actually may increase if a hybrid model is chosen. If the organization has to continue to buy and manage servers, licenses, and other resources to retain a "footprint" on premise, the cost associated with the on premise resources plus the monthly cost of the cloud resources might increase the overall cost of services.

It's a mathematical calculation that is best done with facts, not with gut feel. Too many I.T. personnel quickly dismiss one model versus another without quantifying what it means to be in one model versus the other for

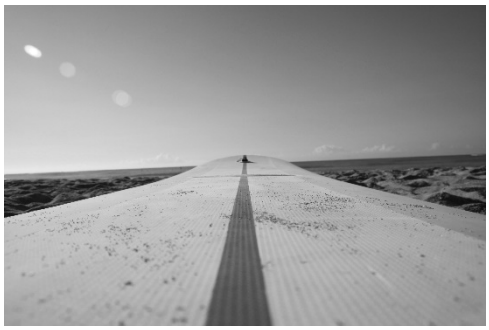
operations. Take email for example, if the organization has 8 email servers today, but chooses to do a split hybrid model where some users will remain on premise and everyone else will be migrated to the cloud, while the organization will still have to pay for the cost of on premise resources, if the organization goes from managing and supporting 8 systems across 3 continents for 4000 users to having 3500 users in the cloud and paying monthly for those users, and drop on premise services down to just 1 system in 1 location, there most certainly is a decrease in maintenance and operational cost of on premise services. While it would likely be cheaper to move everyone to the cloud, there is likely a cost savings by moving most users to the cloud, and hosting just a single on premise system. Do the math to determine the true cost of build versus buy for the organization in decision making.

Optimizing Supply to Demands

As the organization best understands what its employees do, what employees in best run organizations do, and then do some number crunching on various models for build versus buy, the organization can optimize supply to demand. The organization definitely wants to minimize its over purchase of supply if it doesn't use the capacity purchased, and the organization can be more efficient by monitoring and managing user capacity demand and usage, and change practices that can help the organization best optimize costs.

Thought Provoking Questions

- Do you agree that cloud hosted environments change the planning process such that planning is no longer focused heavily on infrastructure architecture, but rather on the suitability of meeting end user needs?
- Do you agree that cloud hosted environments change Plan, Build, Run to a different model as hosted services typically eliminates the need to Build infrastructure as in on premise environments?
- Has your technology solution decision making shifted from a product comparison model to a buy vs build assessment model?
- Are the decision makers of technology solutions in your environment versed in financial modeling where they can conduct assessments that extend to include supply, demand, and marginal cost analysis?
- Are technology solution decisions inclusive of what the end users in the organizations do day in and day out, and selected based on what solutions best drive the success of individuals in the organization?



6 IDENTIFYING BUSINESS INITIATIVES AND STRATEGIES

The big shift in I.T. thinking is the shift from what makes systems and software run reliably and securely, to the thinking of how I.T. can be a contributor to the success of the organization. For years, I.T. has been categorized as an expense and seen as an operational tool in organizations, no different than the cost of rent and facilities maintenance. Unlike rent and facilities maintenance, I.T. costs have doubled and tripled over a short period of time.

However, I.T. has also typically been reactive to business strategy when something in the business happens, I.T. comes in and to fulfill the operational need. I.T. however, can be an enabler of success for organizations; helping them to become more strategic

Understanding the Business Outside the Walls of the Datacenter

The way successful CIOs have turned I.T. into a business enabler has been to shift the role of I.T. planning and strategy directly into the business of the organization. They have moved away from operating solely within the datacenter and making sure things within the are "operating properly", to actually reaching into business units, understanding how the units run, and providing tools and solutions that help the employees of the business become more effective.

What has changed the perspective of many in I.T. has been how users

have "gone around" I.T; for example, successfully signing up for and using cloud based and non-I.T. provided services to do their jobs more effectively. I.T. departments have found sales personnel and engineering resources storing client files, client documents and design documents in cloud services like Box.net and DropBox. I.T has also found Marketing departments setting up their own Yammer and Chatter accounts and business development teams setting up their own Salesforce.com accounts.

The cloud service providers made it easy for the user to sign up themselves and to get started with free trials, while the cloud-based tools were regularly updated and upgraded with additional functionality.

What Drives our Business Success?

What I.T. needs to understand is; which features and functions its' users are using or want to use in these cloud services and how these external I.T. services improve how employees get their jobs done, ultimately helping users better manage the tools and resources available to them. Some I.T. organizations are blocking access to external tools due to security concerns. When employees put confidential client and business information in cloud services without insight into file security management or the process of removing employee access to files and content when they leave the company, there concerns are validated.

However. rather than preventing users from using the services, I.T. can better understand what users are getting out of their tools, how the tools are improving their business success and then implement security solutions and practices that help protect the organization. This way they can fulfill on the responsibilities around data protection, employee privacy, and intellectual property management.

Knowing our Users, Knowing our Customers

Organizations that already have users using external cloud technologies, are actually providing I.T. with a good view into what the users do with information and tools, and how internal users and customers are working together. In lieu of having existing scenarios about users and customers, a good role for the organization is that of a business analyst. Business Analysts interview users, follow employees at the customer site, gets to understand the business, and also get to understand the customers of the business.

This business analyst can then relate how technology in the organization is (or is not) supporting the employees and customers of the organization. It's the proper mapping of technology and the services available in technology that meet the needs of users and customers, that becomes key to I.T.'s ability to customize and craft technology solutions that help the business succeed!

Getting Real Time Feedback

What many organizations lack is real-time feedback on whether or not what the company provides is helpful to its users. As much as the business analyst learns the business, how its employees do their jobs and how the customers of the organization interact with the business, the key is to make sure the systems and processes put in place actually help employees become more effective at what they do, ultimately creating a benefit for the organization.

The feedback mechanism that many in Corporate I.T. don't understand quite yet, is "Social Media". When posed with the question whether an organization has an Enterprise Social Network and is leveraging social media, most in I.T. not only say they do not have a social media strategy in place, but they don't understand how it can help the business.

When we talk about social media, everyone likens it to Facebook, for the business and Twitter, for the enterprise. This doesn't help the organization relate Facebook or Twitter to being good for communications inside of a business. Back to the feedback mechanism, when a picture of say, the Golden Gate Bridge, is posted on Facebook, friends of that poster immediately knows where the person was and what they were doing. When an individual posts a political commentary on their Facebook page and their friends share their like or dislike of the topic, the person gets immediate feedback on how those associated with the person, feel about what has been shared.

Take this feedback mechanism into the enterprise, like implementing something like Yammer in the organization. The marketing department can post a picture of an upcoming marketing campaign and look to get feedback from employees on what they think. Employees can critique the planned campaign, get input on whether pictures from the planned ads might be too risqué, or controversial, or inappropriate, all through the internal social enterprise network feedback mechanism. The organization knows darn well that once the ad campaign hits the public, that the public social media engines, like Twitter and Instagram, will be filled with good and bad feedback. So rather than going straight to market, the organization can leverage feedback from its internal employee base first.

Similarly, instead of waiting until the last minute to share company strategy information with employees, the management team of an organization can have executives socialize strategy ideas with employees via the organization's social network system . If anything, the executives are giving employees an initial "heads up" that something is about to happen. Employees will be better looped in, and can more quickly ask questions and gain feedback on things, effectively giving the employee more of a say on what's going on, or at least hear directly from the executives of the

organization and potentially have a Q&A to address queries in real time.

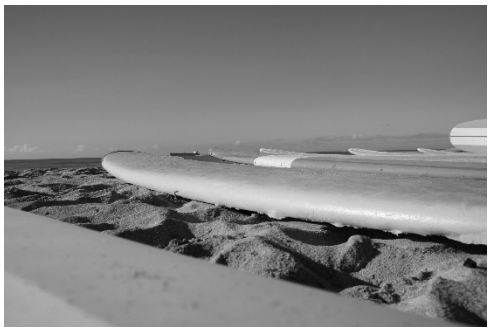
Transparency in Communications Leads to Clarity

Real time communications, the ability for employees to get information and receive responses back immediately improves the transparency in communications throughout the enterprise. The simple transparency of communications and employees feeling "looped in" to what's going on, leads to higher employee satisfaction with the employee feeling like they can trust their management. The decisions of the organization have had employee input and employees can provide feedback to what's going on within their organizations.

The enterprise social networks and tools like them that users have been using in their personal interactions for a while now, and potentially may even be using external cloud resources for business tools, are important for I.T. to understand that the tools exist. It's important for I.T. to determine how they can provide similar services or simply get their arms around the tools in use, to maintain data privacy and confidentiality, or the responsibilities of the organization.

Thought Provoking Questions

- Do you have a clear list of business success criteria that drives I.T. decision making, or are decisions based primarily on technology functionality?
- Is the success criteria in technology implementations judged heavily on "the technology working" or "minimal interruption to users" as opposed to a measurement of how the technology is measurably improving business and operational effectiveness?
- Are you leveraging Enterprise Social Network technologies as an open communications mechanism to gain feedback from users of the enterprise?
- Is there a quantifiable metric that calculates the success of a technology solution directly to increase business revenues, decrease in business operational costs, or measurable effectiveness of employee productivity?



7 ALIGNING BUSINESS NEEDS WITH I.T. FULFILLMENT

As I.T. begins to better understand the overall strategy of the organization, as well as it starts to better understand how individuals within the organization function to do their jobs day in and day out, I.T. can then align its technology initiatives to better fulfill the needs of the business.

Mapping Technologies Directly to Business Needs

I.T. has focused the tools of the business to basic functions like email, word processing, general Web access and line of business applications. However those are just the basic tools that users need and the challenge has been that I.T. has been listening to their vendors and seeing what their vendor bundle within the licensing agreement rather than listening to the employees of the company to better understand what the users truly need to get their jobs done.

The proliferation of cloud-based tools has actually helped I.T. better understand the needs of its user base by seeing what tools and solutions (like DropBox, Salesforce, Google docs, SkyDrive, etc.) departments are using. It's not that every department is using the exact same tool, but there are similarities between the tools in use. So while one department might be using Box.net to store files and another department in the organization is using DropBox and another department is using SkyDrive, effectively the users across the enterprise are using some form of file storage and file sharing solution. And likely, after interviewing users and seeing what they use the

cloud storage for, I.T. typically finds users are looking for a repository that they can access content from any of their devices (PCs, Macs, iPads, Android phones, etc.) and from anywhere (office, home, while traveling, etc.). Additionally, they can selectively share content with others outside of the organization. This basic universal file storage and sharing functionality has not been easy with traditional corporate enterprise tools. Traditional file systems were not accessible from outside the organization unless the user VPN'd into the network. Most corporate file systems did not provide the ability to share content with users outside of the organization and many corporate file sharing solutions might work great with a Windows-based PC, but had limited support for Macs, iPads, and mobile phones. So by understanding what users are using and doing, the technology that I.T. needs to identify and embrace in its I.T. services has to fulfill on these types of requirements demanded by its user base.

Sorting Needs to the Importance in Business Success

Just like with any list of needs, the key is to sort the needs and prioritize them so that I.T. can focus on the most important business solutions first. Of course the huge concern for I.T. organizations right now is the fact that there are a lot of these external cloud-based services where sensitive business documents are stored, without any security oversight, so the organization wants to move quickly to lock down content and protect information as quickly as possible. However rather than blocking access and preventing access to external information, the organization can sort business user needs into importance around business success, and then I.T. can get its arms around the technology solution needs in proper order.

Sorting Needs to the Fundamentals of Business Operations

The fundamentals of business operation are typically help the organization meet its business goals. In many organizations, it's the things that help increase revenues that contribute directly to business profitability. When properly implemented and supported, those tools can hopefully help contribute to the success of the organization. From a technology standpoint, it might be tools that help sales individuals better target customer needs, which might be a client relationship management tool, or data analysis tools that crunches and processes data. Or it could be public awareness tools that help individuals within an organization better communicate with the organization's customers, that are of most benefit to the organization.

For many organizations, e-mail is a fundamental business tool, as users may use email to communicate with customers. Others may find transaction processing tools like ERP tools as mission critical for the business in terms of accepting and processing orders for shipment. Every organization has

fundamental business needs that are supported by technology, and those tools that have the most impact on the success of the business are the ones that are typically prioritized for fulfillment in I.T.'s strategy implementation roadmap.

Reconciling Needs and Establishing I.T. Priorities

Reconciling needs may sound very similar to sorting fundamental business needs and priorities, but the focus here is I.T. priorities. There may be conflicting priorities that need to be addressed, and those may need to be rolled up to management to prioritize what is deemed most important to the organization. One example is an outward facing client solution that may drive sales up, however at the same time a security concern like customer and confidential legal information stored unprotected in external cloud storage services may need to be addressed promptly as well. Effectively one priority can improve business revenues, whereas another priority addresses data leakage due to lack of security controls.

In cases where there are conflicting business priorities, a business decision needs to be made to determine what the organization will prioritize . Many times, leveraging contract resources can allow an organization to do two or more things at the same time. Alternatively, the organization can do a risk assessment and while protecting confidential information is extremely important, if the data has been hosted externally at a cloud provider for the past 2 years, then what's another few more weeks to get around to tightening down the security on the external content. There are pros and cons, and establishing I.T. priorities can address the timing and fulfillment of execution on I.T. initiatives within the enterprise.

I.T.'s Success is Measured on Business Success

What we've seen over the past couple years is a shift in the measurement of whether I.T. is successful or not. In the past, I.T. measured its success typically by its attainment of some measurement of service level reliability of I.T. systems. If the organization's goal is 99.9% uptime, then the organization drives to that measurement and says it is successful because systems were always operational.

However the more recent measurements of I.T. success have been based on the success of the business. When I.T. can associate increases in profitability with the introduction of a key sales tool or data analysis tool that helped the organization be more effective selling, then I.T. can show measurable contribution to the success of the organization. Or I.T. can directly translate the lowering of costs in the organization, like the decrease in long distance phone call bills, or the reduction in travel costs through the introduction of Web Conferencing or Web-based telephony solutions. The

Web-based solution can better support users to communicate over existing data connections rather than using phone line services that charge per minute.

When the organization has the opportunity to grow and expand and to do so without direct linear increases in costs, this becomes a win for the I.T. department, if its services were key to that measurement of success within the business.

Focusing on Business Results, not Operational Capacity

Lastly, another metric for measurement is the shift from measuring I.T.'s value in terms of meeting operational capacity - shifting to measuring I.T.'s ability to directly address business results. If employees of an organization can communicate effectively with their clients using fewer travel days going to go and meet clients in person: not only are there direct savings in travel costs, but the employee can be spending the time normally consumed by travel to be communicating with other clients and helping expand the business.

The shift to cloud-based services with elastic capacity eliminates the need for the I.T. department to track and manage operational capacity. Instead, I.T. can now focus its time and effort on adding additional services, providing better methods of communications, and directly focusing the efforts of the business to grow and expand its services to the community.

Thought Provoking Questions

- Are I.T.'s technology implementation priorities focused on upgrading technologies and adding capacity or directly correlated to the business priorities?
- Is there a comparative matrix in your organization that maps technologies directly to business needs, and how the technology solution improves employee effectiveness?
- Is there a clear list of business priorities that I.T. is well aware of that drives I.T. initiatives?
- Is there a quantifiable measurement for how the next 12-36 months of I.T. initiatives will contribute to the success of the business?

8 SUPPLYING THE ORGANIZATION WITH SOLUTIONS AND SERVICES

As described in earlier chapters, for I.T. in the new world environment, the goal is no longer to just "keep the lights on" and ensure I.T. systems are working properly and successfully. Rather, I.T.'s role shifts to supplying the organization with technology solutions that will help the organization advance its initiatives, help employees in the organization be more proactive and technically more effective in what they do, and ultimately meet the service demands that fuel the technology operations of the business.

Every Organizations Needs the Basics

Just like plumbing, I.T. should just work, and for those who have been in the technology industry for a long time, there's a bias to thinking that it takes a lot of care and feeding "to" keep I.T. systems operational. However, technology systems today are a lot more reliable than they were a decade ago and even more than two decades ago. Gone are the days when hard drives failed every day, RAM chips caused parity errors and system faults, and operating systems "blue screened", causing servers to stop working.

Additionally, technologies today provide replication of core application data between servers (aka clustering and mirroring), as well as replication between sites. In the event of a primary system failure, a secondary system is available to pick up where the primary system left off and in the event of a primary site failure, a secondary site can be brought online.

As systems have gotten more reliable and secondary and tertiary systems

have become available for redundancy, the thinking behind system redundancy, fault tolerance, and site replication HAS to be rethought. I.T. management has to step back and think about the basics and not simply buy what their vendors are telling them they need to buy. I always use the example of the disk storage industry and why storage is so expensive today.

So why is it that you can run down to your local computer electronics store and pick up a 1-terabyte hard drive for $60, yet the cost of storage for an enterprise exceeds $4000 per useable terabyte? The answer lies in too much redundancy. Here's how an average enterprise pays an excessive premium for storage: the storage chassis (typically a Storage Area Network chassis) is filled with "industrial enterprise grade hard drives", which instead of $60/TB, run $250/TB, because they are "better drives". Those more expensive drives are put into a storage chassis that has redundancy built in, usually in some form of RAID storage with online spare that increases the cost per terabyte to about $400 by the time additional drives are added. The chassis itself and the brand name for the storage vendor raises that cost now to about $700 per terabyte. Organizations replicate the storage chassis in a local datacenter so that in the event that 1 chassis fails, there's another local chassis with the data on it. This brings the cost now to $1750 for each terabyte of storage as the double the cost of the chassis plus the cost of the special software to replicate the chassis within the datacenter. Then the organization buys a 3rd chassis and puts it in a remote datacenter, which now brings the cost to $3000 for the terabyte of storage by the time the $700 per terabyte chassis and the special software needed is put in the remote datacenter. Add in professional services costs to implement the special chassis systems and that $60 per terabyte storage now costs $3500-$4000 per usable terabyte.

Of course there are ways to execute this level of storage replication for less than $4000 per usable terabyte, and with special vendor discounts, the pricing might get down to maybe $2500 per usable terabyte. But the whole purpose of this example is to show how organizations every day pay a lot of money for technology systems and devices without stopping to think whether the expenditure is truly necessary.

What if the organization simply took the cheap $60 terabyte drive and organized 3 of them locally and 1 of them remotely? That $240 cost for a usable terabyte of storage will have 4 redundant copies, which is way more than an organization needs. And true, the $60 drives are not the super fancy special industrial grade drives, but isn't that why you bought 3 or 4 of them anyway, to protect against failure of any drive or drives?

Outside of just storage, does each server need redundant power supplies inside the chassis and redundant system backplanes when you are replicating all of the information in each of those chassis to another overly redundant server chassis?

The hosted cloud providers are able to provide I.T. services cheaper than most internal I.T. enterprises because they are building their datacenters with redundancy to meet a 99.9% or high level of uptime, and not going overboard on excessive redundancy because of a "for profit" operation, the hosted services providers are driven to optimize cost, which is exactly what an efficient internal corporate I.T. datacenter should be driven by as well.

Every organization needs the basics. Internal I.T. either needs to design their datacenters with cost and operational efficiencies in mind or internal I.T. will HAVE to outsource hosted services to the external providers because internal I.T. just can be as cost efficient as another provider.

Security Should be Built-in, not an Afterthought, but Also Not a Hindrance

Security is important, but having a security department call the shots on every I.T. initiative is like having a traffic cop or National Transportation Security Board (NTSB) safety officer in the side seat of your car with the ability to apply the brake and turn the car every time you are out driving.

I'm a big proponent of security, I was the Internet Security Advisor to the White House and had my foot hovering over the brake pedal to throttle security policies for the United States of America, however security can be applied without micro-managing the fluidity and success of an enterprise.

Security can be built into I.T. systems ensuring; privacy, data protection, and system controls throughout all facets of an I.T. operation. Security should be driven by specific policies, goals, and initiatives clearly defined by the business. It's similar to the redundancy comment made in the last section of this chapter; there comes a point where too much of a good thing ends up just being too much.

As the organization defines the security requirements that it must have and ensures each and every system has those security requirements as part of systems and services, the organization meets its initial required security expectations. Additional levels of security can be applied, but should be done so with full awareness by management that additional "nice to have security" will come at a specific cost to the organization than simply leaving it to a security officer to "do his job" in protecting the business at any and all cost.

What we've seen over the past few years is that organizations with extremely tight security, without a lot of business justification for that level of security, have just driven employees to work around the system. Organizations where employees are prevented from getting their jobs done because of "security policies" may not be realizing their employees are using external cloud services to share files, collaborate with others and outside individuals with absolutely no oversight for security controls of information. In the end, what type of security does the organization have when key

business content is now completely stored outside of the enterprise without security department control?

The best security needs to be a valid compromise that protects the organization in a manner justified by the enterprise, yet encompasses ALL aspects of the business so that users don't simply go around I.T. and create massive security breaches in the organization.

Supply is Provided to Meet Demand

The most efficient expenditure in I.T. is when supply is provided to meet the reasonable demands of users, and not that demand solely driving supply. As stated previously in the book, if resources are free and there's no penalty to consume unlimited resources by users, the demand for services could be abused creating artificial demand and driving supply costs up.

Demand should be normalized, and those who exceed the norm for demand should be addressed to ensure the individual is aware of normal usage so they can do their part to conserve resource demands if possible. No doubt there will always be exceptions, but exceptions made with full awareness are better than exceptions made without any evaluation of the cause and requirements.

Supply is Not Always a Services Driven Input

Organizations can build their own supply by building systems in-house to meet business demands or the organization can buy capacity from cloud providers to meet the demands of the organization. What is preferred is for organizations to consider both in-house supply AND hosted cloud services as resources at their disposal.

If going back to the original premise of the cloud where the cloud is elastic and can be used and bursted to when demand requires, yet scales back when demand is not needed, THAT is the best model for build versus buy capacity usage. When an organization's network is "stretched" to include cloud resources, an organization can build a certain amount of capacity on premise to meet the normal needs of the organization, but if demand dictates, the organization can burst to cloud resources or spillover to cloud capacity to ensure service level response times are met, yet resource overage is paid for as consumed in the cloud.

Is Just in Time (JI.T.) Fulfillment Still Valid in Enterprises?

In the 1980s and 1990s, Just in Time (JI.T.) fulfillment was a big topic in production manufacturing. Rather than building product and stocking them for consumption that may lead to overstocking if demand doesn't meet supply, JI.T. suggested organizations fulfill on demand when the demand is needed.

JI.T. has rarely been a topic of consideration in the field of I.T. operations as organizations typically build as much, if not more capacity, than the organization needs because if the capacity wasn't there, performance would suffer. So while there might be a small chance that access time to data is slightly delayed, organizations have just gotten into the habit of buying and building excess capacity so that demand, even at peak periods, could be fulfilled without delay or degradation of performance.

The cloud, however, can be leveraged as a burstable resource. Instead of buying and utilizing excess file storage capacity on premise as an example, the organization can buy the storage capacity it thinks it needs, and if storage demands exceed the organization's capacity, the organization can leverage capacity in the cloud. This cloud-based overflow can be used to offload old content from on premise resources to the cloud resources, thus opening up capacity on premise based on available local storage space.

As organizations migrate their email to cloud providers now instead of having excess servers with excess storage capacity available on premise to account for normal growth, or even the potential of a business acquisition with email in the cloud, it's no longer a requirement of the business to buy and hold excess capacity. With a simple phone call or usually a Web portal logon, an organization can spin up a dozen, several dozen, or even thousands of mailboxes in a moment's notice in the cloud. THIS level of agility provides on demand growth with NO acquisition of excess capacity by the enterprise.

Measuring Success by Managing Supply to Meet Demand

As a measurement of success for the organization, now the key factor is measuring that the organization has successfully met demand by simply having the right amount of supply of resources. And even if the organization requires more supply, simply logging on and buying more capacity in terms of email boxes or cloud storage can within moments, fulfill on unexpected demand requirements.

THIS is how I.T. is changing, as organizations shift their thinking from buy and build capacity, to an identify and supply model.

Thought Provoking Questions

- Does your organization have a quantified metric what a minute of downtime directly means to the organization based on each core business application?
- Are I.T. service level commitments determined by a clear comparative measurable cost, or by a generic 99.99% or "zero downtime" goal?
- Are decisions about I.T. security balanced with business and I.T. requirements in mind, or are security decisions made to protect the organization at relatively any and all costs?
- When costing a solution, is "zero downtime at relatively any cost" the defacto expectation? Even if this means having 6 times or 8 times the redundancy when the organization could save a considerable cost in I.T. by better sizing the solution with a lower cost alternative that still meets the organization's service level agreement?

Part III:
People, Process, and Technology of the New World

9 TECHNOLOGY AS A TOOL, NOT THE SOLUTION

Here in Chapter 9, we've by now, made it clear that the implementation of technology for the sake of implementing technology, is no longer the end-all goal and factor for success of the enterprise. Technology is simply a tool to assist an organization in achieving success in the organization's main line of business, much like a hammer and drill are tools to building cabinets and structures.

Tools in the Tool belt

The tools in the tool belt of the new world of I.T. have been vastly expanded now with the proliferation of cloud-based providers. Instead of solely depending on an on premise server product to be developed and released, I.T. professionals have options that include cloud-hosted versions of business solutions.

But the tools aren't just tools on premise and in the cloud, there are also tools that are available from specialty organizations versus tools that might be included within the licensing agreement of other products an organization may own. In the past, organizations did not focus heavily on what they already owned and commonly went out and bought and implemented what was deemed the "best of breed" in the industry on a specific product, by product basis. However, as organizations seek to minimize I.T. expenditures, insight into what an organization already owns licenses for have now become a priority in the evaluation process for needed solutions, before the

organization goes out and shops for something else.

I.T. departments have many choices to make these days and are not locked into choosing and buying one technology versus another. This flexibility in decision making allows the technology purchaser to make choices that may make the best sense for the organization.

Put it in the Cloud or Build it On-premise?

A big decision that I.T. decision makers have to decide on is whether they want a technology solution on premise or in the cloud. It used to be that an on premise solution was more feature rich and robust, however within the past couple years, offerings in the cloud now are actually more feature rich and more frequently upgraded and updated than solutions commonly available on premise.

In fact, many software development companies that provide both on premise solutions and cloud-based solutions actually deploy new versions in their cloud environment before they make the new features available to on premise customers. The vendors use their own hosted cloud environment to thoroughly test their new offerings and being that the cloud providers control their cloud environment, they can roll-in upgrades and updates every few months, making it a rotating door for new features and functions.

So the real decision for organizations, relative to on premise or the cloud, is which environment makes the most sense for the consumption of the service for the enterprise. If a solution is highly strategic, customized specific to the business, and everyone is in a single location, the organization may choose to just setup and host the solution on premise. However, if a solution is a commodity solution and users are distributed worldwide, the organization may be better off choosing a hosted version of the solution.

Again, there is no default answer to "put everything in the cloud because that's the way the industry is going" as opposed to making the decision of putting an application on premise versus in the cloud based on what makes the most sense for the organization in terms of functionality, cost, and I.T. strategy.

Integrated, or Integration?

A bigger decision for an organization beyond placing an application on premise versus the cloud is whether the organization purchases a standalone solution and integrates the solution into the rest of the environment, or utilizes a feature or function that is already integrated into what the organization already owns and has implemented. There may be an advantage buying a 3rd party solution and spending the time integrating it with everything else. The decision to acquire a 3rd party solution may be specific to core business functions that are required by the business that the integrated

solution does not provide the same functionality.

However what is important is to clearly define what is most important in application functionality for the organization, and then assess what you already own to determine if what you own will meet your business needs. It would be silly to buy and implement a 3rd party solution only to find out that your existing vendor has the same functionality built-in or even has the functionality due out in a couple months in a pending update.

Again, the goal is to gain the functionality desired at the lowest cost and effort of implementation and integration, and if the functionality will be available in a few short months, it may be best for the organization to just wait.

The integration of a technology into an environment is one of the major costs in purchasing and implementing technologies. As much of the integration of a product starts with the initial implementation, every time a new version of the product comes out, or a new version of a product that integrates with the 3rd party solution comes out, more testing and integration time is required. This is what hinders enterprises from evolving their technology solution offerings as the organization has to wait until all of the dependencies in their systems upgrades (including plug-ins and integration components) are all available to be upgraded and updated. The fewer integration components, the more nimble an organization can be in coming up with what they need, when they need it, and without delays.

Even if it's Better, Will that Make the Business Better Overall?

A challenge that I.T. decision makers have is when a 3rd party product is better and what the organization already owns or is part of an existing license agreement doesn't fit the current needs of the organization. So the question is whether the "better" solution can really be better, overall?

Could the organization "live" with an inferior product for a while and then wait for a pending future upgrade to ultimately meet the needs of the organization, or is it important enough for the organization to go out now and buy the 3rd party solution.

The I.T. decision maker needs to step back and assess whether the organization as a whole is better off with a more expensive, or more complex, or more feature rich product than what is already licensed and/or implemented. Just because another solution might have more features, does your organization truly need the new features? Will users actually use the added features? Is it worthwhile waiting and/or paying extra for the functionality available?

These are the decisions that need to be made with facts in hand, not based on feature / function shoot outs. If there's a justifying purchase decision for

the acquisition of another solution, it should make financial , business and operational sense.

A Strategy Doesn't Have to be Done All in One Year

As organizations develop their I.T. strategy, what's important to remember is that the strategy does not have to all be done in a year. By prioritizing business requirements and I.T. strategy decision making requirements, an organization can create 12, 18, 24, or 36thmonth I.T. strategy plans.

By having an 18-month or longer plan, an organization can see how a vendor handles upgrades and updates, whether a solution is evolving as expected, or the product truly provides better business reasons to make the purchase and acquisition.

Follow Your Business led I.T. Strategy Plan, not the I.T. Vendor's Roadmap

Keeping true to the organizations business I.T. strategy is important. I.T. vendors tend to release new features and functions every few months and organizations feel compelled to upgrade or implement a solution just because it looks great or is free and included in the organization's license agreement.

But with a little discipline, the I.T. decision makers can step back and focus on what is right for the business, and minimize distractions of what the vendor pitches as "new and greater". A vendor roadmap discussion is best had after business analysts in the organization have assessed what the organization needs, and the organization has prioritized its I.T. initiatives. With the business in mind, the organization can choose whether an upgrade makes sense based primarily on whether the solution directly addresses a core business goal and/or initiative.

Thought Provoking Questions

- When selecting a technology solution, are cloud-based offerings or on premise solutions prioritized one over another as "better" or "preferred" by the organization, or are specific business criteria used to drive the selection of the appropriate technology solution for the business?
- When selecting a technology solution, are integration costs along with ongoing maintenance, support, and operational costs over a pre-defined period (i.e.: 3-yrs, 5-yrs) taken in account in the cost analysis of the solution?
- Are technology solutions upgraded because a new version is available or a vendor is forcing an upgrade, or because the organization truly will benefit from the upgraded solution?

- Is there an 18-month, 24-month, 36-month plan for I.T. initiatives, and is the plan updated every 3-6 months to meet the ongoing evolution of technologies?

10 KNOWLEDGE AND EXPERTISE IS NO LONGER JUST IN THE DATACENTER

One of the factors in the shift to the new world of I.T. that goes beyond the evolution of technologies and the proliferation of cloud services focuses simply on a better digitally skilled workforce. All things tech related are no longer solely a realm for techies. Two decades ago, the average office worker had limited computer experience and had to be trained to use a piece of software, and systems were built and configured to simplify the learning experience. However with a tech savvy workforce with new entrants to the workforce that know nothing but a world filled with computers, search engines, and the Internet along with a senior workforce that has been using systems daily for the past decade or more, knowledge and experience of technology is no longer just in the datacenter.

The Knowledgeable Workforce

Those entering the workforce today are a whole generation of individuals who were born and raised at a time when the Internet was pervasive throughout their lives. These individuals know how to work an online search engine better than they would know what to do in a library with a card catalog. They've had no fewer than two mobile devices they've setup and configured on their own, and downloading and figuring out "apps" is old hat for them.

And not just the entering workforce, but also the millennials that entered the workforce in the past decade, and the Gen-Y's and Gen-X'ers that have

also spent more of their time on computers and the Internet than with typewriters, books, pen and paper, are just as tech savvy. With a more tech savvy workforce, the idea that the datacenter and anything "systems related" is exclusive to the I.T. staff has drastically changed as tech knowledge and expertise has clearly distributed to the masses.

The current workforce, young and old, is not afraid of new tech tools, new digital ways of doing things, and in fact they embrace the integration of technology into their day-to-day work efforts as they typically have better tools and better technology now at home or in their pockets than they're provided at the office.

Social media is a communications medium that a good portion of this new workforce has personally used in their distribution of information to a personal network of distributed users. The reading of printed newsletters, newspapers, and lengthy emails has given way to a world of short SMS text messages, 130-character Twitter feeds, shared photos with 1 line captions, and simple likes, dislikes, and emoticons.

Empower, not Impede

With a more tech savvy workforce, I.T. needs to empower the workforce with tools and resources that help the workers be more effective in their jobs. I.T. needs to stop "locking down systems" intended to prevent workers from accidentally breaking their systems, to making systems and processes more open to new and innovative ways of getting the job done.

The workforce installs apps, configures apps, replaces their devices and reinstalls their apps on a regular basis on their own personal phones and tablets, so they don't necessarily need a fully configured system with the exact same icons in the exact same spot to figure out how to use their systems at the office. Granted, there are many organizations where there are a handful of users that require handholding, and many times those that need the most handholding are the most vocal. However understand the entire workforce, and if 20% of the workforce needs help, no need to build monolithic processes across the entire environment to support a smaller and smaller portion of those needing extra assistance.

Organizations that are able to empower their workforce to do more and to push the limits of the technology in front of them are providing their workforce with the ability to be more effective at what they do. We've called it "worker productivity" in years past and used to relate it to the increase in productivity of using a word processor to write and edit documents rather than a typewriter, or the use of email to send communications to many people than writing memos, photocopying the memos, and manually distributing the memos to users. But in this day and age, worker productivity can be enhanced by allowing the worker to use digital tools and communications mechanisms that help them be more effective at getting messages across,

sharing information, and collaborating with co-workers.

We know darn well if we don't give the workers tools they can use, they'll just sign-up for a cloud-based service on their own and use tools outside of the organization to do what they feel is best for getting their job done. So I.T. either embraces the tools and technologies the current workforce wants to leverage, or I.T. spends its time trying to prevent users from using tools and blocking productivity.

Focus Less on the Device, and More on the Applications

Another drastic change in the I.T. industry is the movement away from managing the device, and more focus on providing applications to users. For the past decade, I.T. has provided users a device typically with Microsoft Windows loaded on it pre-configured with all of the applications the user needed. The device was locked down and tightly managed.

However as the typical user has 3 or 4 devices these days (mobile phone, tablet, laptop, office computer) of which many of these devices are not even owned and managed by the organization, does focusing on managing the device still make sense? The fact that the work needs access to email, do we really care whether the email is on one version of mail software on one device, versus on another email software program on another device?

As long as the user has access to their email, contacts, calendar appointments, and important documents, and the user doesn't care that the interface from one device is different than another, why would I.T. care about the consistency of the application or the device. A more tech savvy user doesn't need their email program on three different devices to look exactly the same, they're fine using multiple tools as long as they have access to their information at anytime from anywhere. What I.T. does care about is that if the employee leaves the organization, that the data is protected or potentially wiped off the devices, so it's about the data, not necessarily about the device or user interface.

Protecting Data, Not the Device

As organizations focus on what is most important to it, the focus is around the security of data. A device, a device's operating system, and the applications on a device are not the critical aspect for control. It's about protecting the data, ensuring that information deemed private or confidential is protected, or information is removed when an employee parts from the organization. So the focus is on the data and how to control access to the data.

A very simple concept is to encrypt the data on the device and tie the encryption to the user's logon account. The only way to access the data is to enter in an appropriate "corporate logon" credential to unencrypt the

content. If someone else gains access to the system, unless they have the credential information, they cannot unencrypt the content. If the individual is terminated from the organization, their logon credentials are disabled so that even if they still have the encrypted content sitting on a thumb drive, tablet, phone, or up in a cloud hosted file system, without a valid logon, they cannot enter the credentials needed to unencrypt the content they have stored.

The encryption and decryption is tied to the user's logon, not to the device, not to the operating system, not to any specific application, thus the credentials and the encryption and decryption of content can roam between devices and works whether the content is stored on a local device or up in a cloud service. When the user gets a new device or moves to a different device, their encrypted data is moved to the new device, and their logon credentials (assuming they are still valid) will continue to decrypt and re-encrypt the content. I.T. gets out of the device management business, and can remain focused on enabling business policies and supporting users instead of chasing the never ending proliferation of devices and cloud storage mediums.

As for technologies that provide this level of functionality, since most enterprise workers logon to Microsoft Active Directory, having credentials tied to user A.D. accounts tends to be the standard in enterprise organizations. Within the Microsoft product line, Microsoft has embedded a technology they call Active Directory Rights Management Services (RMS) that provides policy-based content encryption and decryption. RMS has been available for over a decade, however was not a serious contender in enterprise data protection because for most of that decade, Microsoft only supported Windows-based systems with Office-based application protection. However in the past year or two, a whole ecosystem has emerged supporting non-Microsoft endpoints such as Macs, iPads, Android devices along with non-Microsoft files like PDF files, TIF and JPG graphic files, and MP3 and WMV media content. And with RMS included as part of the Enterprise Client Access License (ECAL), most enterprises actually already own this technology and simply need to enable the encryption and build a handful of encryption policies that enforce the protection of content within the enterprise.

Protect by Automation, Not by Brute Force

Anyone who's raised children knows there's only so much protection you can build around your children without putting them in a padded bubble, that the best a parent can do is educate their children, help them make good decisions, and make security and protection part of a day-to-day process. The same is true for the workforce, that multiple levels of automation and education can provide a better enforcement of policies and security than

putting up barriers and attempting to brute force manage the protection of data and systems.

For the past decade, I.T. organizations have built up protective walls with network firewalls, locked down systems, and protection devices on everything within the datacenter, however as users have needed an ability to share information with others outside of the organization, because the internal systems are so locked down, users have just gone around I.T. and setup their own file sharing and content collaboration sites without I.T.'s knowledge. Security assessments of these organizations typically find a very tightly managed environment along with a completely unmanaged and completely unsecure side of the operations.

As organizations loosen their security grips, provide I.T. supported methods of sharing information and communicating, both internally and externally, with automation tools that automatically encrypt secured content, with a little end user education, these organizations have better overall security in the enterprise.

Taking the model of protecting and encrypting data, organizations that set filters on data stores, filters on email transports, and filters on upload and download streams, can automatically intercept content and encrypt content in transit as well as at rest. Rather than depending on the user to think about encrypting content, content is automatically categorized, encrypted, and tied to user's credentials. As documents and messages are then moved to other devices, stored in external file sharing sites, or copied to USB thumb drives, the information is encrypted and can only be opened by authorized individuals in the organization. If the content is shared with someone, that recipient must be given explicit access to the content by the document owner. If the content is accidentally saved in a public site or a device is stolen, the only individuals that can decrypt the content are those with authorized credentials. If the individual is terminated, their access to any and all information is disabled.

So the change is from trying to state that data can only be stored on in-house protected systems that we all know the content will be attached and sent/saved anyway, to a process where the expectation is that all data will get out of the organization. Therefore, automating the categorization and encryption of the content to protect it from unauthorized access provides organizations a better method of enterprise security.

Monitor to Ensure Security Protection is Working

Even the best designed and implemented security system is prone to compromise, either through malicious access, or by accidental breach. As organizations automate systems in an attempt to simplify unwanted access to information, having the ability to monitor and test content access on a regular basis ensures that security automation is working as expected.

If the organization is automating the encryption of content and testing to ensure that content is properly being encrypted both at rest and in transit, the organization can validate that content is being protected as expected. Additionally, a process of validating that only those authorized to access content remains enforced, ensures that even if someone who is not authorized to access content cannot access the content as expected.

The organization wants to validate that information stored outside of the organization is properly protected, which would include periodic checks of secured content on employee owned devices, content stored in cloud hosted environments, content copied down to USB thumb drives, and the like.

As security shifts from protecting devices to protecting data, an organization's security personnel just has to follow the trail of data to ensure that the data the organization wants to protect is indeed being protected.

The Role of the Network Administrator

Historically, organizations have had "network administrators" who manage and control everything on the organization's network, however as the definition of the "corporate network" changes, so must the role of the all empowering network administrator. The network today expands beyond the walls of the datacenter as well as the corporate offices. Servers and systems are no longer solely racked in a datacenter, but instead, "systems" critical to the operations of the business may reside in hosted datacenters as well as entire applications run in hosted cloud environments.

The I.T. network administrator expands beyond just what the individual can touch and manage, to focusing on information that also resides outside of the organization as well. This goes back to the concept of the all-encompassing "data" that what the organization is really focused on are the applications and the data, not necessarily the systems and servers themselves. As data resides on desktops, laptops, tablets, mobile phones, and in cloud hosted provider services, the network administrator needs to expand what they manage, control, protect, and support in terms of I.T. operations.

I.T. Technologists Make Way for I.T. Enablers

As more and more users become tech savvy, and the reliance solely on the I.T. expert diminishes, the I.T. technologist needs to make way for a rising role of the I.T. enabler. The I.T. enabler may not even be in the I.T. department, but could be a marketing specialist, or a business analyst, or data analyst on the frontline of the organization. If data and core applications reside in the cloud, and the consumer of the data is working from their personal tablet from home, what role does the I.T. department's personnel play in the value it provides to that individual?

It's a far different perspective than the model of the past where the

consumer of data worked on a company owned desktop, sat within the corporate office, connected to the corporate backbone, and accessed data sitting on a corporate owner server. And if this data consumer is accessing critical business data, generating valuable reports, working up business models to drastically increase the revenues of the organization and/or save the organization a significant amount of money, that individual has an extremely strategic role in the organization.

This is the changing face of I.T. and how the distribution of knowledge and the enablement of external sources will forever change the role I.T. has in an organization.

I.T. Facilitating Supply

I.T.'s role in the new world environment shifts from the controller of information and systems, to one where I.T. facilitates supply to meet demand in a secured and automated manner. Similar to the days where the important person in the village was the one that dug the well and made the aqueducts to bring water to the city, today it's the person running the water treatment plant that watches dials and makes sure the right valves are turned on to ensure water continuously flows to meet the demands of its consumers. I.T. will play an even more important role here and into the future because when I.T. is doing their job right, the users in the organization will have access to the data they want, when they want it, from any device they're using, and the user will never have to worry whether the content is secured, protected, backed up, and properly managed. It'll take as much, if not more work and planning to make I.T. work right in the new world of I.T., but from a completely different manner of operations than in the past.

The I.T. landscape is much broader today with data on a multitude of devices and stored not only on corporate owned and managed systems, but on employee owned systems as well as content stored in the public cloud. I.T.'s role has expanded, but in the transition to the new world environment, I.T. has to do things very differently than in the past. The new model with old processes and systems won't work. There's a need for distinct changes in storage, management, protection, control, and automation that will allow I.T. to be the enabler for an enterprise and play a critical role in the overall business success of the enterprise.

Thought Provoking Questions

- Does your organization focus on managing and protecting end devices? If so, does the organization manage ALL endpoint devices, or does it selectively manage only some devices?
- Have users within the organization increased the number of devices they work from over the past 5-10 years, typically from a single device

a decade ago, to on average 3 or more devices today within your enterprise?

- Do you find users in your environment are becoming more tech savvy, thus needing less help with the basics, and more help in effectively improving how they do their jobs?
- Would your organization benefit from focusing on protecting "data" as opposed to protecting the ever growing number of endpoint devices?
- Would a focus on protecting "data" be more effective in your enterprise than chasing "devices" based on how your users access content (or need to access content) on a day to day basis?
- Do I.T. policies currently lockdown systems and users, or do I.T. policies help enable employees with technologies that improve their day-to-day responsibilities?
- Do you foresee a change in how your I.T. personnel manage the I.T. environment once data is stored both in the traditional corporate datacenter as well as distributed to various cloud-based services and a multitude of endpoint devices?

11 THE KEY TO END TO END PROCESSES

As I.T. services shift from being plan, build, and run to more of a supply and services model, the focus of I.T. services shift to process automation and ensuring that the appropriate amount of supply meets the reasonable demands of the consumer of the services.

Automation Becomes the Foundation of I.T. of the Future

As the industry shifts to include hosted services instead of solely products and the deployment of products, the ability for enterprises to automate mundane tasks becomes an important factor that helps the organization be more efficient and effective in fulfilling the needs of the enterprise. The supply of I.T. content will evolve and be similar to the supply of electricity and water to a community.

Supply and demand of I.T. content is typically referenced when talking about cloud hosted services. The same applies to internal I.T. datacenters where an I.T. organizations ability to stream content on demand to the levels reasonably requested from its users. This balance is making content available whether from a public cloud or from an internal private cloud; this is the focus of I.T. in the new world environment. If an organization is hosting email for its employees, the employees should simply access their emails from any device, from any location, and at any time.

For organizations to be a facilitator of the supply of digital content, automation in as many facets of I.T. operations is critical. The organization shouldn't have to wait for "someone" to configure a system and then

"someone else" to install software on the system and yet "some other person" to connect the system and make it available for users. The installation, configuration, and operation of a system needs to be automated to simplify the process, decrease the amount of time it takes to gain access to information, and for ongoing operations, maintenance, and management.

The technology exists and it is what the large hosted cloud providers are doing (and have to do) as they host hundreds of thousands to millions of users and their access to content. As the hosted providers automate systems and have elasticity to their growth without the high cost of labor to do each and every mundane task, the hosted providers drive down their cost per user and greatly optimize their operations. In basic economics, this is the marginal cost of operations that optimizes cost and profitability in the attainment of services. It's what every cost and efficiency conscious organization strives to achieve, and where I.T. has to head in terms of operational costs driven down to the most effective level of operations.

As I.T. organizations assess their internal I.T. operations, if they believe that automating I.T. operations to achieve an optimized marginal cost of operations is too complicated or just not applicable to the organization, then a true assessment of the efficiency of the I.T. operations needs to be conducted. If someone else can do it simpler, cheaper, and gain efficiencies from automation that other organizations cannot achieve, it is only a matter of time before a shift from inefficient I.T. services to a more efficient I.T. service environment becomes important for the organization.

It's true that some applications themselves may not be appropriate or even offered by large hosted providers, such as a proprietary application that is unique to a specific line of business operation. Rather than immediately calling an exception to the application, a business analyst assessment of the application could identify that a hosted cloud version of the application exists that is similar and can potentially be adapted for the organization's use, and thus the organization can evaluate whether a shift from an archaic internal proprietary application to a hosted application could be possible and beneficial for the organization.

Another potential outcome from an assessment might identify that while an application itself may not be available as a hosted application, the organization can leverage automation, utilizing a hosted infrastructure environment and place their proprietary application on a cloud hosted virtual guest session. This offloads part of the I.T. infrastructure needed to host a proprietary application, and may be appropriate in eliminating some or all of the required backend resources needed to facilitate an application for the organization.

As costs are marginalized to drive overall I.T. operations costs down, all facets of I.T. operations need to be assessed to determine what components can be better automated to decrease the operations, maintenance, and

support costs throughout the I.T. environment.

Supply = Demand

In the basics of economics, when supply equals demand, the equilibrium creates a more efficient environment. Automation ensures supply is increased just ahead of demand, but also critical is to ensure that supply is decreased when demand decreases. This latter part is where internal I.T. operations have not historically achieved success, as organizations internally build capacity to meet the maximum demand of the organization at the highest peak of demand. However if an organization only operates 10-hours a day, 5-days a week, the utilization period is just 50 hours during a 168 hour week. Over two-thirds of processing capacity is wasted, runs idle, yet incurs a flat line cost to the organization.

Even global organizations face capacity waste at varying times during the week as some applications are used globally, like an email systems, however many I.T. systems are localized just for a geography, even things like document file storage systems, phone systems, and collaboration tools tend to be localized with a large portion of the I.T. resource left idle and unused.

Optimized datacenters today, both hosted cloud environments as well as internal I.T. datacenters, utilize capacity management systems to increase and decrease capacity that is appropriate for the organization. As an example, if an organization plans for peak access to a database system and runs 6 backend databases and 6 frontend Web servers to host the application, rather than running all 12 systems 24x7x365, the organization shuts down 2-3 of the systems at different times during the week to better optimize capacity resources. At any time, the organization still has at least 3 frontend and 3 backend systems operational to provide capacity as needed along with high availability and fault tolerance, though with half the number of systems operating, the organization cuts back on resource demands.

An organization with an in-house I.T. operation that cuts back from 12 operating systems to 6 operating systems has not drastically reduced their costs because the organization's fixed costs of operation includes heating, cooling, security costs, rack and floor space, etc. that are all sunk costs. However as you move this model to a "pay as you go" basis in a hosted cloud environment, dropping from 12 operating systems 24x7 to just 6 operating systems 24x7 with 6 systems online only during 30-50% of the time, the organization can save a considerable amount of costs in aggregate across all I.T. operation systems.

As organizations design their I.T. operations of the future, instead of merely designing their environment to support these 6 frontend and 6 backend systems as the organization has done for the past decade, they should rethink a more effective supply and demand model. Tiers of operational systems that focus on the actual demands of system resources

can be enabled and disabled at varying times during the day or week, thus decreasing overall operating costs.

This is where automation becomes more than just automatically spinning up a new system, it's automating the process of bringing systems online and offline continuously based on projected and actual demand. It's having the agility of starting with 2 + 2 systems and then scaling up to 4 + 4, 6 + 6, and automatically scaling back down to 3 + 3 to meet the real needs of the organization around the clock and around the globe that helps organizations achieve a true optimized cost of I.T. operations.

Process Automation – Shortening and Simplifying User Tasks

Automation is not just on the backend datacenter side of operations, but process automation as it relates to each and every user in an organization also helps an organization best utilize its digital assets and resources. As users are empowered to do more things on their own, it becomes important that users also are as efficient as possible at what they do. Since I.T.'s role in a more digitally skilled and aware workforce environment is no longer to simply teach someone how to click the send button to send a message, I.T. can better utilize its time and services to focus on taking common user tasks and minimize the steps required (through the use of process automation) to help users be more efficient in their day-to-day use of technology.

In a very simple example, users who get a lot of email messages that can better triage their messages can be more effective at responding to important messages than to simply go through their inbox chronologically. Most users who come out of a meeting to a full mailbox quickly visually scan their box for "important messages". By simply leveraging built in functionality in tools like Microsoft Outlook, a user can create inbox management rules that automatically identifies "important messages" and places them at the top of the inbox. In a form of artificial intelligence, a user can define the rules that help them best organize their content, and prioritize information accordingly.

In a more complex example, process automation for a business workgroup can automatically route content between members of the workgroup, identify and highlight key components of content pertinent to each recipient. For instance, the financial section of a document can be highlighted for the finance participant in the workgroup. Legal terms and details are highlighted for the legal participant in the workgroup. The outbound messaging section is highlighted for the marketing communications participant in the workgroup. As much as all of the information is provided to all users, content prioritization helps participants more quickly focus in on the areas most applicable to the individual, thus improving the efficiency in managing the ever growing volume of digital

information in the work environment.

On Time and On Budget Gives Way to Achieving Stated Goals and Expectations

With automation tools in place, and many services hosted outside the walls of the I.T. datacenter, the measurement for success of the I.T. department shifts from a focus for projects of being on time and on budget to direct measurement on whether I.T. helped the organization meet its stated goals and expectations. I.T. in the new world environment is focused less on building things and the time and efficiency of building "things" and more on the overall contribution I.T. has to the operations of the business.

This is why this book started out with a focus on identifying the business goals and initiatives of the organization, and the prioritization of those goals and initiatives by the I.T. department. By measuring its success on these goals and initiatives undertaken by the I.T. department to help the organization meet its business goals and objectives, the I.T. department gets closer to fulfilling its role as a business enabler and core contributor to the success of the organization.

Maximizing the Feedback Loop

This then leads to the feedback loop that was introduced earlier in this book as a critical mechanism that an organization, potentially through leveraging enterprise social networking, can understand what its users "feel" about I.T.'s initiatives. Success criteria of an I.T. department moves away from quantifiable metrics of server updates, service level agreement attainment, and checking off I.T. "projects" completed during the year. Instead, success criteria of an I.T. department is partially a quantified metric on I.T.'s contribution to the success of the organization, which ties to how well I.T. is doing at providing services to its end customers.

A social media / enterprise social network that invokes feedback from its employees and its customers garners a significant amount of information about the contribution that I.T. has in supporting its end user community. Just as users are quick to "like" and "dislike" content on a social network, getting that immediate "like" and "dislike" on I.T. initiatives and on initiatives throughout the entire organization helps to elevate the importance of transparent communications throughout the enterprise.

Thought Provoking Questions

- Do you have extensive automation of datacenter processes in your organization, or are things done for the most part manually?
- Do you feel that user level process automation can improve employee effectiveness and efficiency in key operating areas of your organization?
- Can supply and demand in organizational process be better optimized in your environment and contribute to improving business efficiencies?
- Are feedback mechanisms in place within your organization that can provide visibility into the effectiveness of enterprise wide communications?

12 STAFFING I.T. IN THE NEW WORLD

As the world of I.T. changes from a solely build model to a model where some (or all) I.T. services are purchased as services, the skillsets of the personnel that make up the I.T. operations also needs to change. For some organizations, management may find individuals can be retrained to fit new roles, whereas other organizations may need to recruit a new line of personnel. It is important for I.T. individuals to keep relevant in their skills beyond technology to contribute to the I.T. model of the future.

I.T. Architects Give Way to Business Analysts

As has been noted previously in this book, the role of the I.T. architect changes from a technologist designing servers, system fault tolerance, and software migrations to business analysts who understand the business and the role of employees within the organization. The I.T. architect may still be the same individual fulfilling the role, but the focus is to truly understand the organization, how the business runs, what the business goals and objectives are, and then "designing" the use of technology within the business to fulfill the needs of the employees in the organization.

Instead of taking current demand and capacity and creating models on the size, redundancy, and scalability of systems, it's identifying the applications users need to run and determine what model best fulfills on meeting the needs of the users. The analyst needs to determine whether an application will be hosted by the organization internally, or whether the application can be purchased on a subscription basis from a hosted cloud

provider. If a hosted cloud provider doesn't provide the specific application to be run in the cloud, consider a model where the underlying infrastructure (i.e.: virtual machine and OS) is hosted by a cloud provider, and the I.T. organization simply installs and supports the running of the application in the cloud.

The business analyst would also spend a good portion of their time crunching numbers to determine the most effective cost model for the organization. Whether it's paying a flat monthly fee, or whether an "on demand" model leveraging cloud services is appropriate for the organization. As noted in the previous chapter, the costing model is not necessarily a linear monthly cost for cloud hosted applications. Many hosted services can be acquired on a usage basis so that an organization can build capacity to meet peak needs, but shutdown services in the cloud when the capacity is not needed, and thus optimize costs by 40%-60%.

The role of the business analyst in architecting and designing the right I.T. environment is to make sure to "buy" the right capacity to fulfill on the needs of the organization. In this role, it's important to think "outside the box" and not simply take the same application and same business model used today, and just cost the exact same model in the cloud. The cloud is just another input in the cost matrix to use in calculations. The business analyst needs to understand what users in the organization need to do, and then recommend the right application/tool, in the right business model, with the right costing structure to fulfill on the obligation of providing services at the most effective cost and structure.

Technology Upgrade Specialists Give Way to Change Fulfillment Specialists

In the past, I.T. has been focused on upgrading technologies from one version to another. Backend servers were upgraded, and I.T. specialists focused on the upgrade of the server systems. When client applications were upgraded, I.T. specialists focused on deploying applications on user systems. However in an I.T. environment where applications are provided to users from a centralized hosted environment, there are no backend servers for the organization to upgrade, and frequently no applications to install on end user systems either. The role of I.T. in this transition is to assist in any change fulfillment that needs to be addressed such as user training or integration modifications.

However hosted cloud providers have historically upgraded their systems in real-time, adding in new features and functions, and consumers of the services have had little need for incremental training. The new functionality just appears and is available to the users, and even in major version updates, users have for the most part just "figured out" how the new system works.

This goes back to the more tech savvy workforce where users are familiar enough with technologies that they can figure out how to navigate their way around an updated application.

It's the reason I hesitated using the term Change Management in the description of this new I.T. role as I.T. won't really have much control to "manage" the change that is happening. Instead, I.T. will just have to fulfill their role in supporting users and the environment when the change occurs.

The individuals fulfilling this role will need less hands-on software imaging and application packaging experience, and be better communicators and support personnel who are able to work through any changes that directly impact business operations. The role focuses on addressing the change and reactively solving any problems, not necessarily handholding users through new features and functions.

Network Administrators Give Way to Supply and Demand Managers

Within I.T. operations, there are a number of different network administrators that oversee various technical functions in the organization. Some administrators oversee databases, others email systems, some provision and deprovision employees, some address security, while others focus on the network infrastructure and storage systems. Some of these roles will remain the same for an organization, at least for a short while, whereas other roles will quickly be replaced.

As an example, if an organization migrates its email system to a hosted cloud environment, there is no need for a role of someone to patch, manage, and update email servers thereafter. In a full cutover of an email system to a hosted cloud environment, there are no remaining on premise email systems to backup, maintain, and manage.

There is however, still a role to administrator email accounts, create email routing policies, address email security rules, and provide end-user support for access to the email system. The role shifts from managing "systems" to effectively administering settings and ensuring that supply and operations meet the needs and demands of the organization.

If an organization moves document storage to the cloud, then the need to manage file systems, storage area network systems, backing up files, and other day to day tasks are eliminated from the organization. However, the organization still has to focus on document management, document change control, security access to content, and things as they relate to user access, modification, and the security of the content.

Some roles are combined as things like email settings or cloud monitoring are sporadic tasks and not particularly full time tasks, so an individual may be responsible for addressing settings for emails, files, stored content, hosted

Web servers, and the like. The I.T. role shifts from a specialist in 1 technology platform to someone who needs to be savvy with the administration and management of multiple applications along with the settings and operations of multiple systems.

There's no doubt that as services are shifted to cloud-based environments and even if organizations choose to host applications in-house, that the focus is far less about patching and managing "systems" as once was the responsibility of I.T. specialists. The shift in focus will be about sizing demand, optimizing settings, and ensuring consistent access to the hosted or the on premise system services.

Help Desk Gives Way to End User Enablement Specialists

A big change organizations will start to see is a shift from traditional "help desk" roles to one of I.T. individuals assisting users to maximize their use of the technologies available to them. As the workplace fills itself with more tech savvy individuals, and organizations broaden their support for various endpoint devices, the organization will find that its need to provide helpdesk support in the traditional sense will change.

The helpdesk individuals will spend less time assisting users to click to open files, or press send to send messages, but rather proactively work with business departments in helping users best leverage the technologies available to them. A frontline support person can greatly contribute to the success of the organization by helping marketing personnel access marketing data and leverage that information to conduct better marketplace assessments. Or sales personnel can be assisted on the frontline to better leverage client support tools, track sales opportunities, increase revenues by better understanding and supporting the end client.

Helpdesk can be shifted from being a reactive support resource helping technically novice individuals with mundane support tasks, to being a group of proactive enablement specialists helping employees be more productive in their day-to-day operations.

Changing Roles Requires New Skills

As with any operational change, the I.T. organization will have different roles in I.T. The skills required in the new world of I.T. is far more business focused and user interaction focused than hands-on technical focused. The make-up of the I.T. department will have fewer individuals running around building, patching, and maintaining systems than in the past, and more individuals doing business assessments, financial and operational optimization assessments, and more face time communications with users in the organization about what they do and what users in similar organizations do.

Shifting Recruiting to Good Communicators and Business Savvy Individuals

With this change from technologists to analysts, the recruiting process in I.T. will shift from those who are good building, configuring, and managing servers and systems, to those who have exceptional communications skills, have business acumen, and are good business analysts. I.T. organizations will find they will think more like economists, looking to optimize marginal costs as opposed to technologists looking to build highly redundant and high performing systems. But this is the shift as services hosted in the cloud and paid for by consumption are best optimized and controlled rather than merely allowing users to consume an unlimited amount of capacity at an incremental cost to an organization.

We have seen a similar model today with Web Conferencing services where some providers charge "per hosted conference session" whereas other providers charge a flat monthly rate. Most organizations have just paid the "per conference rate" just like they have for years blindly paid for mobile phone charges. However when an organization is truly managing its costs of I.T., having a cost analyst track the cost of web conference calls versus the conversion to a flat fee service, the simple choice of selecting an appropriate vendor and their service plan can improve the bottom line for a business by $20,000/yr and in examples we've seen upwards of $500,000/yr.

The best run I.T. organizations will be those that have tight controls over expenditures, not necessarily just cutting costs and pinching pennies, but truly analyzing usage and contracted rates. By looking for other competitive offerings from other providers and shutting down redundant servers at night and on weekends, an organization can better optimize their expenditures on I.T. services. This is no different than organizations shutting off lights at night and turning off air conditioning and heating systems during off hours as there's no reason to keep an empty office brightly lit and perfectly temperature controlled when nobody is in the office.

The make-up of the I.T. department will be one where these more business savvy individuals will keep an eye on business operations and help the organization be more effective end-to-end at what it does.

Technologists Still Required

As a final comment on the changing role of I.T. personnel, don't get me wrong, I'm not implying that every I.T. Professional will be replaced by a college educated Economics major and English Literature major, there's a HUGE need for technologists still in the technology industry. But the writing is on the wall that in today's I.T. environment, instead of nearly 100% technologists, the I.T. organization will more likely start off with a blend of

20% business analysts and 80% technologists. And within 5-years, that model will be 40-60% business analysts, business savvy communicators, and managers compared to technologists. Still plenty of room for those with deep down valuable technical skills, however when half the jobs will go to non-technologists, it begs the need for either skill re-training or drastic shifts in the personnel that will make up the I.T. department in the near future.

It's these changes in the make-up of I.T. that have begun as organizations shift their I.T. services to hosted cloud environments. Additionally, as a more tech savvy workforce, requiring less handholding, become the norm in the business environment, the distribution of technical knowledge throughout an organization will change the focus of what I.T. will do day in and day out I.T. has changed and will further change over the next 5-10 years, and as the changes will occur, organizations will adapt to the changing environment.

Thought Provoking Questions

- Do you foresee a change in how you will need to staff your I.T. organization in the next few years?
- Do you feel your I.T. personnel have the skills needed to be effective in an environment that will be integrated with a private and/or public cloud?
- Do you agree that the future of I.T. will be more focused on communications skills, support of end users, and support of end user application access than building servers and managing systems as has been the process in the recent past?
- Do you have a plan to retrain existing employees, or recruit and hire new or different personnel to fulfill the pending needs for I.T.?

Part IV:
Where to Go, And What to do Now?

13 READYING FOR THE PRESENT

As this book has addressed, change is here and organizations NEED to have a plan to evolve their I.T. operations to meet the changes in the new world of I.T. But don't worry, you're not behind if you haven't started yet, the velocity for change varies based on the size and scope of your organization.

It's Here Today, Not Something in the Future

Change is needed in every I.T. organization. When a hosted provider can build its systems at half or a third of the cost of what an organization can build the same capacity in-house, economics is plain and simple, either the organization needs to also be as efficient and effective at cost reduction, or the organization needs to shift its production usage to one of the lower cost hosted providers.

Salesforce.com has done something for the client relationship management software industry that will be replicated in other business applications over time. Salesforce made it cheaper and easier to use their hosted cloud service than what organizations can build and implement on premise on their own. Most internal I.T. departments welcomed Salesforce for CRM because most internal I.T. departments don't understand client relationship management and all of the intricacies that are involved in the process, like sales forecasting, documentation, tracking, and reporting. CRM is also something that impacts just a handful of users within an organization, and thus it was a lot easier to buy a subscription for the handful of CRM

users that needed it than to build the entire infrastructure in-house.

However as much as CRM is relegated to just a handful of users, email in the cloud has become another application that has quickly become a focus of organizations to move to the cloud. Email is something that EVERYONE in the business utilizes, so why has email become a major candidate for cloud hosting?

The answer is the simplicity of email as an application, yet the mission critical reliability that is needed to keep email operational. Email is not a complex application, people send and receive messages. As a technology, it's a pretty simple application. However because organizations rely on email, with many organizations calling it the most mission critical application in their business, the need to keep email operational 24x7x365 is vital.

By hosting email in the cloud, an organization can offload a high expense and high visibility application, for a relatively low cost. And hosted providers are able to host email because there's very little customization to email systems that is needed. Everyone's email box sends and receives emails exactly the same, whether from a small business to large business, an attorney in a law firm to a retail sales clerk at a store. As such, email was a perfect candidate to simply host and provide great value to organizations by offloading the extensive amount of resources in an enterprise to keep email operational.

Small Business Will Shift First

For organizations shifting to the cloud, small businesses have been the first big wave of consumers of enterprise cloud services. Because small businesses typically have limited budgets to maintain a full I.T. staff to plan, build, and run I.T. operations, the organization can simply move specific business workloads to the cloud. Additionally, as organizations look to make key business systems highly redundant, because small businesses typically don't have multiple offices to replicate information between sites, the hosted cloud providers are a very attractive solution for the small business for better I.T. fault tolerance.

A hosted provider can provide reliability and redundancy as they have multiple sites and plenty of resources to build highly reliable systems. The hosted provider can also handle basic I.T. functions like backup, patching, updating, upgrading, and maintenance of systems, that eliminates a small business from the daily responsibility of managing I.T. systems.

The cloud provides small businesses what they need, for a fixed monthly cost, and eliminates the need for purchasing systems and the cost of the in-house management of the systems. In a short period of time, small businesses will move their I.T. services to cloud providers as it no longer makes sense for a small business to pay for the cost of systems, maintenance, and support.

Of course a small business still needs some level of services such as helpdesk support, upgrades of desktops or laptops, and other hands-on assistance. As such, a hybrid model with some internal I.T. services and some cloud-hosted services have seemed to be the norm for small business organizations.

Larger Enterprises Will Need to Optimize Quickly

We haven't seen a major movement to the cloud by the largest enterprises because a large enterprise has already invested in multiple datacenters around the world, has I.T. personnel in place, and can build and manage systems at an economy of scale similar to that of a large hosted datacenter. However, large enterprises will still be forced to improve their operational efficiencies over the next few years.

Cloud providers will put significant pressure on internal enterprise I.T. organizations to optimize I.T. operations. The cloud providers are driven to keep their costs low to remain competitive in their line of business. Rather than having 3x, 5x, 8x redundancy on systems that are in far excess of what is needed to maintain a 99.9% uptime factor. The hosted providers just implement 2x or 3x redundancy to meet their uptime commitments.

Larger enterprises will be forced to adopt cloud efficiencies, and quickly develop internal solutions that are as feature rich and cost effective as the services provided by the large cloud providers. Large enterprises will need to be just as effective and efficient at running their I.T. operations as the large hosted cloud providers.

Costs will drop from the hosted cloud providers as the economies of scale work to their advantage. Large enterprises will not be able to hide behind the locked walls of the datacenter as the empowerment of users and the knowledge users have gained will need to be leveraged to take advantage of the intellectual capital available.

We saw this change happen a couple decades ago when the mainframe gave way to the personal computer, where a user on a personal computer was able to do more things, faster, and cheaper on a PC than they were able to do in the monolithic structure of the mainframe environment. I.T. departments once again have a faster, cheaper, and more nimble solutions they will compete against in this new world of I.T.

Mid-Size Organizations Face the Greatest Pressures for Change

Over the next couple years, mid-size organizations will face the greatest pressures to change the way they do I.T. The mid-size organization needs to determine if they are a small organization that wants to take advantage of the ready-made solutions of the cloud, or will the mid-size organization look to

quickly adopt and optimize their internal I.T. operations like large enterprises, effectively making their mid-size I.T. operations as efficient and effective as the largest hosted cloud providers.

This is a significant challenge for mid-size organizations. We're finding most mid-size organizations are moving workloads to the cloud as they make sense. For things like email or file sharing, the cloud providers are providing cloud hosted services that are as good as what an organization can do themselves in-house for an extremely competitive cost.

But simply moving email and file sharing to the cloud doesn't mean that internal I.T. shuts its doors and is no longer needed. There are so many I.T. services in a mid-size organization that there are plenty of things for I.T. personnel to do in a business. There are still line of business applications, client systems, helpdesk support, and ongoing application development and customization. Certain specialists, like email migration specialists, will need to evolve their skillsets once email is moved to the cloud, there won't be another email migration for the organization as all email related services will be hosted by the cloud providers. However, that said, the shift moves from managing a one-time migration of something like email to managing the rolling changes instituted by the cloud provider and the impact those changes have on the organization. It also means having a properly managed I.T. department that supports organizational "systems" that span on premise systems as well as cloud-based systems and applications.

As more and more services are moved to the cloud, it does provide internal I.T. an opportunity to spend cycles identifying other business needs, and allocating time to update and support more business critical applications that directly improve the organization's efficiencies. The new world of I.T. for mid-size organizations will be one where managing, maintaining, and supporting hybrid environments will be VERY different than what the organization has managed in the past. As such, the I.T. department needs to re-develop entirely new operational best practices and support mechanisms to contribute to the I.T. needs and demands of the very near future.

Change Is Here, Embrace It!

If it hasn't been made clear to the I.T. professional and internal I.T. management, change is here in the world of I.T. As much as the organization may find a burst of activity in upgrading in-house systems and migrating applications, a lot of the upfront work will be to merely prepare systems and shift them to the cloud. However once an application is placed in the cloud, there will be no more upgrades, updates, or systems maintenance for that application.

Organizations will find email, file sharing, HR applications, document storage, phone communication systems, and the like removed from their internal datacenters and no future services needed. Those specialists

involved in the maintenance and support of the systems will need to reinvest themselves as client support individuals, or systems management and automation individuals, or simply change careers altogether.

I.T. is changing in terms of what I.T. will provide, what I.T. personnel will do, and the role I.T. has in day to day operations.

Thought Provoking Questions

- Do you agree that I.T. efficiencies, either moving applications to cloud-hosted solutions or developing highly efficient internal I.T. operations, as being key to the future of I.T. operations?
- If you're a small business, do you see a benefit in shifting business applications to cloud-hosted solutions?
- If you're a large enterprise, do you see the need to improve I.T. efficiencies to be similar to large hosted providers that are driven by cost optimization, thus impacting a need to drive cost efficiencies within your large enterprise datacenter operations?
- If you are a mid-size organization, do you have a strategy to either leverage cloud-hosted solutions, or overhaul I.T. operations to achieve efficiencies similar to large cloud hosted environments?
- If you agree that change in I.T. is in your future, do you have a strategy and a plan on how to evolve your I.T. environment to be effective in the new world of I.T.?

14 ARE WE THERE YET?

Through the content of this book, we've talked through the new world of I.T. influenced by the proliferation of the cloud in enterprise environments, and supported by a smarter and more digitally talented workforce. But is this the end?

Once we Optimize to the New World of I.T., We're Done, Right?

Unfortunately no, the journey of the evolving world of I.T. is a never ending process. Once we evolve our I.T. environments to optimize the appropriate on premise and cloud configuration, the evolution of technology continues, and organizations will continue to adapt and leverage the best of technologies into their strategic advantage, so this is an ongoing journey.

It would be fabulous if the hardware and software vendors got together, listened to what users and administrators want, and helped organizations make a simpler I.T. environments. However, the nature of a for profit marketplace is that vendors will continue to make things "better" so that you will continue to buy more of their products in the future. The level of complexity of solutions will continue, and the complex environments that we've built in-house over the past couple decades will be just as complex in the cloud in the next several years.

I've written on several occasions about how the I.T. industry changes every 7-years from an environment of mainframe computers, to an environment of mini-computers, to the introduction of the standalone

personal computer, to the proliferation of local area networks tying standalone computers together, to the introduction of the Internet to the commercial world, to the dawn of the mobile phone and tablet devices, to where we're at now with the integration of hosted cloud-based services in enterprises.

Each of these changes required transitions in I.T. operations, making old ways of running I.T. obsolete, and introducing a new wave of technologies that drove new ways of managing, administering, supporting, and utilizing the new technologies.

What's the Next Cycle

It's anyone's guess what the next cycle in the I.T. industry will be, and a guess is all it'll be. IBM never thought the power of the PC would replace their mighty mainframes. Microsoft never thought that mobile devices would erode the PC market so quickly. But IBM and Microsoft are still two of the most powerful companies in the world, they have evolved, and so shall our I.T. environments.

As I've identified in this book, we're just entering the cycle of the hosted cloud-based environment. The real evolution in this cycle will be the shift away from devices and systems, and instead a focus on the user and their interaction with the applications the user needs to do their day to day jobs. The device is to a user as a hammer is to a building. It's not what the device or the hammer can do on their own (which is very little), it's what we use the device and hammer to do in getting our jobs done.

How to Be Ready for the Changes in the I.T. Industry?

The key is to not get complacent that what has worked well in the past in I.T. and what the organization is really good at doing is all the organization will ever need, unless of course you plan to retire in the next couple years and then you can just focus on keeping out of trouble in the short term. However for an ongoing I.T. operations, adapting, transitioning, leveraging I.T. resources that are available these days will help an organization best leverage the capabilities of technology as a competitive business advantage.

It's important for I.T. to not build walls around the enterprise, not block progress, and not ignore the transition of change as the "problem" won't go away. Those who have been most successful in the transition process have invited experts within their organization that have been able to share what they are doing, and can assist in transition management. Being cognizant of where the industry of your business is going will help you manage the impact that technology can provide you in the success of your organization now and in the future. This will help the organization have a competitive advantage through the use of technologies in making the business more nimble, more

cost efficient in operations, have better internal and external communications, and that it is leveraging the people assets within the organization to help it succeed.

People Driven Changes

Change usually happens at the people level, so seeing what users within the organization need to do will be much more helpful in driving successful use of technology in the future than simply watching the changes and evolution of technology itself. Products and technology will continue to evolve, more features will be added, the products will get "better" and do more things, but it's how the users of your organization can leverage the new features and functions that is most telling of the value the technology has in driving the success of the organization. It never hurts to step back and assess what you would do in a greenfield environment if NO existing technologies existed, what technology you would choose that will ultimately help the employees in your organization best do their jobs.

As people drive changes in the organization, having a culture of open and transparent communications helps the organization make the shifts in operations that it needs during the transition. Keeping the people in the organization onboard and contributing to the success of the transition accelerates the changes needed in the organization.

Relationships as the Bonding Glue Through Transitions

For years, the tech industry has been about knowledge, or more specifically technical knowledge of how things work, how to make them work, and how to leverage the technology to do fancy things. However in business, every successful executive knows the importance of people and relationships in what they do. As the tech industry matures, so do business processes and practices. Having a solid peer group to share forward-thinking ideas, having relationships with others throughout the industry that have knowledge and expertise in key areas becomes a critical tool in the successful business executive's tool belt.

Technical knowledge is what makes technology work right, and combined with good people backed by solid relationships is the combination that helps organizations achieve success in their efforts. As the technology industry evolves, the bond in strategic relationships is what will help executives successfully maneuver their organization through the shifting transition into a model of a successful tech enabled enterprise.

Last Thoughts

This is a journey, not an end solution. Just like the waves in the ocean, there are ebbs and tides, and the only thing we can be guaranteed of is that there will be change once again in our not too distant future. The great thing about the technology industry is that it is not boring and rarely ever the same year to year. If you are one who likes consistency, likes doing the same thing year in and year out, you're in the wrong industry if you are doing anything in the tech field.

However change brings on improvements in how organizations leverage technology to their advantage, there is comfort in our job security. As long as we all keep up to date on the latest, and change the way we think and what we do within the industry, we will always have a job to do.

I hope you found this book insightful and that you can leverage this book in your efforts and initiatives! I will be periodically releasing new mini-books on strategy and technology topics applicable to the changing tides of our industry to share guidance as things evolve.

All the best!

Thought Provoking Questions

- Do you have a clear perspective where your I.T. operations fits in its transition to a more efficient I.T. model?
- Are you leveraging your knowledge of your business to shape the services I.T. offers to its employees to enable individuals to be more effective contributors to the success of the organization?
- Do you have peer relationships and relationships with experts that understand your business, your industry, that you can trust to assist you in your efforts?
- Are you prepared for the journey that I.T. will take in the current transition and upcoming transitions in the new world of I.T.?

ABOUT THE AUTHOR

Rand Morimoto, Ph.D., MBA, CISSP, MCITP: Dr Morimoto has a unique blend of deep technical knowledge and expertise, and an academic background in organizational behavior and organizational management. Dr Morimoto describes himself as a "tinkerer" of technologies, rolling up his sleeves and beta testing technologies months and years before the products are released to the general public. And not just one brand or solution of technologies, but his insight to what organizations want, what works, and what should be developed leads Dr Morimoto to being invited to participate in the early adopter programs of most of the key products and service providers in the industry.

Dr Morimoto is a deep rooted academic, a lover of knowledge and information that led him to pursue his studies in an MBA program, a Doctoral program, and ultimately in the role of being on the governing board of a well-known academic institution.

Dr Morimoto blends the theory of economics and his expertise in organizational behavior and organizational management with his knowledge of the tech industry, resulting in the content highlighted in this book.