

eGovernance a New Organizational Paradigm

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Having Process Managers and Business Users Automate Their Own Processes Optimizes Productivity, Project Success, and Organizational Effectiveness.

Productivity and project implementation success rates rise dramatically when those directly responsible for the outcomes of business processes -- managers, functional specialists, and in fact all knowledge workers -- take control and design and implement the electronic automation of the business processes for which they are responsible.

A unique convergence of technologies has made this new paradigm in organizational effectiveness possible. The most relevant outcome of this convergence is it is now possible to place all the tools for electronic process automation directly into the hands of actual business process managers. So this revolution is more about who is now able to use the tools of automation rather than the tools themselves. Now the question is are business process managers and knowledge workers ready for this new level of responsibility? Perhaps more importantly are our institutions and leaders prepared?

Surveys show that core information technology (IT) systems represent only a small fraction of the totality of human and paper processes needing to be automated in any given organization (Attachment A). The City of Fresno¹ identified no less than 5,000 human and/or paper driven processes (3,000+ paper forms alone) that potentially could be electronically automated (e-automated). These were in addition to the core enterprise resource planning (ERP) and other business process management (BPM) systems already in place. Addressing this magnitude of electronic automation of human and paper processes (eHPP) projects is a major challenge. Even if Fresno's IT department were able to implement one eHPP project every day, it would take over 22 years. Every organization has thousands of processes that are ripe for e-automation (Attachment A, Fig. 3). The new science of eHPP recognizes that the only possible way to e-automate the thousands of processes which lie outside of the core systems is by engaging the actual process owners themselves.

The non-electronic (paper) process model works for eHPP.

The goal is to set up a system to accommodate managers, themselves, to e-automate the processes for which they are responsible. Which means being given the authority, incentive, tools, training, and infrastructure to support such rapid and autonomous deployments. This would allow eHPP implementations to be done much more quickly and by the hundreds, perhaps thousands, rather than one at a time. In fact, there is no other way when you really think about it. Actually, this is pretty much how it has always been done long before we had computers and before computers were connected. A person responsible for a process picks up a pencil and a ruler and draws a form on a blank sheet of paper. The draft form is sent to the print shop for paste up and is printed on three part NCR paper. Voila, a new process is born. All that remains is to type up a list of procedures. Organizations must motivate these same people to learn the new tools of BPM and take responsibility to e-automate their own processes.

¹ The City of Fresno (3400 employees) is the sixth-largest city in California and is relatively technologically advanced. It will be used as a case study for several examples.

Confluence of technologies makes eHPP possible.

Making eHPP possible is the confluence of numerous technologies – most significantly the Internet, WWW, browser, powerful PCs, and directory services (directory). Never before in history has such a unique combination of inventions come together at one time as to completely change the way we do things. Such change did not come about with the invention of the printing press, computer, steam engine, electricity, telephone, radio, not even the Internet itself. Virtually all of the technological inventions to date, have merely made existing processes faster or more efficient. Prior to the steam engine, for example, literally all manufacturing was confined to river locations. As a result of steam power plants and machines were able to be located anywhere, however they continued to produce things with steam just as they had with river power.

A pencil in the hand of a writer becomes a tool with which the writer produces a novel. Neither the inventor nor the manufacturer of the pencil write the novel. The pencil facilitates the mind of the writer and without this tool the writer cannot write. However, before she can record her thoughts she must become proficient in the use of the pencil (and the eraser). Beyond being proficient with the tool the writer still needs to be taught the alphabet, structure, and rules; and learn words, meanings, and language. She also needs paper, a smooth hard surface, lights, heating, cooling and an entire infrastructure of support to produce and market her works.

As the pencil is to the writer, so are the tools of eHPP to the user of the tools. Process managers, like writers, must learn eHPP tools to the point of being able to think in the tools, much the same way one learns to think in another language. Until now the use of such tools had been relegated almost exclusively to programmers and highly paid consultants. Regardless of the fact that process automation is always accomplished best by the process experts. Not IT, not the inventor, not the programmer, and not even the teacher can do this for the process expert or manager. As the tools of eHPP become accessible to every worker the activities associated with them will likewise be returned to the responsibility of business processes managers. The computer and many other technological inventions have increased productivity in and of themselves. However, greater gains in productivity are achieved with technologies that facilitate the disbursing of control to the people who are directly responsible for process outcomes.

Human work in the digital age is divided into four functional areas.

The continuing work of humans, in the digital age, is described in four functional areas:

- " E-automating processes or implementing eHPP projects,
- " Effectively dealing with exceptions to e-automated processes,
- " Carrying out tasks that are not yet cost effective to e-automate, and
- " Performing activities which will never be e-automated (i.e., an NFL quarterback).

If everything in an automated system is functioning as it should there is no need for human intervention. When customers call the phone company it is because their phones are not working. It is the *exceptions* to the normal process that are the work of humans. "Nearly 80% of programming time for BPM is spent on exception management," said Tyler McDaniel, "Ten Pillars of BPM," *eAI Journal*. The e-automation of testing, grading, attendance, and other tasks would allow a teacher more quality human time with students (something that will never be e-automated). If a 400-officer police department reduced the average time devoted to reports by just 15 minutes a day it would save the equivalent of 11 full-time officer years.

The first functional area of human work, eHPP, can be further divided into three groups:

- " E-automating every step possible in every process,
- " Eliminating unnecessary steps, and
- " Finding ways to cost effectively move exceptions to e-automation.

The success of any organization will be its ability to eliminate *unnecessary* steps in human processes and, cost effectively, e-automate all the *necessary* steps. In the digital age this means how quickly one's workers can e-automate their own processes.

Successful organizations will prepare their infrastructure and provide the tools for employees to be increasingly more self-reliant in their areas of responsibility. More importantly, they will provide training and systems that support motivated employees in making themselves more effective. This means formally rewarding knowledge workers who innovate, "buck the system," and make changes happen. Fundamental to an organization, when all employees become "automaters," is the need for centralized data and rigid adherence to standards. Without this there would be waste, redundancy, data inaccuracy, and worst of all lost or conflicting data elements.

The more processes, or steps in a process, that can be e-automated the more time humans have to deal with humans. After all, the purpose of all this technology is to facilitate the connectivity of one human with another human (H2H), one human to a whole bunch of other humans, and a human to an unlimited bundle of processing power, data, information, or entertainment, and back to the human. No matter what the process there is a human at each end. There may be a whole bunch in the middle as well. A human starts a process and the results from a process benefit a human.

Metrics and state management are key advantages of e-automation.

The single most notable side benefit from e-automation is the ability, for the first time, to collect real-time measurements (metrics) and do so at any stage of the process. These metrics give managers the ability to truly know the state of a process and the state of any stage from beginning to end. With paper forms the only way to measure results is after the fact and only then if a human enters the data. There is no real-time tracking of stages, duration, or speed to completion, when using human or paper processes.

One constant problem with a paper, or human, based process is that people can't easily find out what step is currently being processed. With e-automation, not only can they know, but everyone else can, and as a result, then wants to know, so you have to build system accessibility and reports so that everyone interested - and sometimes even the general public - can see what is happening in the process.
Stuart Conrad, IS Applications Division Manager, City of Fresno.

Survival of the fittest? Now it is survival of the "fastest" to adapt.

Non-adapting organizations will be left in the dust when their competitor embraces these new methods of business process e-automation before they do. When Bill Hewlett and David Packard set out in 1969 to e-automate the slide rule, it was all over for Keuffel & Esser who made their last slide rule in 1975 and closed their doors. The slide rule lasted nearly 400 years. But how could the wood and metal workers at K&E make the transition to the chip designers and programmers at HP? It use to be said, "If it ain't broke don't fix it." In the digital economy a company will not get six years as did

K&E. Today a product may be obsolete before the company opens for business. Continuous improvement is the eHPP model -- it was broken K&E just did not know it.

A recent example of how great an impact an eHPP system can have on an entire industry is Napster. A 19-year-old student, Shawn Fanning, with time on his hands, in his dorm room, figured out a way to electronically replace an entire group of industries. What motivated him to do this? To get the music he and his roommate wanted and be able to listen to it, anytime, anywhere, and at a reasonable price. Thousands of mid-level managers at Sony, DMG, Capitol, Virgin Records, music stores, overrated (and overpaid) musicians and advertising agencies, even UPS, 3M, and makers of CD and tape players all panicked. They saw the need for their "services" literally eliminated, replaced by a peer-to-peer (H2H) file sharing server.

Don't believe all the talk about copyright, it is a smoke screen, a red herring. The issue is pure and simple job security for "non-artists"-- mid-managers. The cost of music, if dealing directly with the artist H2H, which is what Napster facilitates, is 15 cents a song. The typical cost for a CD is \$15 (including tax) and often there is only one song worth having and the artist still only ends up with 15 cents. Who gets the remaining \$14.85?

What if one company were to "Napsterize" its processes before its competitor did? This is the "killer application" for which everyone is searching. However, it was not an application or tools that created Napster. It was a motivated kid with knowledge of the tools. Made possible by the Internet, digital recording, and now MP3 players. Perhaps more interesting is the "institutionalized" reaction that shut down this quantum advance in technology. Prompting the question, "Are our institutions ready for eHPP?"

At the core of eHPP is a roles based directory and e-mail centrality.

The promise of eHPP is to allow customers to move seamlessly and securely from one site, application, or data base to another without even knowing it. When processing millions of actions among millions of people, something has to be there to differentiate one person from another and protect the sovereignty of each person. This is the job of a directory. A directory contains every constituent, shareholder, employee, customer, reseller, supplier, it supports the network, security, and authentication systems. A directory should not be confused with a data base which holds all the details about people or things. A directory is for authentication, security, and getting from one point in a process to another. In fact it is a directory that stands as the "security guard" at the gateway restricting or facilitating access by only the person with proper authentication.

A robust directory is central to the success of eHPP. Travel by airplane from Los Angeles to New York is fairly straight forward. However, getting to and from the airport is another matter. There are overhead bags, a long walk to baggage claim, fighting crowds, a struggle with bags to the curb, lug everything back inside to buy a bus ticket (or \$40 taxi ride), find the right queue for the bus (tips, tips, and more tips), off load at the hotel, register, and more tips to get the bags to the room. Every one of these steps represent intermediate destination points, resources, people, and processes and are examples of directory contents. Wouldn't it be great to land and be taken from your seat directly to your hotel room. In order to do this the hotel reservation, baggage, route to the hotel, room and flight number, and all the roles people performed in the process would have to be previously established and readily, yet securely, accessible.

The primary function of IT and core BPM systems is to effectively get airplanes from LA to NY. eHPP focuses on the thousands of human and paper processes outside of the core systems and the interfaces to the core. To accomplish this requires a *roles* based directory. Roles are the functions people play at any given step in a process. Rather than saying, "Take purchase requests to Mary for approval," a role called purchase request approval is assigned to the position Mary occupies. In Mary's absence a *rule* automatically forwards the request to Mary's supervisor, who also has that role.

Roles do not leave, get sick, or go on vacation. Rules connect roles and route them as needed to handle any contingency. For example, what happens when a person responsible for a step in a process leaves the organization? Often times the position will remain vacant for weeks or months. Processes which rely on that person and not the role they filled will be in constant need of human intervention. Any item sent to the departed employee's cyber-in-box or left unfinished in their cyber-hold-box would be lost in space without roles and rules. A directory must have a comprehensive ability to set rules and conditions, handle exceptions and define all the roles people fulfill in the organization. These must be intuitively modifiable and automatically updated.

The portal to all this interaction between workers is e-mail. Bill Gates says the first of his 12 elements of organizational success is e-mail centrality. In order to have eHPP every human inter-actor must have continuous and intuitive connectivity in one place. All tasks share two processes, I either have something I need "To-Do" or something I am "Watching" which someone else is suppose "To-Do" for me. The control point is a "To-Do" and a "Watching" folder in every workers e-mail in-box.

Enterprise application integration systems lack intuitive human interfaces.

In the industry at large there is an understanding, if not acceptance, that at the core of this new IT/BPM space there are six components that make up what is referred to as Enterprise Application Integration (EAI): Basic Communication; Application Integration; BPM; Business to Business (B2B); Application Connectors; and Administration. The essential element of Administration is the directory. Basic Communication, includes e-mail centrality and electronic document management systems (EDMS). To be effective for the enterprise EDMS must be available to every person on the system, via their e-mail portal or secure web page. True EAI solutions are fairly sophisticated, but they do not as a rule render screens for human interface. Even when they do the screens are not particularly intuitive. They view their function as the forwarding of data to external systems like Siebel, PeopleSoft, SAP, etc. A true eHPP system requires every person who inputs or extracts data be electronically connected to every other person who inputs or extracts data. The focus of eHPP is more on the H2H functionality and this requires intuitive data entry and extraction screens or devices.

The browser was the final piece of the Internet puzzle enabling eHPP.

The idea of the Internet was born in 1969. It took 24 years of infrastructure building to prepare the Internet for Mosaic (the first browser) which was the final component needed for the Internet rocket. The browser ignited the engines by making it possible for literally anyone to do whatever they wanted to do on the web and without training. An application, like the browser was to the Internet, is needed to allow distributed e-automation like eHPP to really take off.

This new tool set will allow business managers themselves to specify a business process, define the business rules, indicate the points of integration with other systems, even create the electronic forms, document everything, and provide version control. Once the process has been designed by the functional team, developers can roll out the full solution across the enterprise.

Avi Hoffer, CEO, Metastorm.

Like many previous break through innovations eHPP tools will take time to reach critical mass. Lotus123, for example, required implementation consultants when it was first introduced. Today a spreadsheet (i.e., Microsoft® Excel) is purchased “off-the-shelf” at Wal-Mart and installed by any user. The eHPP tools will be on every desktop like Excel is today. The add-on, training, and support after market products associated with Excel will be many times larger for eHPP.

Gathering input from humans is immensely more complex than from devices.

For many years the CIA and the entire U.S. intelligence community focused on developing non-human assets. The primary reasoning was that our enemies were “nation states.” Therefore satellites and other exotic toys were deployed as a cost-effective defense system. However, a satellite cannot see into a bunker. The new war of terrorism is being waged by individuals organized in small “cells” united for a common objective. This is very similar to the current state of most organizations. Technology has made it unnecessary to be tied to a building in order to work in collaboration with others. Now the problem the CIA faces is that all their infrastructure was designed around non-human data collection systems. These systems may have been reliable, predictable, and easily focused on a specific target but on the ground human intelligence is essential. The problem with gathering input from humans is it is messy, chaotic, uncontrollable, and filled with uncoordinated processing points.

Likewise leaders of today’s industries need to be aware that the core technologies needed to support chaotic human collaboration are exceedingly more complex than those needed for managing technical assets. Hoffer’s description of what is needed at the human end of the processes is exactly correct.

The e-automation of internal processes is foundational -- it is eGovernance.

Before an organization can deal with customer relationship management (CRM), or eBusiness this, or eGovernment that, it must first address employee relationship management (ERM). An effective ERM system will focus on the e-automation of all internal processes. The “non-automated” interactions between employees are the bulk of the overhead for organizations. Governance is the system used to manage internal processes. Applying eHPP it becomes eGovernance. It is important to remember that employees are every organization’s processes and exceptions “experts.” More importantly, they represent the only hope of implementing the thousands of potential eHPP projects. How could the City of Fresno, for example, ever hope to effectively deliver its services without first addressing the 5,000 unautomated internal processes. Rather than a glitzy eGovernment Web site or IVR phone system a much wiser expenditure of tax dollars would be to implement a system that gets the potholes fixed, or the nuisances removed, before any resident has to logon or pick up a phone.

I met with leaders of an organization who wanted to know about getting into eBusiness.

Yet they did not even have e-mail for everyone who had a computer. Some department locations did not have data connections and one department head only had dial-up Internet access. On a subsequent visit, one division's shared printer, the only one they had, was out of service the whole day. Many official documents were not accessible on magnetic media. When requests came for copies, a human would look it up in a hand-written catalog, make a copy and FAX it, or "snail" mail it. Implementing eBusiness or eAnything ahead of an ERM system will just generate more work. What is worse, it raises customer expectations which the existing internal organization may not be able to satisfy. First comes eGovernance.

A 2001 survey of 50 of the largest companies in the United Kingdom resulted in 92% stating, "their CRM system had not been very successful."² According to the Butler Group, "70% [of CRM projects] are failures."³ In the Gartner Group's manual for CRM success it lists employee this, employee that, interdepartmental this and that. "Devote one half of the total timeline ... to data elements"⁴ and "data degrades at the rate of 2% per month."⁵ In other words data left untouched by human hands becomes completely worthless. The collection, maintenance, accuracy, and timeliness of data is 100% employee, employee, employee. A dynamic data warehouse is at the core of CRM.

End-to-end connectivity and eHPP -- the first generation.

For the first time in history workers have the processing power of a mainframe at their fingertips. Furthermore, they are directly connected to everyone else with this same power and it is available anywhere, anytime. "The introduction of the PC as a business tool helped establish the so-called 'knowledge worker' as a key driver of corporate productivity," Intel. Up until now we had powerful but unconnected PCs, phones were connected but with no real processing power. Before the connectivity of the Internet, a PC was like having a telephone without any telephone poles, a car without any roads or a train without tracks. End-to-end e-automation is not possible until every human who is part of a particular process is connected with an equivalent computer or other human interface appliance.

Up until now what have we been doing with all this PC processing power? The use is primarily for word processing, some data entry and printing. And what are we doing with our "mainframe to mainframe" connectivity? E-mail. In 2002, according to Appleby and Company a firm specializing in EDMS, 90% of an organization's documents are still on paper, 15% of those are lost, and 30% of a knowledge worker's day is spent searching for paper documents.

Consider the following e-mail to the IT department from Captain Patrick W. Rhames, Development Manager, Field Automation System, Fresno Police Department.

The "One day liquor license" process is an excellent prototype for expanded application. This licensing procedure requires users to file an application with the

² Chris Lee, ZDNet (UK).

³ Adrian Mello, Enterprise, ZDNet.

⁴ Scott Nelson and Jennifer Kirpy, Gartner Viewpoint.

⁵ Beth Eisenfeld, Gartner Group as reported by Adrian Mello, Enterprise, ZDNet.

State Bureau of Alcohol Beverage Control (ABC). ABC, in turn instructs the applicant to transport the application document to their 'local policing jurisdiction' for review and approval. The applicant must then determine which policing agency has jurisdiction and deliver the documentation. In Fresno PD's case, we then instruct the applicant to take the form to the appropriate district station and deliver it for review. The applicant is then instructed to leave the form and to return when we are done with it. The applicant then has to return to the station, obtain the paperwork and return it to the ABC office for completion.

It is clear from this description that Captain Rhames and the people involved in this process know what they need. To have IT solve this problem, Rhames would have to get IT to draft a requirements document, estimate the cost, and set a time line. Typically completion would be six months to a year, just about the time the procedures would be changed by the ABC -- which means always being behind the curve. The Captain's team has the processing capacity, and everyone is connected. They could e-automate this process (and many others) themselves given the tools and training.

The primary benefit of eHPP is increased productivity with fewer people.

The key to success for any organization is knowing the total cost to deliver a product or service and continually figuring out new ways to reduce those costs (see attachment B). Companies succeed only by improving the quality or quantity of their product or service, or by reducing the number of employees it takes to produce the same quality or quantity. External factors (i.e., earthquakes, added government regulations, corrupt management (i.e., Enron), and now terrorists) may impact cost and some businesses are more at their mercy than others. However, by and large, the internal costs and inefficiencies are where organizations must look first to be competitive. The bulk of knowledge workers in most organizations still do things as parts of human chains in processes. Think back on all the H2H stages in the "One day liquor license" process or getting from the airplane to the hotel.

Why is IDT able to charge only five cents a minute for long distance calls while AT&T charges seven cents (with a higher monthly minimum) and Sprint charges 10 cents? It is simply a matter of how many employees it takes for one company to deliver its services versus how many it takes for another company. It quite simply all comes down to people costs. IDT alludes in its TV ads that their competitors pay "celebrities" which increases costs. Nearly two-thirds of the cost of every long distance call is for the bill sent to customers. People produce the paper, run the printing press, and deliver the mail. Even the cost of the ink is based on how many people it takes, and how much they are paid, to produce, package, and deliver the ink. There are other cost factors such as union contracts, employee salaries, buildings, debt service, and advertising. How much pay one person can demand versus another also contributes to the overall cost. All these costs are based on people getting paid to do something, and ultimately these costs have to be passed on to the customer.

High-level attention to details made possible with eHPP.

Since "tiny" things, too small to even be noticed let alone measured, often determine success or failure it is not possible to determine with any certainty what action caused the results which were achieved. Conversely it is equally impossible to predict what future will be achieved from actions taken in the present. It is possible that a butterfly

flapping its wings in China could set off a chain of atmospheric events which, when combined with other weather conditions, could result in a hurricane in Florida. It is probably more plausible to trace all the events leading to the cause of the hurricane back to the butterfly than it is to find the cause of any particular outcome in our highly complex digital economy.

An "O" ring caused the shuttle to blow up. NASA learned a lot by re-tracing all the steps that led to the failure. What really could have been done at the time to have prevented the disastrous results? Clearly anyone knowing the future disastrous "outcome" would not have done what they did. Who would have thought at the time, some 50 years ago, that reducing the four-digit year field to two digits would cause a multi-billion dollar problem on New Year's Eve 1999? Only hindsight is 20/20 vision.

The high-level running of a company is no longer possible. Tiny things can cause such major change, so fast, that it is not possible to see them from 50,000 feet let alone do anything about them. Try calling a large organization to get a problem resolved. It is obvious which of these companies' top executives actually dropped down to the ground and listened to their own, "This call may be recorded for quality..." support calls. The others remain clueless in the clouds as to what their customers put up with from their support lines. Sustaining the level of attention to detail needed by an organization's leaders today is not possible without eHPP.

"When I consider the effect of small things, I realize there are no small things."
Thomas Edison

Chaos is desired and in fact, a necessity - as is stability.

All of the organizational realignments we have discussed are further complicated by the discovery that both chaos and stability must be present to have a successful innovative organization, Ralph Stacey asserts in "Managing the Unknowable." Combine this with the meteoric rate of change that must also be accommodated in the digital economy and it further clarifies the necessity for distributed responsibility systems like eHPP. A chaos sustaining business must still deliver stable goods and services to attract and keep satisfied customers, not to mention the need for stability to retain qualified and contented employees. At the same time organizations must challenge anything that may cause stability to turn to rigidity, or chaos to anarchy.

Chaos is sometimes confused with unrecoverable destruction, mayhem, or anarchy. A better analogy for chaos is to compare it to the blast of a rocket engine. If the space shuttle is under control the chaos created by the explosion of the rocket fuel (equal in power to an atomic bomb I am told) will propel it into space. Without controls, containment, and a guidance system there is no telling what would happen when the fuel was ignited--as the world learned from the "O-ring" incident. What if NASA installed three leaf blowers instead of the three rocket engines, or at the other extreme mounted the three rocket engines on a Cessna. Stacey refers to the ideal amount of chaos as, "bounded instability"--enough stability to contain the chaos. The amount of chaos needed or able to be sustained is relevant to the capacity or stability of the rest of the organization. Finding and sustaining the proper balance is the challenge.

Organizational governance must adapt for eHPP to succeed.

While nothing will destroy an organization faster than the *absence* of chaos, nothing will destroy morale and individual incentive faster than the *presence* of chaos. It is essential to understand the needs of the individual in the organization and adjust the chaotic/stability balance in accordance with their tolerance. A person's belief in what the future will bring is the single greatest determining factor in their arousal or quiescence, according to Murray Edelman, PhD, "Politics as Symbolic Action." If employees are certain that in the future they will be taken care of, they will be more willing to take risks, keep trying, and work harder voluntarily. This kind of trust is built, line upon line, one day at a time, as people are supported in their efforts even when they make mistakes, especially when they make mistakes. If their future is uncertain, or known to be undesirable, it will cause them to act negatively. This is not the kind of arousal any organization wants.

"There are two things people want more than sex and money: recognition and praise." Mary Kay Ash, founder of Mary Kay Cosmetics.

Gone are the days of, "command and control" and the "chain of approval hierarchy." Today e-mail allows a caller to blow right past the receptionist. Anyone can make direct contact with anyone else anytime, at any managerial or authority level, in any organization, anywhere in the world. By the same token, companies can communicate instantaneously with every employee, customer, or potential customer. The sheer volume of data flowing in and out has contributed to the destruction of traditional barriers to direct access. Still, the cumbersome "hierarchy" or "chain of command," procedures for approval remain essential for the delivery of normal, day-to-day operations. They make it possible for the firefighters to have a truck, fuel, hoses, and water at the hydrant when they arrive at the fire scene. However, once the fire fighter is face to face with the fire, the bureaucracy can only get in the way. The same goes for sustaining innovation over the long term. Employees cannot be going up and down the hierarchy to get approval for every idea. Ideas must be allowed to be given birth and life or death without the encumbrance of specific approvals.

Job descriptions will need to be rewritten to include performance measures based on which steps of an employee's processes the employee e-automated. Goals will be set to eliminate inefficient or unnecessary steps in processes for which a worker is responsible. Strategic plans will contain elements that ask, "What are we doing that can be e-automated?" Indeed most organizations are in store for a paradigm shift.

Administrivia -- too huge an overhead.

Administrivia is a burdensome overhead for all organizations. Recent studies indicate that the percent of a worker's time spent on administrivia is increasing in spite of all the "conveniences" of the modern age. It is estimated that administrivia consumes 30% of an executive's workday. I have to concur with this finding. As a CIO of a major city, I was spending much of my time working for the policies and procedures of the organization. I had to personally do this for HR, that for Payroll, this for Purchasing and that for Budget, "Can you get me this report," or, "Where's that document." In a typical day I would be lucky to get 70% of my time available to work on the reason for my being in the organization.

A primary reason productivity gains are achieved when e-automating a human, or paper, based process is simply in the instantaneous moving of the paper from the in-basket to the out-basket. The amount of "human time" spent working on a particular thing - like the "One day liquor license" - is probably just a tiny (1%) percent of the overall processing time. I wouldn't be surprised, for example, if something like an insurance claim spends 99% of its time sitting in an in-basket and 1% actually being worked on by a human. Richard Anderson, IS Division Manager, Fresno

While Anderson may exaggerate to make his point it is clear that automation, on its own, will not solve the problem. People must make decisions. If they are not given the time or authority, or lack the expertise or desire, e-automation will just move a process from its paper in-box to a cyber in-box and there it will sit. The e-difference, as previously discussed, is metrics. Those who need to know about problems in the system with eHPP have the data to justify the cost to fix it. The success rate of all projects will increase as results can be measured and processed instantaneously.

eHPP success demands heightened collaboration skills and ample training.

In the early stages of this revolution, companies will differentiate themselves from their competition by being the first to e-automate costly internal human processes. These early adapters will be able to easily pick up qualified, motivated, and responsible workers and quickly recover the cost of recruiting and training. However, as surviving competitors and new ones embrace similar eHPP efficiencies, the demand for qualified distributed responsibility workers will overwhelm the supply. Organizations will have to look inward to find motivated workers. Companies will have to be far more resourceful as a result of the profit margins having been made slimmer by early adapters.

It is important to emphasize that there are specific skills unique to e-automation. Many workers are able to paper-automate a processes, however making a human, or paper, process electronic has its own unique methods. Conrad. (Conrad implemented the first e-automation project at the City of Fresno).

Placing process automation directly into the hands of knowledge workers will dramatically increase their need for interdependence and collaboration skills. Just to do their jobs today workers are forced to deal with rapidly escalating complexity and many more new and evolving technologies. As if that were not enough, now chaos has been introduced as an essential in the organization. Low-level managers, in fact all knowledge workers, will require training in BPM strategies and tactics. As they will be responsible to deploy, sustain, and modify BPM components on their own. As workers, via e-processes, become responsible for more and more process complexity they will need to greatly expand their face-to-face interpersonal skills. This is scary stuff. How do you teach people to figure things out for themselves, to learn on their own, and yet be more interdependent? They can no longer rely on there being a teacher around. They are the teacher.

Imagine this scenario. It is possible, with today's eHPP tools, for one knowledge worker to design an e-automation process that could eliminate several co-workers' jobs. Dealing with this level of uncertainty among fellow workers will be a challenge for the best effectiveness trainers. It will probably take more than a "ropes" course.

Accepting the responsibility of self-reliance.

Many CEOs come from a position of, "I don't care about techno-details. Just get someone in here to solve the problem." So they call in their favorite "big-6" all-things-for-all-problems consulting firm. These "outside" IT consultants tell the CEO how they would solve his problem and bring in more outsiders to implement the plan. What CEOs must comprehend is that no matter what business they are in, the technological details are the essence of their business. There are no "outside" experts when it comes to internal business processes. No organization can any longer afford the time for IT, or the cost of IT's outside consultants, to implement thousands of eHPP projects.

It seems to me that a great hurdle is to create a service-oriented mind set in the IT management world. IT managers tend to want to protect the system (literally and figuratively), and therefore don't want to empower users to try things.
Jeff Reid, City Manager, Fresno, CA.

This mind set goes both ways. CEOs, or managers at any level, must accept responsibility to know their own process automation needs. They are the experts with the solutions. They can no longer push the solution off on IT or a consultant. While IT will continue to maintain core systems and infrastructure, it must adapt to a new role of providing the resources and expertise to interface eHPP applications with core systems. As "all organizations are now technology organizations" IT has another role: taking responsibility for processes and their effectiveness in the enterprise in the same way Finance is responsible for overseeing financial accounting. More importantly, IT must change its attitude about customer service, as Reid accurately observes.

"[IT] is the glue to tie together the enterprise," said Cheri Anderson, CIO, Novell. On the one hand IT is the enforcer of policies and standards for data security and integrity reasons. On the other hand, IT must facilitate the implementation of best practices by all users in the enterprise. This means learning their customers' business, providing project leadership, working in collaboration with functional managers, and teaching them to become teachers of the eHPP methods and tools to their business units.

Many workers are satisfied just doing their jobs, and most organizations are set up around this model. Employees will argue, "We've always done it this way," or "We can do it faster the old way." Obstacles such as, "It's not my job," office politics, blaming the bureaucracy, and so on also exist. Worker and manager resistance and reluctance to accept the responsibility that comes with eHPP are just as much barriers to success as the lack of tools, training, or infrastructure. Knowledge workers must chose to be self-reliant. Secretaries that call other secretaries to schedule meetings for their bosses must chose to learn and use the electronic scheduler. By the same token managers, supervisors, and organizations must chose to accept and expect workers as being self-reliant. The confluence of technologies has changed the way we do business forever. Competitive and innovative organizations will focus on eGovernance first. This means eHPP readying their board of directors, stake holders, managers, knowledge workers, even suppliers, and most of all their IT infrastructure. Those who do not risk obsolescence -- which could happen in just minutes.

"We have met the enemy, *they* is us." Pogo.

Attachment A The enormity of eHPP compared to core systems.

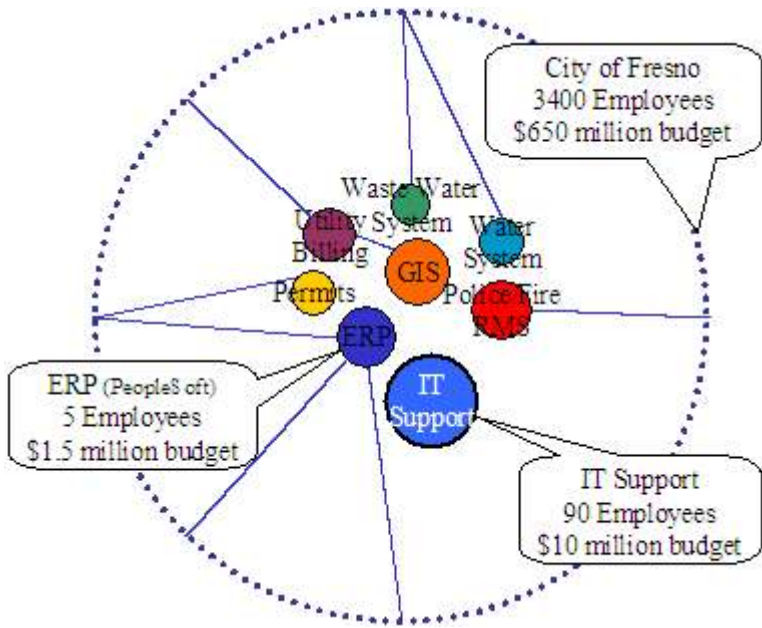


Figure 1

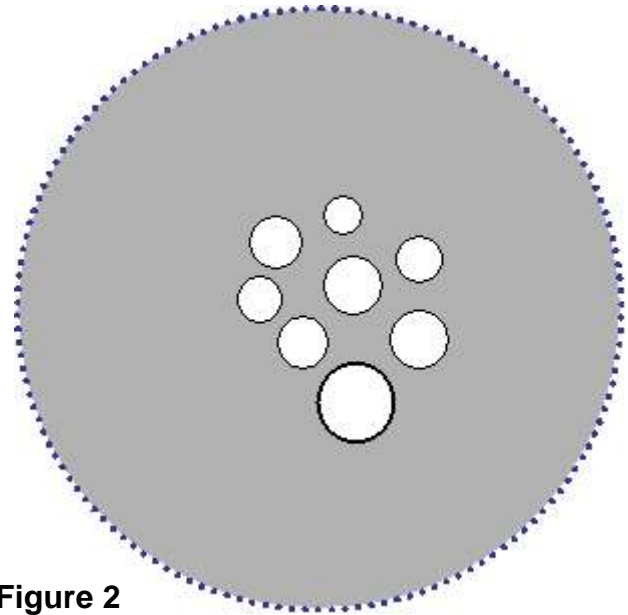
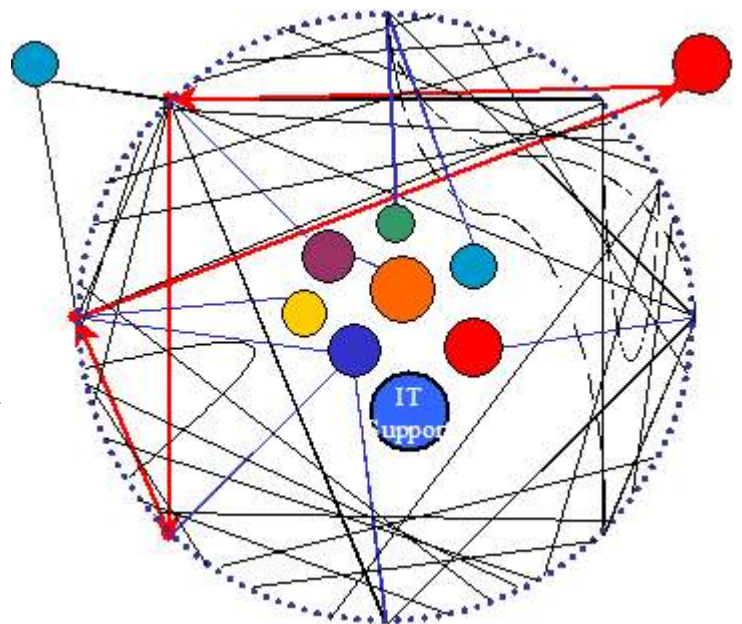


Figure 2

Figure 3



The figures illustrate the enormity of the task to electronically automate human and/or paper processes in an organization. The effort is hundreds if not thousands of times larger than the total of all previous IT implementations.

Figure 1. The large outer circle represents all the employees and the full cost of an organization, in this case the City of Fresno. The smaller circles inside represent all the core technologies and the full range of IT support in use by the total organization. Each line represents 50 users connected. Note that the bulk of processes and cost are outside the core IT systems. These are human and/or paper processes in need of electronic automation.

Figure 2. The large circle is shaded to show how enormous this new e-automation space is compared to the already functioning/traditional core systems. The smaller white circles represent IT, ERP and all the core BPM type systems. Keep in mind this is a city that is one of the more technologically advanced in the nation.

Figure 3. The final circle illustrates by using connecting lines, just a small sample of the thousands of human and/or paper process linkages within the organization between employees. While core systems i.e., PeopleSoft and others are essential they represent only a small fraction of the human/paper processes occurring within the organization, many of which could be e-automated. The City of Fresno has identified that at a minimum there are at least 5,000 human/paper processes (3,000+ paper forms) needing to be e-automated. Many of these are maintained in an employee's head and not documented. If the employee leaves or goes on vacation, the process is shut down until a new person figures it out.

Attachment B

Cost to produce vs. value of production. Productivity is measured by the ratio of change.

It is important to understand there are basically two components to any organization, one is the cost to produce and second is the value of the product or service (figure 4). All organizations are dynamic, nothing remains static, hence one must progress or die. Progress is achieved by continuously being more and more productive.

Succeeding means either reduce the costs of production or increase the value of the goods or services.

Productivity gains, or drops, are measured by comparing the degree of change, or the ratio, between cost and value (figure 5). The bottom line is, can a business produce more widgets (or a higher level of service) with the same number of people? If not, can it produce the same number of widgets with fewer people (figure 6)?

Figure 4

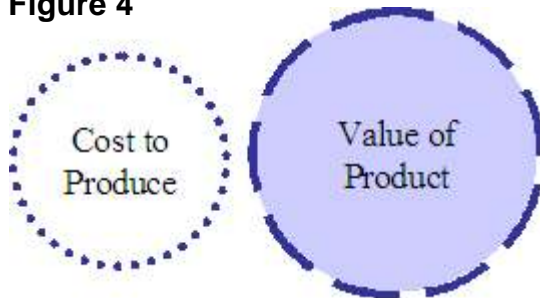


Figure 5

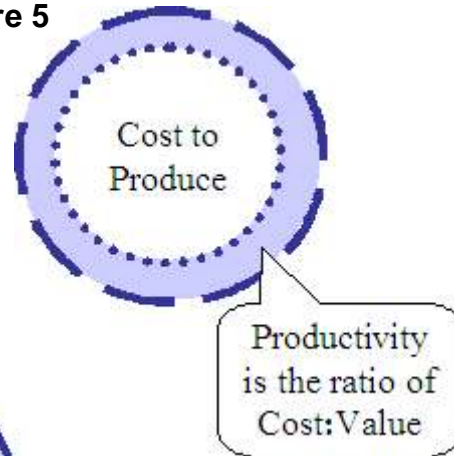
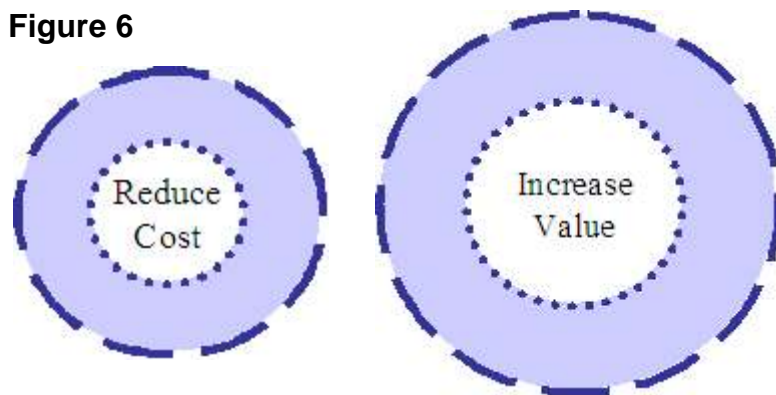


Figure 6



Hap M. Cluff is currently Director of Information Technology for the City of Norfolk, VA. Prior to coming to Norfolk he was the Chief Information Officer and Director of IS for the City of Fresno, the sixth largest city in California. He founded Business Process Sciences, a firm specializing in eAutomation consulting. At Fresno, Hap centralized IT services for all departments and implemented the first IT strategic plan. During his tenure he implemented the largest IT project in city history (ERP project). He also implemented the city's first ever e-automation project.

Hap has worked in the banking and health care industries. He was V.P. and Manager of IS for ValliWide Bank, where he managed the IT portion of rapid growth through multiple mergers from 12 branches to 42 in under two years. He also handled IT matters for a merger between the two largest hospitals in the Central Valley, CA. This included facilitating the decision processes and merging 67 different computer systems and two telephone systems. He has also done extensive consulting on IT systems management, has experience running his own computer services company, and is an instructor of management at the university level.

Hap has a BA degree in Communications, Public Relations, and Radio and TV from Brigham Young University and a Master in Public Administration (MPA) from California State University, Long Beach. He has also finished the course work towards a PhD in Government, Public Administration at Claremont Graduate University.

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