

# **IT Deployments in Heterogeneous Environments**

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## **Introduction**

Being involved in public and private technology deployments that ranged from concepts to large-scale efforts (10,000+ seats) has been quite the eye opener over the past fifteen years. In the process I have worked with open-standards organizations and a number of top-tier vendors. It has been quite a ride and one full of excitement and frustration. Case in point: The coauthored book on Enterprise Architecture (EA) and Service Oriented Architecture (SOA) with Rex Brooks only reinforced my belief that the IT world is currently a mishmash of technologies that is more divergent than convergent. As a result, many large-scale projects fail because of a number of reasons that could benefit from a better understanding of the IT landscape.

### **I Live in Manhattan, so try not to Sell Me the Brooklyn Bridge**

Creating Proof of Concepts (POCs) for high-level audiences provided me with one valuable insight. Cutting through the marketing crap and getting to the core technology being promoted. For example, I attended a three day conference on Cloud Computing and was asked to review four vendor presentations. In a nutshell, the only difference between them was the slide color theme because the basic content was all the same. Cloud Computing is the new saving grace of IT and the world will be a better place. To me Cloud Computing is really about plumbing and instead of using straight pipes & elbows, this effort uses routers and bunch of servers. Rather than carry water or waste, it carries a signal. Sexy and enticing to some, but not all what it is cracked up to be. As a result, I see the bigger picture as not about slick virtualization marketing material, but how do we make the IT landscape more open and agnostic.

### **The Holistic View from a Pencil Pusher**

I want to make it clear from the start that while Web sites list me as the project manager on many efforts, in reality all I did was manage simple project plans and schedule meetings. In my estimation I was more of a glorified pencil pusher than manager, and the people who really deserve the credit were the ones who built the applications. However, I did gain a better understanding of the Federal IT landscape. For example, presenting POCs at the National Science Foundation (NSF) was not only an honor, but it also exposed how things worked at the Federal level. While I have helped to deploy software solutions in places like Australia, Canada, and Hong Kong nothing prepared me for range of systems run by the Federal Government, from the most simple to the most complex. As a result, I joined open-standards organizations like OASIS to gain a better understanding of this topic. The more groups I was exposed to, the more I realized how little I knew about how things worked. After two years of research with Rex Brooks we published our first book titled EA & SOA: Fad or Foundation?, which is currently listed on the Information Management Web site in four parts. It is far from perfect, but we did manage to gain some favorable reviews. What the research did bring out was that open-standards made a great deal of sense, but that some standards are more open than others. As a result, Mr. Brooks and I spent more time working on data flow models that focused on bi-directional information flow regarding widely used offerings from IBM, Microsoft, Oracle, and Sybase. While getting press was never the primary goal many of these reports did manage to make it on to well respected Web sites (References).

## **Built to Standards**

The term “built to standards” is somewhat nebulous at times. For example, I was on a project using the IBM WebSphere Application Server and two different database offerings (IBM DB/2 & Oracle 10g). I can appreciate the fact that Java Database Connectivity (JDBC) is built to a “standard” and goes through the required process. However, I can also appreciate the fact that not all JDBC offerings are seamless regarding their integration properties. For example, it was far easier to work with the “sticky stuff” in-between the IBM Application Server and IBM database than with the IBM Application Server and Oracle database. Point being, all of these offerings were built to standards, but each required a different level of work to achieve true bi-directional information flow. To make matters more interesting one only need to add database offerings from Microsoft and Sybase into the mix to make a complex environment even more complex. In addition, throw-in a few open-source database efforts and now you get the picture. To boot, we are all talking about one ecosystem.

## **How to Test Technologies for Large-Scale Deployments**

Since 1997 I have been asked to lead software teams to test their offering at some of the most advanced facilities in the world. It was not only an educational, but a humbling experience. The biggest takeaway was that every software offering tested behaved differently at 100, 1,000, and 10,000 concurrent users. Not only was reengineering required, but these offering had different behavioral characteristics on the z/OS, UNIX (e.g., AIX, HP-UX, Solaris, etc.), and Windows operating systems. Scalability is a key factor in the Enterprise and learning how an application behaves is important before wide-spread deployment. In essence, it is far better to expose issues before a technology is deployed, rather than after it has gained broad adoption. I have seen entire code rewrites as a result of testing, which really paid dividends in the long-run. Cutting corners early-on usually leads to headaches at a future point in time. My observation is that if an entity is planning on a large-scale deployment it should book some time (3 to 10 business days) at a well-respected testing facility like IBM Waltham to gain a better understanding of how their offering works across different platforms and different scalability benchmarks.

## **Heterogeneous Example: FEMA & DOD**

A few years back the team I was working with presented a scenario to a high-level group in Washington D.C. that dealt with a terrorist attack on U.S. soil. The big takeaway was that a natural event like Hurricane Katrina would involve DHS (FEMA), but an attack like 9/11 would not only involve DHS (FEMA), but also the DOD. Hence, an RPG hitting a chlorine filled train car near a full stadium of people watching a football game on a Sunday afternoon would bring-in at least two Federal Agencies to deal with the situation. From the Ivory Tower we see two large ecosystems that must have a seamless information flow. For example, information on wind direction and speed must be pushed to tablets & smartphones held by first responders, which will help to determine the direction of the gas cloud, while also giving a heads-up to hospitals and morgues that will then report back on the availability of beds and the like. Not only must

the DHS (FEMA) ecosystem be able to communicate within itself, but it must also seamlessly communicate with the DOD ecosystem to deal with this type of catastrophic event.

Hence, the heterogeneous mantra should be for technologies to adhere to open-standards and be in machine readable format, so they may be a true value add. The key here is promoting an environment that can be as “agnostic” as possible to foster true bi-directional information flow. Regarding the agnostic argument, creating esoteric fiefdoms in the public and private sectors only promotes IT divergence, rather than IT convergence. Hence, new heterogeneous database access tools are an important step in helping to create a true agnostic IT environment. *Please Note: We are a long way off and we may never reach a true agnostic IT environment, but any improvements are welcome.*

## **Why Many Large-Scale IT Deployments Fail**

There are many reasons why many large-scale IT deployments fail, but one reason comes up more often than others, because clients and vendors most often want to take the “Big Bang” approach. I have seen account managers push for too much Day One functionality, which led to missed deliverables and many fires to put out. In most meetings I hear “We Need” over and over again, along with these capabilities are needed to keep pace with our competitors offerings. That may be all well and good, but it has been my experience that a measured approach is preferred if possible. For example, building the foundation with twenty Day One functions and adding twenty more over the next ninety days to get the building blocks in place has always served me well over the years. Yes, there are many reasons why projects fail, but taking on too much too soon can cause irreparable damage. I have been involved in projects that have gone well and some not so well. Poor code and sloppy project plans do not help matters, but I have seen disastrous results when clients think they can take on the world in one swoop. I can appreciate methodologies like Agile, Iterative, and Waterfall, but the problem was not the model used, but properly managing expectations. In a nutshell, clients want what they want and vendors want to make money. No mystery here, but when deliverables are not realistic, then all parties suffer.

## **Postscript**

The goal of this report is to leverage knowledge gained over the past fifteen years in the public and private sectors regarding large-scale IT deployments. Accordingly, my reports are currently on various Web sites and may be seen via live links in the Reference section of this document. Again, it is not about press, but exposing things as they really are. The W3C and OASIS are doing a fine job in the open-standards space, but there really needs to be more cooperation by the private sector in making the IT landscape more agnostic as a whole. Regarding recent efforts, the latest coauthored StratML White Paper with Ranjeeth K. Thunga has been of great value in exposing the problems and issues associated IT deployments in heterogeneous environment. On a final note, IT fiefdoms should join Old World fiefdoms in the history books as outmoded and outdated models in promoting an ever more connected and transparent world.

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