# How to effectively manage today's IT challenges through Agile Principles & Practices

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It can be a real challenge for a large organization to manage its IT operations when it does not have the right fusion of people, an effective delegation of leadership, the appropriate set of tools, and processes, and the correct type of environment and resources. As the organization grows, so do its needs, which introduces complexities in almost every area of IT operations, whether applications, infrastructure, or the new project work itself.

In many typical cases, applications are developed in one department to meet its needs without much planning. These grow exponentially until no unit can effectively function without it, which requires examining why it was developed 'on the fly' in the first place. As problems stem from that, so does the problem of maintaining the disjointed application and its ever-growing and often troublesome database.

On the infrastructure side, some organizations love recycling, while some find it tough to part ways with the server they bought not that long ago. Moreover, some departments find it difficult to justify the cost vs. the benefits of buying and replacing a server that appears to be efficiently and smoothly running the internal app server during its short lifespan, even though it runs a greater risk of failing any time even though the application is not high availability.

The IT manager has many challenges, from hardware and software resources to staff, but the IT organization must still operate smoothly and support the business no matter what. These challenges are a natural part of any IT organization and, therefore, require that IT carefully assess the way it conducts its business. This is especially critical for those finding it difficult to address these challenges.

The Agile Manifesto states:

- We are uncovering better ways of developing software by doing it and helping others do it. Through this work, we have come to value:
  - ***Individuals and interactions*** over processes and tools
  - ***Working software*** over comprehensive documentation
  - ***Customer collaboration*** over contract negotiation
  - ***Responding to change*** by following a plan

*Source: Beck, Kent; et al. (2001): "Manifesto for Agile Software Development"; Agile Alliance*

In this article, you will notice that Agile principles are implicit in each IT challenge discussed in this section. Moreover, this is intentional.

In addition to managing software/hardware and human resources, IT must identify and focus on a myriad of critical factors and anticipate obstacles before they occur. Costs, processes, technology changes, and the ability to visualize future opportunities are all essential elements that must be predicted and planned. The 'top five' tips IT managers should strictly adhere to are:

- Communication
- Planning

- Testing
- Vision
- Support & Maintenance

While there is a myriad of challenges facing IT teams, I want to highlight five of the most crucial challenges that illustrate the need for and use of these five effective ways to tackle these challenges:

**Security:**
A good example of a network security breach is the US government's healthcare website, which has had its sensitive information compromised because of failures in the website's security. Mostly, systems protecting the customer's (applicant) safety and privacy were never tested, because of deadline restrictions. In addition to threatening customer safety, the safety of other agencies including the IRS, the Social Security Administration, and the Department of Veteran's Affairs, which interface with the compromised hub, were also put at risk. That is why strategic project planning and communication must be at the forefront of every project. Moreover, strict guidelines must be respected and adhered to during each stage of the development process. Moreover, testing and retesting of each project component. Then, of course, provide maintenance of the new system, take preventive measures, and eliminate potential problems such as downtime or security breaches, which are unacceptable on any level.

Moving beyond dated or overly complex systems and towards technological innovations also requires IT to address similar concerns and deliver simple, practical solutions to the organization, and sharing of an ever-increasing amount of information. Not only must new technologies be introduced, but they must also seamlessly interact with existing, older ones. More and more companies are recognizing that their customers want to connect with their businesses through applications and social media. It is, therefore, essential to construct

technologies to facilitate communication and interaction with systems while protecting their security and integrity. These systems must also be available to company staff while remaining invisible to outside entities. Any breach will impact not only the company's financial wellness but also client confidence, so appropriate security measures such as encryption, authentication, and other standard measures must be thoroughly tested and integrated from the start.

**Virtualization:**
Creating virtual processing environments that could be used by a varied assortment of users is not only a must but one that requires deep knowledge not only of each department's applications environment but how processes connect and communicate with each other. Each user's snapshot of the virtual environment must be current and accurately portray how professional applications will look and behave in the 'real world'. The 'virtualized' IT environment demands larger and sounder storage measures. Today for most large enterprises, their IT systems are aging rapidly and must be upgraded to meet new requirements. This can present new challenges as the infrastructure may be somewhat piecemeal, which requires careful planning to ensure that new technologies are seamlessly connected to the older systems so that all network components communicate with each other effortlessly.

**Cloud Computing Services & Social Media:**
Cloud computing, while advantageous, presents new threats to not only application security but to the entire infrastructure as a whole, and must be planned for and prevented. This requires the rapid development and deployment of new technologies being built to provide authentication for all users wanting access to the company's systems.

Information collected through social media merges with selling and marketing data to provide a valuable bank of information. This, in turn, necessitates the construction and implementation of different data repositories, statistical

data, and new tools and processes to distribute and analyze the collected information.

**Globalization:**
Organizing offshore computers on the computational grid is essential for providing unrestricted access to all computers on the network, regardless of geographical location or system configuration. A global environment requires that the entire infrastructure, including processes, be standardized to facilitate growth and expansion across all departments worldwide and enable updates and maintenance of software on open-source systems.

**Change Management:**
More than ever, IT professionals must recognize, plan for, and manage network and organizational changes. Agile developers especially realize the importance of responding to change, since even the best-laid plans cannot prevent a few glitches. Globalization, continually developing processes, and emerging technologies all require strategic approaches to the successful management of business/technologies change management. What are the changes required, how will they affect the organization as a whole, and what training/mentoring will be needed to make the transition smoother? This is especially crucial when adopting newer methodologies like Agile.

**Cost (of IT Services):**
Sometimes it can be a challenge to convince CFOs and other financial principals why the client company should do away with recently acquired, conventional systems and processes instead of emerging technologies. In this instance, IT should explain why upgrading early will be beneficial to the company and save it money in the long run. Other costs to consider are adding on to existing infrastructures (hardware/software acquisition), technical support, and training.) In this scenario, vision, planning, and communication all have an important part to play in identifying costs and even

eliminating non-essential client expenditures.

**Summary**

To summarize, managing IT operations efficiently is a critical part of improving business operations. Recognizing key elements and fostering clear communication of all strategies and processes creates a collaborative vision that translates to success.

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