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EXECUTIVE PROGRAMME

A Lifecycle Approach to Cloud Computing

Management Summary

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A Lifecycle Approach to Cloud Computing

Peter Drucker famously said that there is nothing so useless as doing efficiently that which should not be done at all. In other words, it is better to do the right thing poorly than the wrong thing well, and effectiveness usually trumps efficiency. This has become an important catch-phrase of management literature, but it raises several obvious questions: Does the 'right thing' exist? How do you know what it is?

Take something simple like project management. Within this field there are many techniques that declare themselves to be the '*right*' way. On the one hand you have formal, well defined, rigorous, planned and structured techniques (such as Six Sigma), whilst on the other you have more informal, principle-driven, dynamic and hence reactive techniques (like Agile development). How do you decide between them?

Q. Which is more '*right*'?

A. It depends on the context.

Choosing the '*right*' or most appropriate way of dealing with an activity depends upon understanding the context of that activity (is it an *innovation* or is it more *commodity-like*?) and then selecting a method suited to that context. When dealing with a well-defined, standardized and often-repeated activity such as a company-wide desktop refresh, then an approach like Six Sigma is appropriate because it is designed to reduce deviation and maximize efficiency for a repeated task. However, if you are developing an entirely new activity implementing a newly discovered concept (an *innovation*), then Six Sigma is less appropriate because it attempts to standardize that which is constantly changing. In this circumstance, Agile development would be a better method.

Q. Can we identify appropriate methods for activities?

A. Yes, but the answer changes.

Take an activity such as CRM (customer relationship management). In the early 1980s, this activity was a rare innovation, but by the mid-1980s custom-built database marketing systems had started to spread throughout the industry. As these became more popular, products such as Siebel appeared, and we entered a period of vendor competition with ever more feature-complete CRM systems. By the late '90s, CRM had become so widespread and feature-complete that questions arose around whether this activity provided any differential value: was it simply a cost of doing business - more of a commodity? By the early-2000s utility services, such as Salesforce, had emerged. CRM, a single activity, had evolved from an *innovation* to a *commodity* provided through utility services.

Examination of many business activities demonstrates this to be a recurring pattern: innovation, custom-built examples, productization and eventually commodity provision. The LEF calls this pattern *lifecycle*. Thus, choosing the '*right*' project methodology depends upon not only the activity but also its context in terms of the stage of its lifecycle. As with CRM, what is '*right*' today is not necessarily '*right*' tomorrow.

Q. Can we identify appropriate methods by how activities change over time?

A. No and yes.

We have already seen that in order to be able to determine which is the 'right' method, we need to know whether the activity is more of an innovation or a commodity, and where it is in its innovation/commoditization lifecycle. Way back in 1962, Everett Rogers provided a basic framework known as 'the diffusion of innovation', which demonstrates how an activity spreads in a society over time: it changes from something new to something common along an s-shaped curve mapping its take-up over time. The problem is that there is no single s-curve. The actual shape varies with the activity, and whilst you can predict how a particular activity might be adopted, you cannot predict how the activity itself will change with time. However, Rogers also found that as an activity diffuses, it becomes more mature, more defined and more certain.

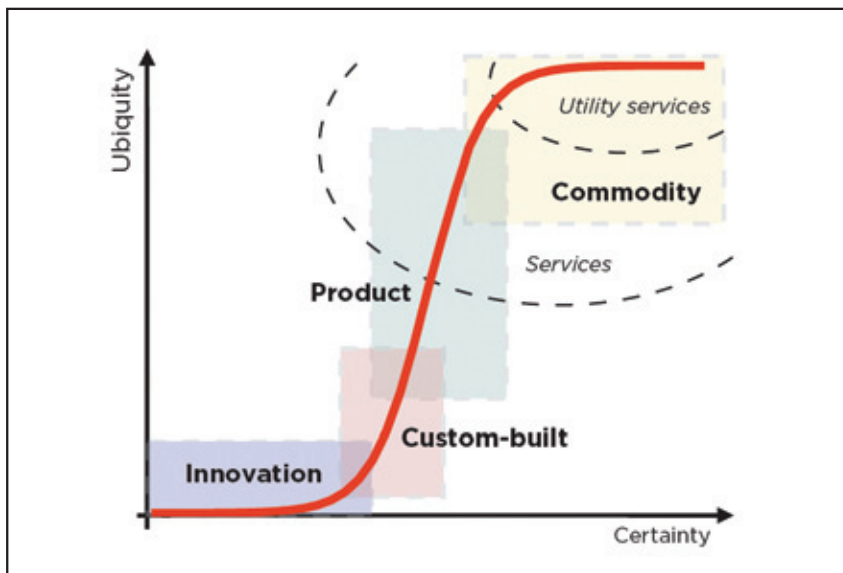


Figure 1 - A typical lifecycle through four stages

By replacing the axes of adoption and time with axes for *ubiquity* (how commonplace an activity is) and *certainty* (how well understood an activity is), a common s-curve pathway emerges showing how activities evolve from innovation to commodity - their *lifecycle*. Figure 1 shows a typical lifecycle graph, passing through four stages.

Whilst we cannot predict the stage of lifecycle based just on time, we can identify the stage of lifecycle by looking at how well understood and widespread the activity is. We can then predict what will follow next by simply following the standard evolutionary path. By taking time out of the equation, we now have a tool to enable us to help identify the 'right' method of managing something.

Q. Can I use this to determine the 'right' way of managing IT?**A. Yes and no.**

IT isn't one activity but a mass of activities. Plotting the frequency of activities at the four stages of their lifecycle provides a profile for an organization, like the example shown in Figure 2.

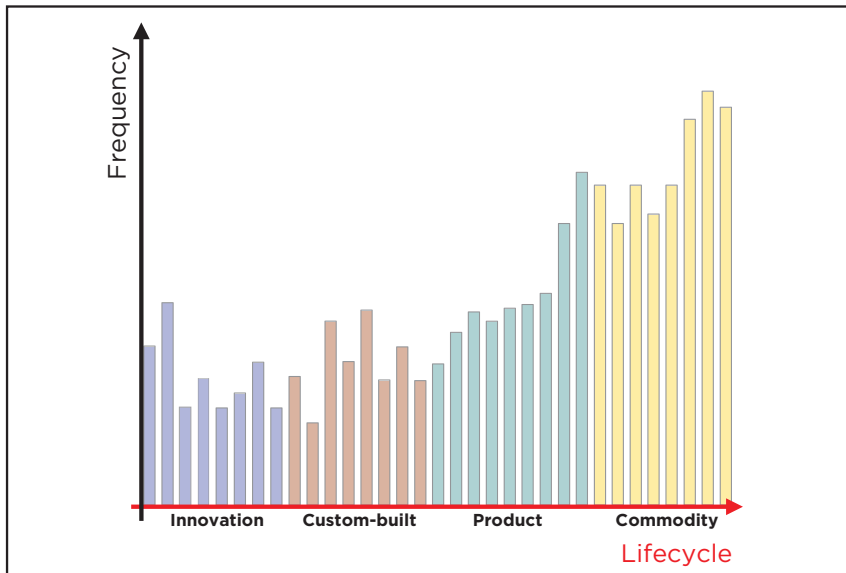


Figure 2 - An example profile of lifecycle activities within an organization

This profile explains why even though you can determine what method is appropriate for a specific activity, there is no one-size-fits-all approach to management. The two extremes of innovation and commodity have diametrically opposite properties and concerns, and the techniques, tactics and methods needed to manage each are entirely different, so each organization requires management approaches that suit its specific profile of innovation and commodity activities.

This matters because those innovations are your future source of differential advantage and survival in tomorrow's market whilst those commodity-like activities are your source of operational efficiency and survival in today's market. This creates a well-known management paradox:

"Survival requires efficient exploration of current competencies and 'coherence, coordination and stability'; whereas innovation requires discovery and development of new competencies and this requires the loosening and replacement of these erstwhile virtues!"

Those who manage organizations are therefore caught on the horns of a dilemma: how to be standardized and efficient as well as innovative and new, in order to ensure survival both today and tomorrow? The effects of this on businesses can be seen in their constant restructuring to cope with new paradigms, and in the yo-yoing of popular management theories between opposites in a scramble to meet shifting and conflicting demands.

Even though there is no single *'right'* method for managing IT, you can achieve a more effective balance by embracing multiple methods and understanding which methods are appropriate when.

Q. Won't this make managing IT more complex?

A. Yes, but you probably have no choice.

Learning how to use multiple methods is inherently more complex than a one-size-fits-all approach, so it can be tempting to avoid this management overhead. Whether you have the luxury of choice depends upon your competitors. If, for example, your competitors have decided that the *'right'* method of project management is Six Sigma then the game simply becomes who is best at Six Sigma. However, if a competitor is using Agile for innovation and Six Sigma for commodity activities, then even if they are poor at implementing Agile they will tend to innovate faster than those only using Six Sigma. In these circumstances you have little choice but to adapt.

Getting the balance of methods right requires rethinking how you organize, and recognizing that what really matters is not innovation or efficiency themselves, but how you continuously manage the path between the two. The LEF is increasingly aware of emerging management patterns in the web 2.0 world, which appear to be more effective at dealing with this balance. Examples can be found in companies such as Salesforce, Amazon and Google. We will be studying these models closely in our future lifecycle research.

Q. What has this got to do with the cloud?

A. Everything.

Despite the countless definitions of what is and isn't 'cloud', cloud computing simply represents an evolution of a wide range of activities across the computing stack from the product to the utility services phase of their lifecycles. This view exposes many modern misconceptions of cloud computing – for instance, the idea that the cloud will reduce IT expenditure; in general, it won't, because you'll end up doing vastly more stuff. It also reveals a range of second-order impacts such as accelerating innovation in IT, reducing barriers to entry in many industries, the growth of open source and higher levels of market disruption.

Amongst these is the potential for the cloud to increase organizational strain within IT as companies come to terms with a world of faster innovation, ever-greater efficiency and no single *'right'* way. This is where the lifecycle can help you, because whilst it may be better to *'do the right thing poorly'*, the trick has always been to identify what that 'right thing' is in the first place.

The enclosed DVD (and future research papers) will explain and explore these subjects in more detail. The DVD starts with an overview of lifecycle and cloud computing, followed by a closer examination of how these ideas relate to emerging patterns of business and IT management.

Identifying these patterns and their many implications will be the long-term focus of our *Organizing IT for the Future* research.

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