Design for digital

A business vision to prepare communications service providers for the cognitive era

Get started

7. Making it happen: implementation approaches

7.1 The need for a fresh approach

Traditional transformations usually adopted traditional, waterfall methods. Defining a long list of detailed requirements was based on an assumption that users knew exactly what they wanted. This was followed by design and development with very limited user participation. The final stage was testing against the contractual set of requirements. In many cases, this drove more focus on reaching a milestone than on delivering a quality product for the business. The process was expensive, slow and frequently led to limited business outcomes.

We believe that technology should not be a barrier to market innovation. New and improved features can be built, tested and made available for operational use within days and weeks, not months and years. Operating models designed for large waterfall project delivery constrain business innovation and impede organisations from maximising the benefit of agile transformation.

We are helping a number of large CSPs to transform themselves into more agile organisations. The results are remarkable. We supported a major US CSP to build an agile delivery centre in Dallas. Our joint team managed to reduce the average time from order capture to service activation from 5 weeks to 5 days for large enterprise customers.

IBM helped a major European operator to set up their Digital Lab, by providing coaching on IBM Design Thinking, agile delivery and DevOps. The project is part of "Full Digital Programme" aiming to accelerate the shift to digital channels. The operator was able to deliver the first digital apps for "Home move" in less than ten weeks. Now we are supporting the operator to scale the digital lab approach across their entire organization.

7.2 Skills transformation

CSPs will face the challenge of how to encourage staff to adapt their skills to the new business reality. It is an important element of the transformation.

IBM is going through a similar transformation at the moment. New skills around mobile, cloud, analytics and design are required in a short period of time. Internally, we have created the Think Academy program to encourage all our staff to gain new skills. Think Academy uses a mix of social technology and on-line learning to enable this transformation, with an emphasis on experiential learning.

THINKACADEMY

337 000+ IBMers participated in 2014	**42K IBMers have used** the Mobile App
43 569 comments and stories shared	**5.54M** video views

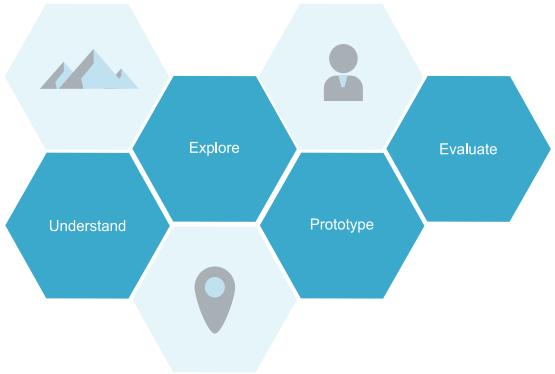
7.3 Design thinking methods

In our view, any transformation should use some form of design thinking to ensure customer centricity. We use IBM Design Thinking as the overall approach to design vision and customer strategy. It is based on the principles of design from Stanford D-School to create empathy with users and drive user-centred strategy. It keeps the customer at the centre of everything we do while creating a powerful vision (commanders intent), collaboratively prioritising outcomes, and identifying quick 'try and test' opportunities.

Design thinking is ultimately **Experience Focused**. It is a powerful way to define and solve problems, diverging on many possible solutions, organizing and remixing choices to help decide and converge on a focused direction.

Design a vase	Design a better way for people to enjoy flowers in their home
Product or Task Focused	*Experience Focused*

There are many aspects of design thinking, and many different ways to implement it, depending on which university or consultant you ask. IBM's approach is built on four basic steps, or mental spaces, to be pursued iteratively, not linearly. They are : understand, explore, prototype and evaluate. An important part of the approach is three core practices: hills, sponsor users and playbacks. Hills help to align the team around major market-driven goals. Sponsor users are select clients who work alongside the team and with whom we have legal agreements that clear the way for deep collaboration.



The design and development work is iterative; teams use any number of techniques to share their work with one another. IBM Design Thinking formalizes these sessions into iconic playback milestones that align teams, stakeholders, and clients around the value of your offering.

Design Thinking is a great approach for multiple stakeholders:

- for leaders to guide their teams to achieve market outcomes
- for project teams (business, design, & technology) to develop exemplary solutions
- to transform companies into becoming client-centred

7.4 Agile development and DevOps

$$1^{\text{(Design Thinking)}} + 1^{\text{(Agile development)}} + 1^{\text{(DevOps)}} > 3$$

Design thinking methods are closely linked with agile delivery methods. The outcomes of design thinking – valuable customer experiences – can now be implemented rapidly using agile development and DevOps. The three elements, if used in conjunction, create substantial value:

We have radically improved our application development and delivery through the use of Agile around the globe, yielding significant results and setting new benchmarks in execution and outcomes:

- Reduced cycle-time for projects by >30%
- Increased asset reuse by >50%
- Delivered >20%+ defect reductions / 100 FP and delivered 33% YTY component cost reductions

Cloud based networking opens up the ability to use a similar approach for software-based networking to help rapidly invent new services, update services as well as remediate services.

Previously, it could take weeks and months just to enable new services, test them and deploy them for operational use. In the software development environment that is available with the cloud today, software is composed rapidly, tested and moved to production and ready for deployment through agile development methods and tools. Agile Network DevOps can help to improve and speed the return on investment in the network. Combining Agile Network DevOps with Real-time OSS creates a whole new end-to-end ability for network operations through OSS for Cloud based networking.

Agile Network DevOps help take innovation of a new service from concept to reality. Using agile methods and tools, network services and functions can be composed instead of hardwired. Network services can be tested using the same virtual environment to allow for rapid deployment of a test environment and traffic at scale, and then when the service has been tested the resources used can be commissioned for other purposes.

Agile Network DevOps also help in bringing together the new software integration environment brought on by NFV and SDN in Cloud based networking. The power of the cloud can be used for software development to manage the various levels of network software, enable the compatibility and confirm the viability of network function combinations that make up the services enabled on the cloud based network.

Agile Network DevOps can also be used when combined with cloud innovation to allow for exposing new network services to an emerging cloud development environment. Network services created can be exposed to a cloud innovation environment for new areas of innovation for mobile applications, Internet of Things and enterprise enablement. Services can be exposed and integrated with these new areas of innovation rapidly, enabling a new speed of innovation by providers and their customers. Using Agile Network DevOps helps reduce the cost and the time that is required to enable new services while maintaining the governance to enable the service levels expected.

In a carrier or service provider environment, it is essential to verify the operation of new virtual network functions before deployment in production. IBM has developed patent-pending technology for automating the deployment of virtual network functions and the corresponding test functions on a cloud infrastructure, and once testing is complete for using SDN to move the functions into production.

7.5 IBM Interactive Experience

As part of our own digital transformation we have created IBM Interactive Experience. This is a new breed of digital agency, bringing together strategy, analytics, design and technology to create engaging customer experiences that deliver growth for our clients. The practice leverages IBM's major investment in research, as well as expertise in data analytics, social, cloud and experience design to create, implement and manage digital experiences at scale.

In 2014, IBM Interactive Experience was ranked as the largest digital agency worldwide by AdAge. It is this scale that will be useful for CSPs as we understand the dynamics of people (consumers, SOHO, SMEs and large corporates) as well as the dynamics of experience and data.

We also bring to bear a myriad of partnerships, such as those with Apple, Twitter, Microsoft and Adobe, to drive innovation and thought leadership for our clients.