Introduction: Technology Building blocks of digital transformation

In the introduction to the book, I had mentioned that digital transformation is multi-dimensional, and to bring clarity, I had broken it into seven building blocks. In this section, I will focus on technology, which is the heart of digital transformation.

The digital technology stack further has seven key building blocks. These are Design/Customer Experience, Analytics/Data Science, Automation/Operations Transformation, Artificial Intelligence (AI), Data Infrastructure, Blockchain, and Cloud. These play a critical role in the execution of digital transformation; they are the collective force behind successful digital programmes.

Digital transformation has to be end to end

The most important aspect of these technology building blocks is that they are not independent but are interconnected. Enterprises realize transformative value from them when they are connected end to end. These building blocks represent different layers of the technology stack; connecting them tightly creates a virtuous cycle.

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Digital must start with design thinking to define strategy and customer experience. The whole experience must be thought up from scratch and redesigned to deliver 'what it should be' rather than starting from 'what it is'. One of the distinctive aspects of the digital customer experience is that it can be highly personalized and targeted at the individual. This is enabled by analytics. Analytics also enables customer insights, analysis of sales performance and operational efficiencies, and informs other key business decisions that help drive the business.

The superior customer experience that digital enables has to be fulfilled by internal operations. Typically, digital requires significantly improved response time, and this requires a redesign of processes, which is enabled by automation. Artificial intelligence (AI) can power enterprises to reach the next frontier of digital transformation. The self-learning ability that AI provides can sharply enhance both customer experience and operations efficiency over time.

The bedrock of everything we have talked about – Design/ Customer Experience, Analytics/Data Science, Automation/ Operations Transformation, AI – is Data. All these technology building blocks require high-quality and deep data. Data is also where the recursive relationship or the virtuous cycle between the technology building blocks happens.

Digital is leading to a data explosion – in volume, variety, and velocity. However, to realize the full potential of this 'digital data deluge', enterprises have to upgrade and build scalable data infrastructure. This is easier said than done. Most enterprises struggle with getting high-quality, harmonized data together.

Cloud, which began as an infrastructure capability helping provide scalability and making costs variable, is now becoming a key enabler for transformation across the entire technology stack that we have mentioned. Cloud's scope and capabilities are increasing tremendously, and many enterprises are transitioning to a cloud-native architecture. It provides them a great opportunity to upgrade

the various elements of the technology stack and, in particular, to address the data infrastructure and quality issues that we have talked about.

As you can see, the various technologies that are the building blocks of digital are like the parts of an orchestra. Each of the parts needs to be very good, but only when they sync together that beautiful music happens. That beautiful music, in our case, is *realizing the full potential of digital transformation*!!

In this section, I have covered in detail the various technologies that are the building blocks for digital. I have shared the role of each of these technology building blocks, the challenges in leveraging them, and their future possibilities. A lot of these perspectives are influenced by the work we have been doing at Incedo with our clients. Incedo's focus is end-to-end digital transformation, and it has been fascinating to work on, and in the process observe and learn from, the digital transformation journeys of many marquee companies across industries.

Chapter 1: CX Design – the starting point of the digital transformation journey

- Web/mobile interactions are necessary but not sufficient by themselves to deliver the gold standard in customer experience. The digital journey must progress beyond the first touchpoint of the consumer to the entire life cycle of experiences. Digital natives have done this successfully in various industries; legacy enterprises are expected to achieve the same.
- Customer experience is the new face/promise of brands that sets the winners apart from the losers. Driving higher customer loyalty is the key to generating shareholder value in the digital age.
- Successful transformation programmes take a holistic approach – defining the experience, one that puts the consumer at the centre, rejigging the organizational processes to deliver the

experience seamlessly, and enabling end-to-end integration for consistently delivering high-quality experiences.

Chapter 2: Analytics - the source of competitive advantage

- Digital experience and its promise of personalization can be delivered effectively only when analytics informs the 'man + machine' agents to engage with consumers proactively in the digital age.
- So far, analytics has been deployed by traditional enterprises to add incremental value, as opposed to the way digital natives have deployed it, which is to truly make it a source of competitive advantage.
- There is a wide gap between the promise and reality of analytics. This occurs due to six key reasons, which I outline in the relevant chapter. These must be carefully addressed by enterprises to make analytics a source of competitive advantage for themselves in the digital age.

Chapter 3: Operations Transformation – the key to realizing the full potential of digital transformation

- Delivering the promised customer experience typically requires an end-to-end overhaul of the business processes.
- Even today, many traditional enterprises are stuck with a control mindset and have cumbersome processes. This often leads to bureaucracy, slow speed, and thus friction for the customer.
- Enterprises need to go beyond incremental approaches to operations and build confidence by embarking on more transformational and end-to-end change programmes. The changes should include data-driven measurement of operations, intelligent automation that goes beyond RPA, and leveraging of AI for self-learning of processes.

Chapter 4: AI - critical to reach the next frontier

- AI is becoming mainstream, especially among digital natives. However, it has not yet reached scale in many traditional enterprises as it is embraced mostly as a 'feature' and not as an 'architecture'.
- AI has the potential to drive the next frontier of digital transformation, both on customer experience and operations transformation. To make this happen, there are four key considerations, which I have outlined in the chapter on AI.

Chapter 5: Data - the fulcrum of the digital technology stack

- Data is the centrepiece of digital transformation, enabling design, analytics, operations transformation and AI. Without data, digital strategy cannot be executed.
- The exponential growth of data in volume and variety, and at unprecedented velocity, is the engine of success for the digital natives. At the same time, it is paralysing many traditional enterprises that have invested millions of dollars in it but have not realized the desired impact from it.
- It is imperative that enterprises develop a digital data architecture that is fit-for-purpose and also change their operating processes to harness the power of data in the digital age.

Chapter 6: Blockchain - a new infrastructure-related capability

- As the hype around bitcoin faded away, many read into it the failure of blockchain technology itself. That is untrue. Blockchain is a powerful technology that is just getting off the ground.
- Blockchain offers a new infrastructure-related capability that provides transparency, thereby increasing trust in the system. It has the potential to transform the value chain in many

industries. A good example of its usefulness is in payments in banks.

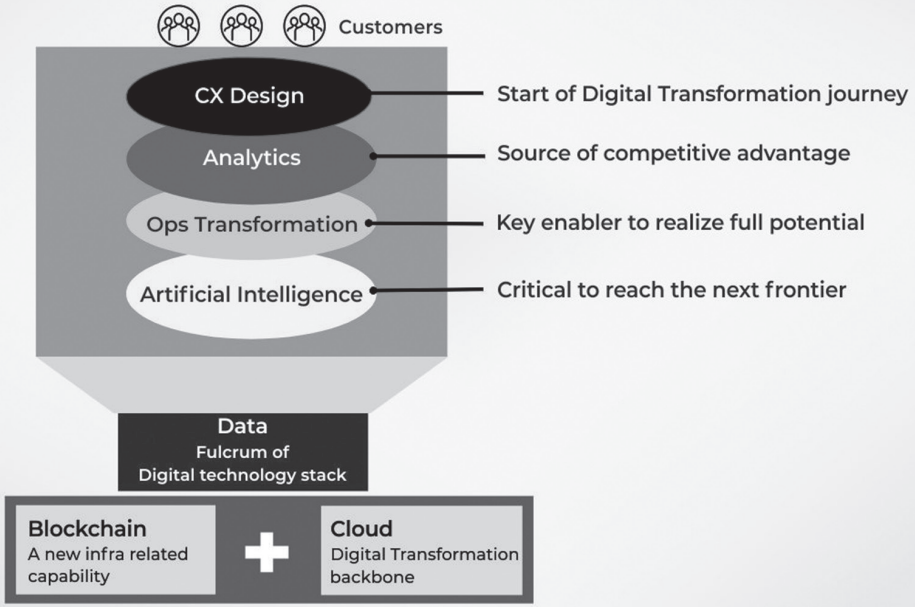
- Blockchain is currently at a nascent stage, with many POCs being tested across industries. It will require a set of challenges to be resolved (outlined in the chapter on the subject) before it becomes a mainstream technology.

Chapter 7: Cloud - going beyond infrastructure scalability to being an enabler of transformation

- Cloud is increasingly becoming the backbone of the technology stack, knitting the whole digital transformation programme together. Earlier, enterprises looked at cloud as a low-hanging fruit for realizing cost take-out in infrastructure, but now the possibilities with cloud have grown significantly.
- Both business units and CIO teams are now looking at cloud for broader purposes than for just making costs variable and infrastructure scalable.
- Business leaders are realizing the value of cloud in reimagining CX and achieving reduced time-to-market as they take on new-age competitors. Whereas CIOs are leveraging cloud for managing enterprise data better and scaling up AI across the enterprise.

All the above-mentioned technologies are the key building blocks to driving a successful digital transformation programme. In many cases, enterprises tend to be lop-sided in their investments into digital programmes, relying heavily on one particular technology and waiting for the desired impact. This often results in a gap between the realized impact and the promise of digital programmes. It is very important to recognize that success in digital is about end to end. Successful enterprises make balanced investments across these technology building blocks and execute with a two-speed strategy to realize the full potential of their digital investments.

End-to-end technology capabilities required for successful Digital Transformation



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