Burdened by legacy and facing mass disruption, the technology, media, and telecoms sector requires an iterative approach to transformation that helps minimize risk while realizing value from the outset of the journey.

Few expected that one of the outcomes of the COVID-19 pandemic would be to thrust us headfirst into the fourth industrial revolution. But that it is now underway is an established fact.

However, the pandemic has only accelerated the disruption that was already underway. The groundwork for global transformation had been laid long before, thanks to the proliferation of high-speed connectivity, exponential advances in processor capabilities and storage, and a generational shift brought in consumer behavior brought on by a demographic that is increasingly digitally savvy, and even digitally native.

As quarterly earnings reports over the past year have shown, several organizations had taken heed of the incoming wave of disruption, well before the pandemic, and pursued a reform of their operations that has enabled them to weather the current storm. But many more companies have been caught off-guard and are scrambling to defend, even revive, their fortunes. For many businesses, also contending with the need to respond to possibly permanent shifts in the way that the world’s inhabitants consume products and services, and conduct business, important decisions need to be made over the coming months if they are to survive in the post-pandemic era.

TMT’s Legacy Predicament

The broad summary of the challenge in the telecoms, media, and technology (TMT) sector is that companies are sitting on legacy systems that are now outdated and incompatible to provide for modern digital use cases. Outdated data governance standards and a lack of integration across operations, networks, and cloud-based services mean data is often siloed across various systems in an organization. This makes ser-
vices such as real-time marketing engines, which allow a telecom operator to drive sales through personalized special offers and other incentives based on a customer’s location, impractical to deliver effectively.

This became markedly obvious at AT&T wireless over just a few months between November 2003 and February 2004. After a bet on newly emergent technology didn’t pan out, a revival in fortunes hinged on a CRM upgrade that would allow customer service reps to handle more phone calls. However, because the backend was essentially a jumble of legacy systems forced to work with each other, achieving integration and instituting rules on data governance and management across systems, was painstakingly slow and complex. An all but inevitable system crash laid bare the company’s vulnerability after it overwhelmed internal systems, clogged customer service lines, and forced customers to leave the operator in droves. By the end of it, the company estimated it had lost $100 million in revenue and was forced to sell its business at a major discount to a competitor.

The lack of agility, speed, and capabilities inherent in legacy systems also places companies at a marked disadvantage when competing with newer, nimbler, and digitally advanced players. Unhindered by the previous generation of core systems, companies such as Netflix, for instance, are flexible and able to respond to customer needs on product and service delivery – such as personalized content recommendations – in ways that traditional media companies simply aren’t able to.

Digitally advanced companies are also able to exhibit adaptability to change that companies hampered by core systems built for a prior generation find hard to match. A decade ago, a similar lesson was learned at a steep price by many during the battle for market share in the cellular devices business. Former incumbents, which included network companies such as Nokia were unable to maintain their lead and lost close to 90 percent of their market values within a few years. This was because, among other reasons, new entrants to the game such as Apple and Google were able to leverage their digital architecture and technology to create operating systems that offered more functionality, as well as a whole new stream of revenues through the third-party app market, that changed the nature of the industry entirely.

Boiled down, the three most important aspects companies need to consider pertaining to the path forward are:

- How to approach data quality, governance, and management across systems?
- How flexibility can be ensured, and which data platform can bring that to a business?
- How digital architecture and technology can be best leveraged?

Imperfect Transformations

Today, more than ever before, companies have realized that data is the core resource on which they must understand trends, identify customers, and assess how the ecosystems they are curating can integrate with new needs. Yet, because of several factors including poor data quality, lack of skills, and an inability to scale, the majority are poorly equipped to deliver the digital experiences that customers demand to interact with.

What most companies inevitably discover after exploring transformation efforts is that any solution involving building on top of existing technology is inefficient and often needlessly complex – if at all successful.

Understandably, companies have invested a significant amount of expenditure and resources in their core systems. However, relying on a patchwork of technology to deliver next-generation functionality to legacy systems will only serve to mask the fundamental issues behind why companies need to transform in the first place. Data integration is bound to be burdened with issues over efficiency and effectiveness,
and any investment in short-term fixes will only further entrench companies deeper into their existing predicament, and rendering them ill-placed to compete in the market for customers, at the cost of rising CAPEX, time, resources and future viability.

As a remedy for TMT players locked in legacy systems and processes, systems integrators and vendors traditionally recommended a ‘core systems transformation’. A significant undertaking, it looks to update the core technology and back-end systems that TMT players are operating on while delaying digital use cases until the modernized core systems can support them.

**Key transformation points**

- **Until Year 3, aim to implement the Central finance, functionality - full rollout of S/4 HANA to be planned**
- **Approach: few major releases during 3 years**
- **~80% negative ROI by Year 3 with ~13 benefit achieved during implementation (since year 2) for 100% one-off costs**
- **Majority of savings expected after Year 3 with break-even in Year 9 from project start**

**Source:** BCG Case - Business case year 0, Case team interviews.
As can be expected, this end-to-end approach can be very costly, and therefore prohibitive, for businesses already facing revenue shortfalls to commit to. To have to ‘stop’ a company’s operations so that its core systems can be replaced is a dangerous financial proposition. What is needed is to not disrupt day-to-day operations that help the company generate its cash.

Additionally, because of the totality of their nature, core systems transformations also involve a significant amount of risk which cannot be understated; the complete and simultaneous revision of existing data pools, established processes and the scrapping of large amounts of architecture can cause major vulnerabilities to emerge during the transformation, not limited to falling out of compliance and even loss of crucial data.

It is not unusual to find that the amount of time, resources, and capital spent in the process, with no promise of value in the form of increased revenue or savings until an indefinite point in time far off in the future, can lead companies to experience transformation exhaustion: a loss of morale and commitment in the mission to bring about the next era of an organization’s journey. And yet to abandon the endeavor midway can cause even more problems than the company first set out to fix.

Years of BCG’s research and extensive experience working with clients that have undergone enterprise resource planning (ERP) modernization substantiate the scenario, showing:

EXHIBIT 2 | Scope Of ERP Projects

- 65% ERP projects are more expensive than expected
- 80% ERP projects take longer than planned
- 90% ERP projects realize less than 80 percent of intended benefits
The Data and Digital Platform Transformation

Instead of a traditional defensive approach involving core systems transformation, BCG advises its clients to play offensively through a Data and Digital Platform (DDP) transformation model. Less complex than a top to bottom core transformation, this model is iterative, data-centric, generates value early on in the journey, and reduces risk to the business enormously.

DDP involves the use of a data layer under a smart business layer, the combination of which integrates an organization’s entire ecosystem, including core systems and infrastructure. By relying on downstream data brought together into a data layer, the smart business layer works to create insights and personalization. These can then be used to deliver data-driven use cases that allow an organization to recover ROI and finance further transformation from a multi-phase journey without waiting for complete readiness. The journey is summarized below:

- Identify business priorities, envision moonshot target states, and initiate a digital and data transformation governance plan
- Construct a roadmap of priority use cases, weighted by value delivered against complexity or end-to-end preparedness
- Identify data sources, readiness, quality, and preparedness to deliver data-enabled use cases
- Integrate data from where it is typically found trapped/siloed, across legacy systems or data-locking applications, and host it in a separate data layer to be crunched in the smart business layer
- Design flexible and modular components (internal and external to the company ecosystem) through APIs to build future proof foundations at scale

EXHIBIT 3 | DDP Transformation Model

From a setup where the Smart Business Layer is directly connected to the Core Layer, where the data remains ‘trapped’

To liberating the data, and decoupling the development of use cases from the core modernization
In each subsequent wave of the transformation journey, data is cleansed and enriched, and new use cases pursued while leveraging on the prior phase’s use cases, brought up from the existing tech stack. This results in a digital business transformation being decoupled from traditional IT transformation, with the tangible benefit of value (revenue or savings as a result of efficiencies) being generated that can be used to finance the next step of an organization’s transformation journey.

**Key transformation points**

During the first 3 years several initiatives will be piloted and implemented costs include “technology providers”, “Data Governance & Data science”, “Industrialization Partner”

The company focused on quick realization of effectiveness

- Leverage on better factories to improve their ability to take advantages with increased sales
- Less defects and more reactivity which reduces the number of products that need to be written off or destroyed
- Reduced production time and better forecast will support reducing inventory cost.

Source: BCG Case - Business case year 0, Case team interviews.
**EXHIBIT 5 | DDP Use Case How Uses Cases Are Delivered Overtime And Data Enriched**

**EVOLUTION OF TECHNOLOGY LANDSCAPE DRIVEN BY USE CASES...**

**Initial status**
- Initial tech landscape
- Initial org (waterfall)

**Target status**
- Future tech landscape
- Future Tech Agile organization

**THE JOURNEY FROM "SPAGHETTI" ARCHITECTURE THROUGH DDP APPROACH IS ACCOMPANIED WITH PARALLEL DATA EVOLUTION**

**Wave 1 Use Cases**
- Working in a reactive mode to clean data
- 80% of data is of low quality for use cases
- Digital foundations initial practices in place

**Wave 2 Use Cases**
- Shifting to proactive mode to clean data
- 40% of data is of low quality for use cases
- Previous UC and Digital efforts are leveraged

**Wave X X Use Cases**
- Highly proactive mode to clean data
- 5% of data is of low quality for use cases
- Digital is part of BaU ways of working

**Data Quality**
- High
- Medium
- Low

**Data needed for use case**
Firms that BCG has worked with on a DDP were able to expect a benefit that was more than three times more significant than that which companies that had undergone a technology-led business transformation were able to experience. Compared to the equipment manufacturer depicted in Exhibit 1 earlier, a manufacturing firm where BCG implemented a DDP model, (in Exhibit 4) was able to make significant strides in its Factory 4.0 ambitions. Despite three-year goals that include appointing technology providers and industrialization partners, as well as implementing data governance and data science approach, it took just a year for it to achieve breakeven in the first year. This was done by focusing on a quick realization of benefits through leveraging factory improvements to boost sales; relying on data to reduce defects in products, as well as improve production times and forecasting on inventory and debt.

DDP’s Advantage Over Traditional IT Transformation

There are concrete and easily understandable reasons behind why the DDP approach can deliver more impactful results than resource-intensive core systems transformations: core modernization efforts focus on efficiencies by reducing costs associated with FTEs, maintenance, and technology. By and large, the most important benefit witnessed by organizations implementing DDP is that by liberating data companies can reach a break-even point and start to generate top-line and bottom-line benefits much earlier on in the journey, due to the continuous delivery of use cases (effectiveness).

Additionally, a DDP model avoids many steps inherent in technology-led transformations:

- Change freeze: Instead of long-periods of change freeze resulting from an organization’s complete technology revamp, companies following a DDP can limit the duration as well as the portions of the business where ongoing transformation efforts will render it inactive
- Risks: With plans and priorities maintaining a degree of flexibility and delivery pursued in iterations, the risks associated with a long, complex, and costly technology makeover are mitigated
- Capabilities: New skills are developed faster and deployable much sooner
- Efficiency/Effectiveness: Largest benefits are pulled forward, agnostic to efficiency or effectiveness, and value realized faster

Transformation Beyond Technology

Any organization that attempted to undergo a transformation from legacy core systems, or uncomplicated the puzzle of stacks built upon legacy systems, needs to consider what success looks like. To do that, especially given the nature of the ultra-competitive pandemic- and post-pandemic environment, it has to answer critical questions around digital governance, data integration, technology architecture, and flexibility. However, embarking on a journey that pauses any value yield until a highly risky, costly, and resource-intensive transformation is complete, is likely to impact what that eventual success looks like, especially during a period rife with uncertainty when revenue flow and adaptability are of paramount importance.

Unlike traditional IT core systems transformations, DDP isn’t just about technology and data. Instead, it reimagines how to govern and operate a company both during and after a transformative journey including the sourcing of both technology and human resource talent. An organization’s transformation is analyzed via an application footprint and landscape assessment within the journey, with the goal of standardizing and simplifying core systems (beyond just the ERP). This involves a revision of operating and sourcing models, as well as team structures that need to evolve from a system-centric mentality to a product-centric approach.
“Transform the Core” typically focuses on efficiencies, while majority of benefits come through effectiveness.

“Liberate the Data through DDP” makes sense in most scenarios as it can pull forward the realization of the effectiveness benefits.

1 FTE rationalization & IT cost savings, e.g. increased sales, lower cost of procured goods, reduced inventory holding cost, Source: Based on 6 case studies.
BCG’s DDP model offers an iterative approach to a complicated transformation question where any number of moving parts can jeopardize the success of the mission. But by realizing value from the outset of the journey, companies can take comfort in the realization of success at every milestone reached, and emerge much better equipped for survival and growth in the future.

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