



Case in Point

Digital Transformation at L&T

Convinced that a traditional organisation like L&T should utilise the transformative potential of digital technologies to compete at a global level, the CEO and MD embarked on a journey of digitalisation in 2016. From conception to implementation, this case revolves around the digitalisation process that took place at L&T over the next few years. With the increasing need to constantly embrace new technologies, we present insights from two experts on some of the unique facets of digital transformation and what approaches would be needed to take L&T to the next level of growth.

This case is an abridged version of the case series **Digital Transformation at L&T (A) & (B) - ISB271 & ISB272**, written by Professor S. Ramnarayan and Sunita Mehta at the Indian School of Business.

S.N. Subrahmanyam (SNS), the CEO and MD of Larsen & Toubro (L&T), an Indian engineering and construction conglomerate with presence in over 30 countries, was convinced that a traditional organisation like L&T should utilise the transformative potential of digital technologies to compete at a global level. In 2016, SNS decided on initiating digital in L&T Construction, the largest business of L&T. The digital transformation of the business unit made progress over the next two years and delivered many benefits. It laid the blueprint for the digitalisation of other business units of the L&T group. Reflecting on how they started, SNS said:



“Unlike the past industrial revolutions where one could get by with incremental change and adopt technologies at a slower pace, the pace of innovation with Industry 4.0 had to be much faster. Industry 4.0 does not lie in some distant future; it is already here. L&T is adopting digital technologies to future-proof its businesses.”

Initial Steps

In 2015, SNS, then the CEO designate, had visited the US and witnessed how digital technology was profoundly changing businesses across different industries and creating a huge impact on profit, productivity, and performance. He felt: “L&T was performing well as an organisation, but if we wanted to move further, we needed to do something about using digital technologies.”

In 2016, SNS, who had been appointed CEO of L&T, initiated digitalisation first at L&T Construction, L&T’s largest business with a revenue of around US\$ 11 billion. A study of the state of digitalisation revealed that digitalisation in the construction industry was ranked low in terms of investments. This indicated that L&T Construction would have to embark on its digitalisation journey with few existing models and benchmarks.

SNS invited Anantha Sayana (Anantha), Head of Information Systems and Head of the Corporate IT Programme and designated him as the Head of Digital in 2016.

L&T had been an early adopter of IT solutions and had invested heavily in IT, implementing enterprise resource planning (ERP) in all its business units from

1999 to 2001. Anantha stated, “Information technology is used to provide solutions to existing problems. Digital is used not only to solve existing problems but also to exploit opportunities created by new technologies.”

Recognising that digital was different from IT, the company created a separate department called the Digital Hub, which was responsible for the conceptualisation, ideation, creation, selection, development, and architecture of digital solutions. The teams were set up on a different floor and comprised people who had business, domain and technological expertise.

Where to Begin?

The primary goal of digital was to improve operational effectiveness to optimise resource utilisation, save costs, improve productivity and efficiency, reduce execution time, maintain quality, and ensure safe operations. Anantha said that execution did not follow the copybook approach:

“We did not conduct meetings of various business leaders across cities, do town halls, involve people across levels and functions, hold discussions on what digital means, and ask them where we could go digital, collect ideas, and spend many months figuring out what the business wants. We believed that digital would be understood by our people only when they started to see it.”

The focus of the Digital Hub team’s first initiative was on connecting assets using the Internet of Things (IoT) to optimise equipment and machinery utilisation. The dashboard provided detailed information on the utilisation of the machines. For instance: the amount of concrete produced by a particular concrete batching plant in a day, the time at which the machine started, average production of concrete in the previous month, amount of fuel consumed, etc. When this real-time data about equipment and machine utilisation was shared, it made team members anxious about its visibility to those outside the project site. Visibility of machine utilisation was not a problem that needed to be solved; instead, L&T wanted to use digital to exploit an opportunity.


There were stray pockets of resistance from the people at the operations level at project sites. Anantha elaborated:

“We were not getting data from a few sites. On investigation, we found that in

some cases, wires connecting the gateway to the sensors had been clipped with a pair of scissors. In other cases, people were resentful that machine utilisation data had become transparent; they sent us data to prove that the information on our dashboards was wrong.”

To build credibility of the new technology, the Digital Hub fixed all bugs and provided accurate and consistent data on machine utilisation. In 2-3 sites, manual recording of machine utilisation was done; it was tallied with the information provided by the dashboards for a few weeks to ensure that people relied on the dashboard.

To gain the buy-in of those at the site, the Digital Hub emphasised that it was just providing information and that the business managers were the experts in their respective domains. Therefore, they had the freedom to infer whether the machine’s performance was good or bad. Anantha added:

 **When people started looking at the information provided on the dashboard, the need to change and improve utilisation became automatic. This started a dialogue. Then, we worked with the business verticals to help translate these insights into optimal asset utilisation.**

Improving machine utilisation was not just a matter of making a machine work for a longer time; rather, the ecosystem had to gear up to facilitate the additional work efficiently.

Initiatives to Support Transformation

SNS emphasised the need for digitalisation at every opportunity and used every platform to drive this message. He even viewed regular business reviews as an opportunity to monitor progress on digitalisation.

The central Digital Hub, comprising over 60 people, was involved in digital strategy, solution conceptualisation, architecture, technology choice, partner selection, and solution implementation. Every business vertical had a digital office and a team

of digital officers, drawn from the business and involved in demand generation, engagement with stakeholders, and solution implementation. Every project site had digital champions who reported to an officer at the vertical, who, in turn, was guided by the officers at the central Hub. The leaders knew it was important for the team to appreciate the problems faced by the people working on site and not allow themselves to be led by “technology arrogance” in pushing a solution.

The digital team was careful to ensure that any new technology it delivered was used for the purpose for which it was deployed. The solution was designed with a clear focus on its benefit.

The agile development of the product based on user feedback, built people’s trust in digital technologies to improve the quality of their work.

In consultation with the Digital Hub, HR designed a leadership programme for developing digital capabilities, which included analytical capabilities and insights from data. This was made compulsory for people who aspired to take on leadership positions. L&T also had to rebrand itself to attract candidates with a digital background who would have otherwise preferred to join software companies.

L&T was aware that acquiring internal expertise in all the technologies would be unrealistic and inefficient. Therefore, it partnered with over 45 micro, small, and medium enterprises (MSMEs) and start-ups within India and overseas to develop various solutions using different technologies.

Extending to the Other Business Units


In early 2018, L&T extended the digitalisation programme to several business units (BU). Each BU created a team of five to six people to lead its initiatives. The central digital group brought them up to speed on their activities and the solutions they had developed at L&T Construction.

One of the initiatives of the leadership to drive change at L&T was the creation of a Digital Council, a confluence of leaders from all the group businesses, under the aegis of Anantha. It met every month and provided a platform to share ideas, understand challenges, adopt best practices, and leverage technologies and solutions across the different businesses.

As of 2018, over 50 digital solutions were in production, used by thousands of operating staff at hundreds of project sites. Digitalisation had enhanced operational efficiency, safety of personnel, and the digital skills of employees. Every year, the MD and CEO recognised and awarded the best use of digital in the sites, projects, and innovative solutions.

The Way Forward

Given the strategic importance of digital transformation in the current environment and in the post-COVID era, SNS knew that the way forward for L&T would be challenging. Disruption had become the new order, with the need to constantly embrace new technologies to take L&T to the next level of growth.



What are the unique aspects of bringing in digital transformation? What are some approaches that you find useful for dealing with such unique aspects?

What are the key leadership characteristics and approaches that are required for a successful digital transformation?



Expert Opinion

Harish Raichandani

Founder & CEO, Potentia

As an organisational development catalyst, business coach, and corporate governance steward, Raichandani brings 30 years of experience. He currently works with upper echelons to catalyse organisational transformations and board evaluations. His accreditations in appreciative inquiry, emotional intelligence, and coaching from ICF help him make a difference to individuals and institutions. The entrepreneurial perspective of organisational dynamics allows him to contribute to business success stories and C-suite coaching. His passion for teaching brings him close to graduate students as a visiting faculty at business schools.

Changing consumer preferences, unfulfilled client demands, or competition from digital natives often pushes many companies towards digitalisation. It is laudable to see the giant builder of the nation undertake a digital transformation journey with no apparent market pressure. L&T's initiative appears to be an attempt to step up their own game, viz. to improve utilisation of capital equipment that locks up billions of dollars in assets. The attempt by SNS to democratise the information on resource utilisation and productivity, needs to be seen in the context of the organisation and industry practices.

In a hierarchy-driven culture, the resources at one's command enhance perceived power; managers measure their self-worth by the assets they control. An initiative like this is bound to stir the hornet's nest, as is evident by the anxiety of the people at project sites, finding ways to resist data transmission by clipping wires.



Leaders should remain undeterred by the side-effects and unseduced by the low-hanging fruits. A leader like SNS is driven by a beacon with a definitive long-term digitalisation agenda.

At L&T, it could have been speedier to mobilise capital equipment, increase utilisation, or establish a new profit centre that serves internal and external needs for nation-building projects.

What are the unique aspects of bringing in digital transformation? What are some approaches that you find useful for dealing with such unique aspects?

I see two unique aspects:

Firstly, it needs to be strategy-led. Digital transformation needs to be triggered by a desire that encompasses more than digitalising the information at the source or aggregating it at multiple sources. Those are the essential nuts and bolts, but not the results. Automating data collection and information flow may be the most visible parts of the digitalisation initiative, but an organisation must set objectives beyond that.



Secondly, for it to be termed ‘transformation’, it needs to be an iterative process characterised by the reinforced learning between the ‘strategy’ and ‘digital assets’. Double-loop learning can enrich the business model by leveraging the information, even as the touchpoints multiply basis the changing strategy. Rita McGrath and Ryan McManus¹ call it an incremental experimental approach.

The *change cart* that brings about digital transformation requires the *culture wheel* and the *technology wheel*. A successful approach would take cognisance of both these aspects. The cultural aspects contributing to customer-centricity or timely project completion cannot be ignored while pursuing a digitalisation programme. Despite visible lacunae, the organisation must delay gratification to fix the operational metrics while pursuing the long-term agenda. An obsession with improving short-term performance may create a high decibel resistance, jeopardising the initiative. L&T’s use of Digital Hubs for information assimilation, and not for questioning the project managers’ expertise is an example. Leaders like SNS, when focussed on *transformation*, do not succumb to pressures of transactions which occur during the implementation phase.

The technology aspects at the heart of successful digitalisation are ‘ease of use’ and ‘relative stability’. The legacy companies must appreciate the spirit behind digital

¹2020 HBR (May June) “Discovery-Driven Digital-Transformation”

natives' obsession with user interface design (UI) and user experience design (UX).



Early adopters of digitalisation can turn saboteurs if the 'ease of use' is not considered by the 'Digital Hubs' equivalents.

The other crucial aspect is the choice of technology; while an outdated technology would warrant frequent changes, the evolving neo-technology may present interface issues. In either case, it impacts early adopters' morale and prevents them from becoming ambassadors for digital transformation initiatives.

What are the key leadership characteristics and approaches that are required for a successful digital transformation?

Digital transformation is essentially an agenda with a long-term impact. I refrain to term it as one, if the digitalisation plan does not accomplish at least one significant outcome such as: (a) business process improvement that reduces customer friction or lead time, (b) evolve/establish a new business model, or (c) a culture change contributing tangibly, such as an improvement in perceived value proposition of the brand, increase in the unfair selling advantage enjoyed by the company, or speed of innovation.

Therefore, first and foremost, at least one long-term payoff must be envisaged without which the digital transformation would remain a non-starter.



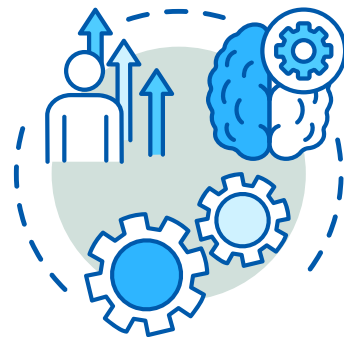
In determining the approach, the crucial element is the strategic intent. A formula-driven approach could be suicidal.

It must be commensurate with the leader's style and the business/industry. The adopted path must direct the efforts towards the intended long-term payoffs. Temptations to pluck low-hanging fruits could turn out to be distractions which derail the journey. In the L&T case, the distraction could have been to make the 'Digital Hubs' the policemen, monitoring the expertise of capital equipment users. The central idea is to minimise the strategy-execution gap.

A successful digital transformation would entail disrupting deeply entrenched habits. The CEO must pivot the initiative by creating a dedicated team that does only one task—focus on the initiative. As a leader, one will need to display three important characteristics.

In an era where unhesitant moves and velocity have assumed primacy, leaders should do well to remember overcoming the power of inertia requires **tact and patience**. The internal and external stakeholders and their interests being served through an existing mechanism cause disequilibrium. The leader needs to display **firmness with humility**—the former will ensure that the core of the transformation initiative remains intact. In contrast, humility helps to convert critics into champions. Besides, the CEO must ensure that the change team remains humble. Finally, I advocate **expanding the comfort zone**. A leader who expands their own comfort zone inspires others to do the same. The stakeholders involved in digital transformation must step outside their fears to unlock their individual and collective potential.

The three characteristics would add to the credibility of the leader, the initiative, and the organisation; further, it is bound to increase the commitment of employees involved in adopting the ‘new now’.





Expert Opinion

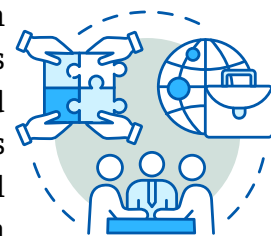
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Ramnarayan has served on the boards of business organisations and educational and social service institutions. He has written books on topics of leading change, altering mindsets, organisation development, strategic management of public enterprises, and managerial dilemmas. He has been a manager, consultant, and professor at different stages of his career, and has carried out research assignments funded by the US Office of Personnel Management, Ford Foundation, World Bank, Commonwealth Secretariat, Department for International Development, and German Sciences Foundation.

What are the unique aspects of bringing in digital transformation? What are some approaches that you find useful for dealing with such unique aspects?

Digital transformation involves the whole organisation in creating value in new ways and transforming business methods.² But when the digital strategy becomes disconnected from the organisational strategy, the agenda degenerates to being a mere “digital upgrade”, where the use of digital technology is limited to increasing the efficiency of certain things that the firm is already doing. To enable a transformation of this scale, the top leadership’s wholehearted support is critical.



For effective digital transformation, the focus must be on both “digital” and “transformation”. The digital focus would imply: (a) developing specialised expertise in exploring new technologies; (b) right choice of digital initiatives in consultation with the business leaders; (c) effective solutions architecture; (d) competent implementation of impactful solutions; and so on.

²Libert, B., Beck, M., & Wind, Y. (J). (2016, July 14). 7 questions to ask before your next digital transformation. Harvard Business Review.

The transformation focus would be reflected in (a) a clear and compelling larger direction of future-proofing the business by being more efficient, productive, competent, competitive, and profitable; (b) energising the businesses and technologists to work together to implement digital initiatives across the value chain at speed and scale; (c) building and sustaining new work habits and decision-making approaches, greater agility, working across boundaries that help instil a data-driven decision-making culture in the organisation.

When L&T began its journey of digital transformation, the direction was set as “opening the doors to new ways of working”. It was a grand vision of achieving global competitiveness. The CEO asked the digital team not to bother with pilot projects or proofs of concepts. Within six months, several machines were connected to generate real-time data on different parameters. Bugs were quickly fixed, and accurate and credible data started flowing in another six months. Then, conversations were facilitated among the concerned people on how the information could generate insights that could translate into optimal asset utilisation. People realised that improving machine utilisation was not simply a matter of making machines work for a longer time. The entire ecosystem had to gear up to facilitate the additional work. It required materials, engineering drawings, and labour. Roles and processes were appropriately changed. The leadership ensured that there was a shared purpose that guided the digital team and the business managers. There was neither the “technology arrogance” of pushing a solution from the digital team, nor resistance from the businesses to experiment with new methods.

Digital transformation is a journey through complexity and uncertainty. It requires attention to technical and social/organisational aspects. This includes:

- Scanning the environment quickly and methodically to explore new technologies
- Establishing a process that allows high-potential ideas to rise and weak ideas to sink
- Bringing in the right talent and partnering with other organisations to develop solutions
- Fostering communication, collaboration, and community building

- Creating the right team structure and ownership across levels to promote demand and idea generation from across the organisation.

“ Sustaining the momentum requires effective monitoring, making the results visible, and ensuring that employees feel engaged, involved, and empowered in the process of change.

What are the key leadership characteristics and approaches that are required for a successful digital transformation?

The leadership must address digital and transformation challenges. Thus, two broad areas of capabilities are required.

One set of capabilities addresses the technology challenges through deep expertise. These experts evaluate the business processes where technology could be leveraged and assess

the organisation’s infrastructure preparedness. They conduct pilots without waiting for the ideal solution, then roll out the solution and engage in continual iterations to address emerging challenges and achieve the intended outcome. Technology leaders tend to be higher in self-oriented competencies, such as adaptability, managing ambiguity, and nimble learning. They display openness to experimentation and testing ideas with real users rather than spending days debating a concept’s validity.



The second set of capabilities deals with transformation challenges. These leaders create a shared understanding of the change; integrate digital strategy with the larger organisational vision and strategy; build collaborative networks; partner with other organisations for technology expertise; influence stakeholders without authority; manage conflicts; communicate and inspire people, and develop talent.

Successful digital transformation also requires careful attention to all the coordination issues through effective choreographing of the change. This requires business leaders to focus on creating the requisite capabilities; reshaping the processes to better align them with strategy; developing key capabilities for making the right decisions; defining new roles, accountabilities, and ways of working; sequencing of steps; and defining how the whole effort will be led. These

leaders also need to constantly monitor and review the progress of digital initiatives to sustain momentum. Culture can be one of the biggest barriers to successful transformation, and therefore, another critical aspect that requires attention is creating new mindsets and cultures. The new mindsets include the notion of iteration, of constantly reinventing the core, and constantly cannibalising what the group may have done before.



The characteristics of digital culture are agility, high-risk appetite, data-driven decision-making, distributed leadership, and collaborative work style.

A key challenge is to create a sub-culture in the digital organisation and keep it buffered from the larger organisation. Finally, successful digital transformation requires a partnership approach, emphasising dialogue, discussions, and collaborative working.



To sum up, successful digital transformation requires entrepreneurial leadership that energises the organisation to pursue opportunity-seeking and advantage-seeking behaviours.³ A study of entrepreneurial leaders has examined their mindsets—cognitive filters used to act—that influence their actions and decisions.⁴ This study found that entrepreneurial leaders develop and practise three mindsets in parallel—people-oriented, purpose-oriented, and learning-oriented—making them adept at handling uncertainty and ambiguity. The people-oriented mindset is about being inclusive, open, positive, and appreciative. The purpose-oriented mindset focusses on purpose/intention and patience with the change journey. The learning-oriented mindset is about listening and picking signals from all around to take risks and experiment. The mindsets play an important role in the successful implementation of strategic entrepreneurship.

³Ireland, R. D., Hitt, M. A., & Sirmon, D. G. (2003). A model of strategic entrepreneurship: The construct and its dimensions. *Journal of Management*, 29(6), 963–989.

⁴Ramnarayan Subramaniam and Raj Krishnan Shankar. (2020). Three Mindsets of Entrepreneurial Leaders. *The Journal of Entrepreneurship*, 1-31.

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