

Digital Readiness of Manufacturing Sector in South India

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Foreword

Never since the industrial revolution has there been a development with potential to disrupt the manufacturing industry as digitization. The speed of digitization in the consumer space is rapidly being emulated in the manufacturing sector. With the Make In India campaign, India is on the cusp of a manufacturing revolution. However, as India is making rapid strides as a global manufacturing hub, it is important that the Indian manufacturing industry adopts best practices in digitization to remain globally relevant and competitive.

CII Southern Region instituted the Manufacturing And Digital Excellence (MADE) Program in 2016 with the objective of helping the manufacturing sector to adopt cutting edge technologies through various programs. As MADE enters its 3rd year, it was felt that a status check on Digital Readiness of member firms would be helpful in understanding the current state of readiness and to develop the future course of action based on member feedback.

The objectives of this project were as follows:

- ✓ To help participant member firms assess their digital readiness at an overall level and across functions
- ✓ To facilitate cross-industry learnings
- ✓ To identify a set of initiatives and programs that CII and its members can implement to improve the digital readiness of the manufacturing sector in India in general and South India in particular

We invite you to read this report not just to understand the digital readiness of manufacturing companies, but also for learnings from best practice companies that can be implemented in your firms. Many of the learnings are relevant not just for manufacturing companies but also for other sectors. We hope you find this report insightful.



V Santhanam Chairman CII SR - MADE



Santosh Sreedhar Executive Director Avalon Consulting







Understanding Digital Readiness

How does one measure the Digital Readiness of an organisation? To answer this it is important to understand the process by which a company becomes Digitally progressive.

The journey towards Digital Readiness starts with **Awareness**. For an organisation to be able to implement any initiative, it is important to be aware of the environment it operates in, and the various possibilities that digital solutions offer. Awareness of the developments at the customer's end that could impact your business will also be key. For manufacturing companies that are B2B focused, this would involve understanding the end consumer of their product who may be many degrees separated from them.

For the Awareness to translate to action, a company should ideally make digital a part of its **Strategy**. Mere implementation of digital initiatives does not make a company digitally ready. For digital to really become part of an organisation's DNA, a holistic view on how digital integrates into its various business operations is important. What is required is not a "Digital Strategy", but a company strategy that seamlessly integrates digital.

A digital strategy translates to action through development of **Capabilities**. Digital solutions include various options that can be classified as Social, Mobile, Analytics, Cloud and Internet of Things, together called SMACIT. Capabilities in various SMACIT options that are relevant and fitting into the company's strategy are vital for the digital transformation of any organisation.

The presence of physical infrastructure, relevant software and connectivity does not make a company digitally ready. The most vital link is the people. Unless people in the organisation utilise the various digital capabilities built, the digitisation will at best be suboptimal, or at worst be counter-productive. Herein comes the importance of the **Culture**. Aligning people to strategy, with a culture of high and fast adoption of digital solutions is the most important factor that differentiates a high-performing, digitally ready firm from the others.





Digital Readiness Assessment Model

Based on the four key aspects of **Awareness**, **Strategy**, **Capability and Culture**, Avalon Consulting has designed a framework to assess digital readiness of member firms. Suitable weights have been assigned to the 4 parameters to arrive at the overall **Digital Readiness Score** of the company

Parameters and Weightages

Parameter	Core Question(s)	Parameter Weight
Awareness	 Is there adequate knowledge in the company about ✓ What digital trends impact their industry? ✓ What is the potential for digitization of various aspects of the company's operations? ✓ What digital tools can enable the same? 	15%
Strategy	Does the company consider digitization as a core element of its long-term growth and survival?	25%
Capability	Has the company made adequate investments in digital tools across the company and to what extent have the systems and processes been automated?	30%
Culture	To what extent has digitization evolved into a core part of the employee's day to day work, and are they driven to increase digitization?	

While Strategy is assessed at the company-level, the other 3 factors are assessed at the function-level. Considering the focus on manufacturing industry in this Study, we have considered function-level feedback only for the core functions of Production (including Quality and R&D), Sales & Marketing and Procurement & Logistics.

Scoring on these parameters are based on activity-level questions to make it objective. Based on the scores, companies are classified into 5 levels in Digital Readiness as per the Model presented below.

Levels of Digital Readiness

Consulting





The findings in this Report are based on a survey focused on understanding the current state and preparedness of CII's member firms in the manufacturing sector on the various dimensions of digitization as detailed in the previous section.

The target companies for the survey were member firms primarily in the revenue band of ~Rs.250 Crs - Rs. 2,000 Crs. The reason for this was that for companies that are larger, the compulsion for digitization is believed to be higher, and in most likelihood the digitization levels will be better. For companies that are below Rs 250 Cr revenue, we expect that the digitization initiatives may not have been a priority.

The survey was conducted using a comprehensive self-assessment questionnaire administered among CEOs / CXOs / CTOs in the target companies. Most of the questionnaires were filled with assistance from Avalon Consulting which also provided an opportunity to understand more about the respondent company's digital journey.

In order to ensure objectivity of the responses, the respondents were asked questions at a process-level which were then aggregated at the function-level and company-level. The analysis was based on inputs related to 3 core functions in a manufacturing concern – production, customer service and logistics.

Over 285 CII member firms were approached for the Study. Of these, 44 member firms participated in the survey. The lack of response from rest of members were understood to be mostly for the reason that they did not consider themselves to be digitally inclined and hence did not think this Study was relevant to them. This could be considered as one of the limitations of the Study. Since survey responses were voluntary, it is possible that only those companies who had either implemented digital initiatives or were in the process of doing so actually responded to the survey. To that extent, the actual digital readiness of the Industry could be lower than what the survey results have shown.

Even with the limitation, the survey results are relevant, and indicate that there is significant room for improvement. The survey has also been successful in capturing learnings from companies that have made progress in their digital journeys, which are important learnings for the Industry.

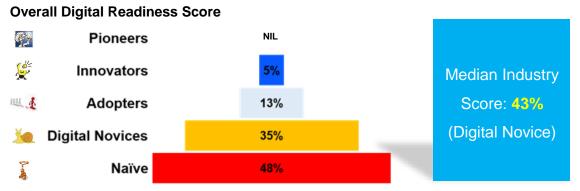






Overall Digital Readiness Score

The overall Digital Readiness Score of manufacturing companies in South India was found to be 43%, which classifies the Industry as a "Digital Novice". The score indicates that the Industry largely does not view Digital as strategic, and decision making on Digital initiatives is largely driven by the IT Department.



About 50% of the companies are classified as "Naïve". These companies have very low awareness on digital, and of greater concern is that they do not consider these developments as relevant.

About a third (35%) of the companies are "Digital Novices". These companies have some level view of awareness on Digital environment and solutions. However, they still do not consider Digital as strategic. Further, the decision making on any digital initiatives is usually centrally driven with little involvement of the functions. Since knowledge across the company is limited, these initiatives usually get driven by the IT Department.

"Early Adopters" form about 13% of the companies. They are better than the "Digital Novices" in their understanding and awareness of digital, and consider them strategic. However, they are usually not the ones to take the lead in implementing solutions. These companies usually watch what industry leaders or competitors are doing, and only implement tried and tested solutions.

Only one in twenty (5%) of the companies are "Innovators", who are willing to experiment with digital solutions. These companies actively seek new ways to improve both customer service and operational efficiency through implementing new, and often untested solutions. By virtue of implementing these solutions, these companies are able to stay ahead of the curve among the peer group in their industry.

Unfortunately, there were no companies who may be considered "Pioneers". In "Pioneers", we were seeking companies that actively use digital to gain competitive advantage, and where digital is ingrained in the organisational culture. It is the culture aspect that clearly differentiates the "Pioneers" from the "Innovators". As the industry reaches better levels of Digital maturity, we expect improvement across all levels, and emergence of few "Pioneers" in this space.

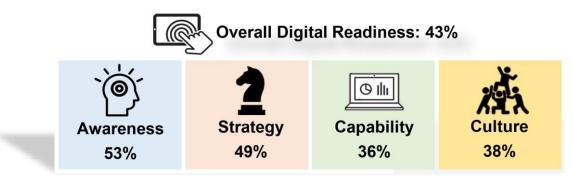




Parameter-wise Scores

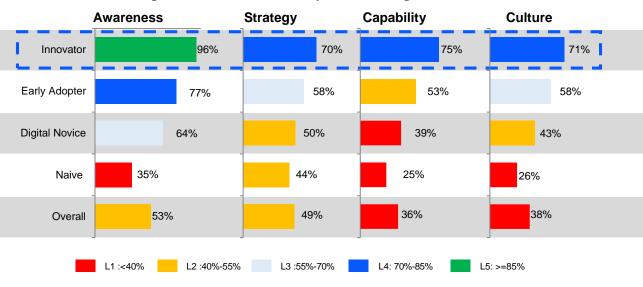
The parameter-wise Digital Readiness Scores are as shown below

Parameter-wise Digital Readiness Scores



The score for Awareness is relatively high at 53%, whereas there is a slight gap in its translation to Strategy which has a score of 49%. This score gap is not very significant. However, in the translation of strategy to actual digital capabilities, there is a significant gap. The capability score at 36% is the lowest among all parameters. This indicates that even though many companies have a strategy for digitisation in place, there is gap in actual implementation. Also to be noted is that the culture score is only 38%, which indicates that even where implementation has happened, the adoption rates are very low.

While awareness has a relatively high score of 53%, this is still not adequate for the industry to adopt digital at the pace that it should. Since the digital adoption process starts with the companies having high levels of awareness, it is important for companies and industry bodies to work on raising the levels of awareness. With improved awareness, we can expect that adoption levels will improve and a culture of usage of digital technologies will become more wide-spread.



Parameter-wise Digital Readiness Scores by Different Digital Readiness Levels

So, how do the parameter-wise scores differ by level of digitization? "Innovators" lead on all 4 parameters compared to peers in the other categories. What is worth noting is that the Innovators have the highest levels of awareness at 96%. This means that the awareness levels are very high across the organisation in different functions and at different levels. These companies have invested in creating the awareness, which forms a strong foundation for adoption of





digital solutions across functions, and ingrain it into the company's culture. We can expect these companies to be the Pioneers of the future.

Across all 4 categories of companies, we see the drop in awareness scores progressively from "Innovators" to "Naïve". This is an important point to note as without creating a wide-spread knowledge of digital solutions in the organisation, the adoption of digital solutions will be a challenge.

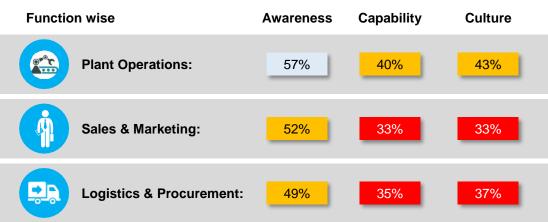
The gap between the strategy and capabilities score is the highest among "Naïve" companies, followed by "Digital Novices". The scores of "Naïve" companies also indicate how having an digital strategy without adequate awareness does not lead to actual capabilities and a culture of adoption.

Overall, the most important factor for companies to work on is to develop wide-spread awareness on digital environment and solutions

Function-wise Digitization Scores

The scores for the parameters of Awareness, Capability and Culture are based on function-wise feedback of various relevant activities

Function-wise Scores for Awareness, Capability and Culture



The awareness levels are relatively high in Plant Operations at 57% compared to Sales /Marketing and Logistics / Procurement. Plant operations has scored higher in building capabilities as well as in developing a culture of adoption. This indicates that the companies that have worked on digital initiatives have prioritized digitization where the perceived benefits are the most.

The gap between awareness and capabilities exist in all 3 functions, but is the highest in sales & marketing. This gap, and overall lower level of capability building in the sales & logistics functions indicate that the industry has not fully explored the possibilities in these functions.

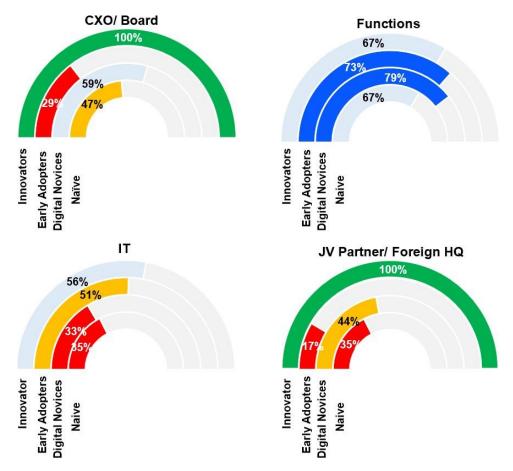
Key Influencers and Decision Makers in Digital Strategy

We have tried to understand who drives Digital Strategy in the organization. The "Innovators" have a fairly balanced involvement from all key stakeholders. Among the stakeholders, the Board plays an important role in driving these initiatives, and so does the Global partner / HQ. In contrast the "Early Adopters", "Digital Novices" and "Naïve" companies had relatively higher involvement from the functions working together with the IT Department. It is likely that in these companies, the digitization initiatives are largely driven by market and competitive compulsions, and hence taken up as a must-do response





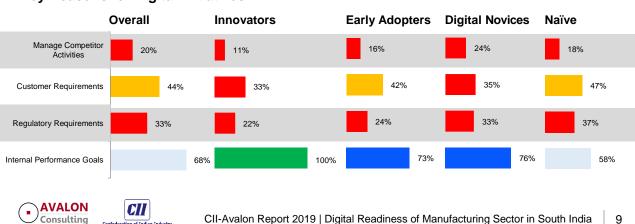
Who Drives Digital Strategy in the Company



Across all categories of respondents, IT typically acts as an enabler, overseeing implementation of digital initiatives. IT is not seen as the primary driver of digitization among any category of companies assessed

Key Drivers of Investment in Digital Initiatives

We looked at the key reasons for the Digital initiatives in the manufacturing companies covering aspects such as competition, customer requirement, regulations and internal performance goals. Interestingly, internal performance goals are the key reason for the Digital initiatives across all segments. In the case of "Innovators", the internal performance goals assume highest importance. The second most important reason is customer requirement, which is relatively of high importance for "Naïve" and "Early Adopters".



Key Reasons for Digital Initiatives

Learnings in Digitization from Best Practice Companies

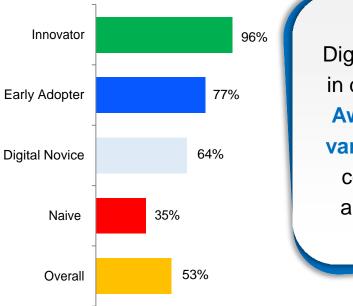
Based on the survey insights and in depth discussions with "Innovator" member firms, **9** key learnings emerge from the survey for improving digital readiness of member firms in the manufacturing space in South India. Each learning offers opportunities for member firms in various stages of their digitization journey to improve their standing.

1	Awareness First	Awareness leads digitization. Increasing awareness across the organization is critical towards accelerating digitization among member firms
2	Democratize Decision Making	Digitization works best when it is driven both top- down and bottom-up. Let employees from shop floor to board room explore digitization initiatives
3	Invest in Digital Expertise	Build digital capabilities through recruitment and trainings. Engage external experts to accelerate digitization where required
4	Think beyond planning cycles	Digitization requires a long-term horizon, and needs to be separated from shorter cycles which impact an industry
5	Strategy is Digital	Digitization should be enmeshed with Strategy till there is no strategy meeting without discussing the company's digitization roadmap
6	Encourage Experimentation	Little steps go a long way. Empower employees to experiment with small digitization initiatives even at the cost of failure
7	Think beyond Direct Customers	Digitization disrupts all industries, and may fundamentally impact your indirect customers and end consumers in ways not anticipated in the past
8	Understand the Value of Data	Companies sit on treasure troves of data- there is a need to leverage its value through analytics and other digitization tools
9	Commit to Change	A digitization drive will lead to fundamental change and transformations across a company. There is a need to fully commit to the same



Awareness Scores

1



Digital Leaders Invest in developing Digital Awareness across various levels in the company, not just among leadership

Among members leading in digitization, there is a clear objective- increase **awareness** of the possibilities of digitization **across** the organization, not just at senior levels. This is driven by leadership setting the context to all employees that digitization is critical for the success of the firm in the long term, resulting in increased awareness of its importance across employees.

This is followed by knowledge sharing sessions and **Trainings** on general digital awareness across managerial and supervisorial levels, enabling employees to explore what is possible to digitize in their day to day work. Functions are also well **empowered** to **identify** and **evaluate** potential digital tools without dependence on senior leadership at every step.







Give opportunity to functions to initiate Digital Initiatives; CEO / Board provides guidance and drives company wide initiatives

For the next level of digitization, member firms let functions take ownership of digitization initiatives. At a grassroot level, employees need to be encouraged and empowered to identify areas for potential digitization and recommend them for review. Employees can even propose potential digitization methods if they have sufficient awareness.

The ideas proposed are reviewed and taken up by functions for implementation, reducing the overall lead time for smaller initiatives and reducing dependence on leadership bandwidth for evaluating each initiative. Employees whose ideas are taken up for recommendation are rewarded and felicitated, creating a stronger incentive for other employees to take up digitization initiatives. Many small, operational initiatives can be taken up parallelly, across functions – ensuring more ideas are evaluated and executed with lower management oversight

"

The various functions compete with our global HQ in terms of digitization...in some functions, digital initiatives equivalent or ahead of global HQ have been taken up locally

We are already digitizing logistics and real time GPS tracking ahead of even customer requests, as our logistics function wanted more control





Top Companies develop **Digital Expertise** by strengthening **Internal Capabilities,** and by engaging **Experts**

Companies looking to digitize may not have all capabilities inhouse. Member firms leading in digitization bridge this gap by recruiting qualified candidates to lead/ support the digitization drive, at both a corporate level and at functional levels. Additionally, digital specialists are bought on board as experts to help define and execute digital strategies and strengthen capabilities

"

"We created a **dedicated digital** marketing team, recruiting professionals who have helped improve our **digital** presence, attract customers & potential employees, and **drive** our ecommerce business

A new strategy team

comprising internal and external experts was created for driving digitization across functions. This team had the right capabilities to drive digital initiatives"





Understand how technology and digitization can **fundamentally disrupt** both their way of **doing business** and their **external environment** in the mid-long term

Takeaways from Members leading in digitization

Digital strategy is not seen as a short term sprint, but as a marathon. Member firms leading in digitization strive to develop a comprehensive, long term (5-10 year) outlook on what will be the impact of digitization in the industry, and how the company needs to prepare for the same. This is also critical, as many initiatives require a relatively longer timeframe for ROI to emerge. This also forces companies to think of digital as a core component of long term strategy



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Make it a practice to specifically discuss digital initiatives and digital roadmaps in strategy & business planning meetings

Takeaways from Members leading in digitization

Leading member firms successfully integrate planning of digital initiatives with overall company strategy. They seek to ensure that there is no discussion on company strategy, where potential digital disruptions and strategies for managing the same are not evaluated. The frequency of discussing digital initiatives is increased until it is at the heart of every key business decision. This involves discussing digital opportunities in every business review and planning meeting, by clearly creating a dedicated space for reviewing progress and evaluating new digital initiatives

"

We have a clear digital roadmap, and digital initiatives are discussed in every strategy meeting "In every strategy meeting, we discuss our path to Industry 4.0 – it is one of the most important aspects of our business planning







There is a common misconception that digital initiatives need to be large sized, "big bang" programs with high impact. However, leading member firms encourage employees to look at everyday work and processes, and ask, "can we make it faster/cheaper/better through digital initiatives?". Leading member firms strive to create a culture where employees can feel free to propose ideas, where these ideas are evaluated and those of interest can be taken up and tried out. Even if some of the initiatives fail, the impact of creating such a culture will have a very high impact on long term digitization for the firm.

"

We actively work with a number of **SMEs/startups (50+)**, where we help implement **pilots** and enjoy benefits of **cutting-edge technology** at low cost, while they (startups) get an **anchor client** and **visibility**. Some may **fail**, but we **learn** from the failures too

"We have **islands of excellence** across individual factories, which have **implemented unique** digital initiatives. If they succeed, we can implement them across other factories

We are working with a startup who has an interesting RFID/ NFC sensor based IOT tool management solution to track tool life, tool rework data etc

"





Leaders in the digitization space, especially in the B2B segment, look for digital disruption not only among their customers, but beyond, across the value chain, right up to the end consumers. With drastic improvements in digital technology and access to digital tools, including mobile internet, sensors, NFC etc., there is an unprecedented opportunity to understand the needs of the value chain and meet the same proactively. Leaders in digitization believe that companies which do not look at the entire value chain risk being left behind due to technological innovations impacting demand beyond the direct customer

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Our product's end customers are farmers, with whom we need to have touchpoints to understand changing requirements, so our sales force meet the farmers in addition to our distributors, and capture real time data and feedback through an APP on their mobile

Our strategy called for **100%** digitization of all records even when **regulatory** requirements mandated physical records – even at higher cost, we are now in a position to **leverage** this to create credibility globally among our customer's customer

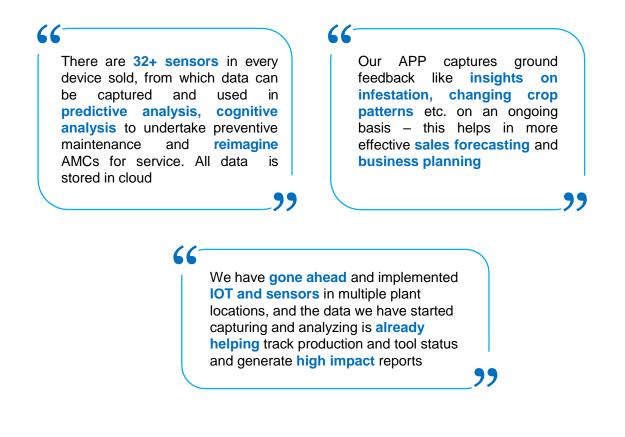
In spite of being a B2B company, we have an **active** social media presence, where we also run **consumer oriented** Facebook pages, and we can understand changing consumer **sentiments**







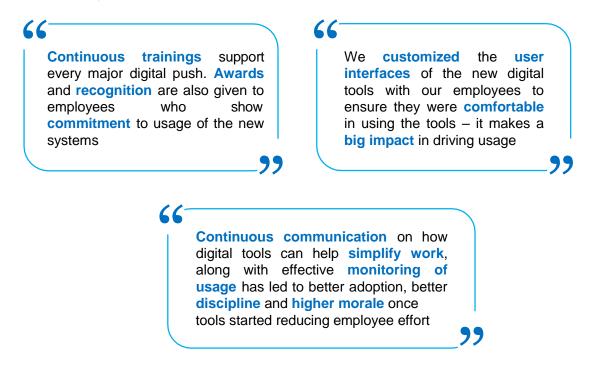
Leaders in the digitization space look at the reservoir of data they have collected over a long period of time and try to extract value from the same. They look at Business Intelligence tools, AI, and other data analytics as an opportunity to derive useful insights. The tools are trained on an ongoing basis, ensuring recommendations are enhanced with time. The insights from same help not only in decision making, but also help optimize processes, portfolio etc. on an ongoing basis across the organization.



CII



Leaders believe that for successful digital transformation, high commitment to change is critical. This is driven by understanding what the employees who will use the systems expect, in terms of ease of use, functionality, ability to reduce their effort, etc. The digital systems and processes are defined with the user in mind, ensuring that when deployed, there is limited resistance. Employees are also primed for digitization, with clear communication on the criticality of adopting the newly deployed digital systems. Performance appraisals across employees are redefined with emphasis on enabling successful digital transformation in their day to day work.



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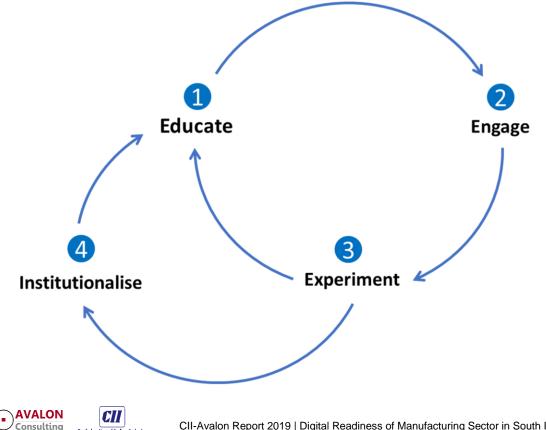




The study findings clearly shows that the manufacturing sector in South India has a long way to go in its digitisation journey. The industry is operating in an environment that is changing very fast, and where digital solutions are constantly evolving around many technological advancements. In this environment, companies have to be constantly exploring digital solutions to ensure that they stay competitive in the present, and relevant in the future.

This would need a mindset change in the companies both at the leadership level and at the operating level. Leadership level will need to comprehend the trends in the industry and set direction to the digital journey with a sense of urgency. The operating levels have to respond by building and adopting solutions, some of which may be big leaps, but many that may be considered only incremental improvements.

We propose a simple framework for companies to follow in driving digital transformation



Driving Digital Transformation: A Simple Framework



Educate: We have seen from the survey results as well as from the best practices that the awareness is key to improving digital readiness. Companies should start their digital journey by educating the team on the changes in the environment and the potential for digitization. This will help not just to get more people across the organization to actively contribute to the thought process, but also to get better buy-in during implementation.

Engage: Best practice companies were seen to engage employees across functions and levels in the digitization journey. Engagement goes beyond education. Employee engagement will involve involving them in decisions related to digitization initiatives, and also empowering them to propose digitization initiatives that can help the company achieve its goals

Experiment: As mentioned earlier, the digital solutions are constantly evolving. There is very little that can be called proven, and that has become industry standard. So, companies that are looking for tried and tested solutions will remain behind in the digitization curve, and catching up later could put them at a great disadvantage. The best approach is to constantly experiment with various solutions, with each initiative providing incremental benefit. A "educated" and "engaged" team will able to initiate relevant projects with higher probability of success

Institutionalise: Not all experiments will be successes, and top management should be prepared for failures. However, to derive benefits from the ones that have succeeded, it is important to relentlessly pursue implementation, and to make it the new normal in the company. Involving all employees though education, engagement and experimentation will help in change management. However, that is not enough. Institutionalising change will require review of organisation structure and processes. Also important will be reskilling people and/or bringing in new talent as relevant. Initiatives that impact external stakeholder engagement such as with suppliers and customer will also require engaging with them closely for them to adopt to your new processes

By following this approach, we expect that the manufacturing industry in South India will be able to make giant leaps in its digitization journey. CII invites its member firms to actively engage in the Manufacturing & Digital Excellence (MADE) Initiative under which many initiatives are being planned to accelerate the digitization of Indian manufacturing sector. Avalon Consulting is also happy to engage with CII member firms to help solve their challenges in direction setting, strategy development, capability building and execution as they embark in the journey towards a digital future.







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About Avalon Consulting

Founded in 1989, Avalon Consulting is part of the 2,200+ strong Avalon Group with operations across the entire knowledge spectrum covering Consulting, Business Research and Analytics. At Avalon Consulting, we provide solutions to business related to Strategy, Performance problems Improvement, Organisation Transformation and Transaction Support to companies across the globe. Our practice areas include Agri and Food Processing, Automotive, Chemicals, Engineering & Capital Goods, Metals and Infrastructure, among others

Avalon Consulting is a member of Cordence Worldwide (CWW), an agile global management consulting alliance with 70+ offices across 23+ countries globally. The Cordence Worldwide alliance member firms help clients all over the world achieve remarkable, sustainable results, share world class capabilities and expertise, and maintain the autonomy to serve each individual client free of distant influence or agendas



The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industryled and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has over 7200 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 100,000 enterprises from around 242 national and regional sectoral industry bodies.



Confederation of Indian Industry

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