

Vision 2030: Towards Next Generation EPC Companies

Abstract

"Prediction is vtuoba s'ti fi yllaicepse ,tluc fid yre the future," Niels Bohr had once noted.

Engineering, procurement, and construction (EPC) companies are re-discovering themselves ,secirp lio gnitautcu fo redro dlrow wen eht ni evolving customer demands, emerging geopolitical forces, and shrinking margins. Howevemeeb sah ecneu ni tnatropmi tsom eht , disruptive technologies, without which achieving vitceffe tsoc dna ycneic feeness would have been an uphill battle. With the Internet of Things (IoT), augmented reality (AR), virtual reality (VR), ni scitylana dna ,)IA(ecnegilletni laic itravading the traditional space, there is no choice but to pay attention and adopt. Data security is a major threat for the legacy systems. Yet, there's no denying how the current IT infrastructure is changing with rapid cloud adoption and reduced total cost of ownership (TCO). Some EPC companies are already accelerating their journey on the transformation roadmap. We can tell this based on the RFPs received by us. Interestingly,

these companies have created their own roadmaps—a good start towards realizing a digital future.

In such an evolving paradigm, we suggest that companies take a rational approach that does not disrupt existing business processes, ensuring contracts with long-term clients remain unaffected. They can adapt to thrive in a rapidly changing, increasingly competitive, and constantly uncertain world. While the future or the pace of developments cannot be predicted with certainty, tracking several key trends can aid companies to prepare for the future.

Once we start to look at the application landscape with respect to the internally developed EPC new generation reference architecture (NGRA), the gaps in technology and the business model start to show. There will be some solutions which can be accelerated by partnering with technology specialists and this will be the key differentiator to bring about the transformation while ensuring business as usual.

Crafting Smarter Assets

All around us, we see smarter assets being built – cities, buildings, infrastructure, and even industries. Robotics and interoperability through the IoT have become default. Here, automation starts at the design stage of those assets, quickly moving on to installation, and then to operations. With greater accuracy, speed, and reliability, value, and quality of operations. However, this also comes at a hefty price of increasing complexity and operational risk.

EPC companies are preparing to build smarter facilities by becoming exliw elor rieht .tneic orp yllacinhcet ylgndeec extend beyond that of general contractors, requiring them to stand out as true integrators of emerging technologies. To realize this, these companies must be integrated within their own organization and with customers, suppliers, and sub-contractors in meaningful and innovative ways.

Building Smart and Lean Organizations

vesmeht gnirutcurtser era smr CPEes with a focus on customers and technology. Our leading EPC customers from Americas, Europe and Australia are trying to achieve their future vision by building technologies to achieve their business goals. These technologies are slated to disrupt the traditional value chain and present regional operating models. Such shifts are already noticeable with advances such as visualization (versus modelling), robotics (versus construction), production using 3D printing (versus procurement), and the IoT (versus project monitoring and controls). There are technologies that can even install or construct based on plans derived from the 3D models. In many projects, drones are being used to monitor the project progress status.

It is clear that these pervasive technologies will demand new ways of operating both within and outside the enterprise. Consolidation and running simulations or testing scenarios will soon be passé. Consider how the monitoring cell functions today. Rather than updating schedules based on inputs sourced from the site, it now only needs to watch and connect 3D models accordingly.

The NextGen workforce is now changing, with younger, less experienced, but more tech-savvy employees. Future organization models need to re-orient themselves to collaborate and converge current silos. Engineering disciplines, therefore, must make room for the operations and maintenance (O&M) strategies. Some companies are starting this journey with pilot projects involving social platforms with elbixe ,erutuf rof noitadnuof a gnitaerc fo laog eht organization—creating brand values centered on trustworthiness, innovation, and agility.

Customizing Solutions

Going forward, facilities will move towards becoming more customized. An example in this direction is distributed power generation and how this is changing the utilities market. Another would be how 3D printing and robotics are helping manufacturers reduce their footprint and move closer to the markets.

This poses an interesting problem for modern EPC companies. How can one scale to reduce costs in locally oriented markets? How can production processes be standardized to minimize cycle time and also serve time bound projects?

In response, EPC companies are moving closer to their customers—going beypleh ot noitac iceps gnidliub dno customers recognize smaller, more customized facilities within the local market can make the business better. This might also rt dna ecruos ot smr eriuqerain local resources with the intent to drive down maintenance costs with the fundamental goal of becoming a global player with local presence.

Gaining Competitive Edge with Good Governance

Conventionally, governance is considered a secondary issue gniddib nehwsirpretne CPE eht se ilauqsid ro se ilauq taht for contracts. However, in today's hyper-connected world of smarter, localized projects, delivering compelling customer experience depends on good governance, which is seen as an effective way of managing risks for both parties involved. After all, nothing negates the value of an asset faster than uncontrolled risk.

Govtiruces TI tsubor yb de itrof ,ecnanrey policies, must include all aspects of operv dna ,laicnan ,lanoitaendor or sub-contractor risks. This also means accommodating risks

data snoitac iceps ni segnahc yb remotsuc eht ot desop schedules. Rather than being theoretical, this will be a data-driven approach that leverages advanced analytics. The outcomes can then be linked to business KPIs and managed accordingly.

In the recent RFPs and RFIs, we have noticed a shift in how SLAs are being attempted to link to business KPIs. CSIs are now increasingly mapped to business functions with a bigger role for domain expertise from IT service companies.

Forming Partnerships as a Core Competency

Now, more than ever, suppliers, sub-contractors as well as tech companies to not only take operations to the next level, but also proactively address customer needs and pain points. Imagine the possibilities of a collaborative environment enabled through a shared cloud-based infrastructure or platform that breaks traditional enterprise boundaries.

The leading adopters will become true orchestrators—bringing together customers, suppliers, sub-contractors, and non-traditional players such as tech companies to innovate and create the next generation of new assets.

As part of the transformation towards becoming a re-imagined digital enterprise, IT partners can provide necessary support through innovation labs, dynamic testing solutions, and more—for circumnavigating future uncertainties.

Marching Towards Operational Excellence

To sum up, the Next Generation EPC companies need to re-imagine their business using an approach which will encompass the following.

- SLAs linked to business KPIs make it visible to track changes.
- Transformation is at the core of business approaches, while PoCs run for effective deployment.
- The key solutions are the outcome of the technologies identified, adopted and deployed. These are tested under business conditions during the run followed by Continuous Service Improvement (CSI).
- Operational excellence is the end goal while being sensitive to cultural changes.

About The Authors

Tom Franklin
Director,
Upstream Center of Excellence,
Tata Consultancy Services

Tom Franklin serves as the Director of TCS' upstream center of excellence. He comes to TCS with more than 40 years of experience in the oil and gas industry. He was a contributor to Cambridge Energy Research Associates' landmark study of the impact of information technology on the petroleum industry, "The Quiet Revolution." In serving his clients, he has delivered engagements covering business and IT strategy, system selection, business process design, and system implementation. He has worked with business processes such as prospect evaluation, production field operations, drilling, petroleum and reserves accounting, and energy trading and risk management.

Pramod Mirji –
Senior Consultant,
Tata Consultancy Services
Pramod Mirji is a Senior Consultant with TCS' Energy and Resources unit and heads the Engineering, Procurement, and Construction industry domain in the organization. He has over 26 years of IT experience with 22 years in the EPC industry including international business development. He is a Mechanical Engineer and has done a Post Graduate Executive Management Programme from SP Jain Institute of Management & Research (SPJIMR), Mumbai, India. He also holds a PG Diploma in Geomatics from C-DAC and has a Fellowship at Institution of Engineers, India (FIE).

Experience certainty. IT Services
Business Solutions
Consulting

Contact

Visit the [Energy, Resources and Utilites](#) page on www.tcs.com

Email: er.marketing@tcs.com

Subscribe to TCS White Papers

TCS.com RSS: http://www.tcs.com/rss_feeds/Pages/feed.aspx?f=w

Feedburner: <http://feeds2.feedburner.com/tcswhitepapers>

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at www.tcs.com

All content / information present here is the exclusive property of Tata Consultancy Services Limited (TCS). The content / information contained here is correct at the time of publishing. No material from here may be copied, modified, reproduced, republished, uploaded, transmitted, posted or distributed in any form without prior written permission from TCS. Unauthorized use of the content / information appearing here may violate copyright, trademark and other applicable laws, and could result in criminal or civil penalties. Copyright © 2018 Tata Consultancy Services Limited