



PLAYBOOK  
2022

**BUILDING WORLD-CLASS  
Technology CoEs**

# Acknowledgements

This Playbook is an outcome of the discussions from NASSCOM's two-part series of Season-1 of *Quarterly Immersive Series* on **Building World-Class Technology CoEs.**

NASSCOM ER&D council is grateful to our esteemed panellists **Mr Dipesh Shah**, Corporate Senior VP & Managing Director, SRI-B and **Mr Gurpreet Singh Sandhu**, Senior Director, Client Platform & Systems (CPS), CCG, Intel, who actively participated and shared their insights with us. Their disruptive thought process and deep expertise provided in-depth insights on best practices on building world-class technology CoEs in India.

We would also like to thank **Mr Karan Kamal**, FutureFactor360, for moderating the sessions.

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# Setting the Context

The changing industry landscape, the advent of new-age technologies, and evolving customer expectations have compelled enterprises to continuously innovate with speed and agility to gain a competitive edge. Developing strong expertise and knowledge in new-age technologies is crucial for an organization to differentiate itself and beat the competition.

CoEs have enabled global organizations to build differentiated technology to drive revenue growth, enhance customer satisfaction, and drive operational excellence. In addition, CoEs as innovation incubators allow organizations *to innovate fast, learn fast, and win fast*. Building an effective and successful CoE requires a few key factors: a clearly defined mission and vision, a well-articulated business case, access to funding and infrastructure, well-defined KPIs, and an effective governance model. Additionally, innovation, talent, and a collaborative ecosystem are key to creating an effective CoE.

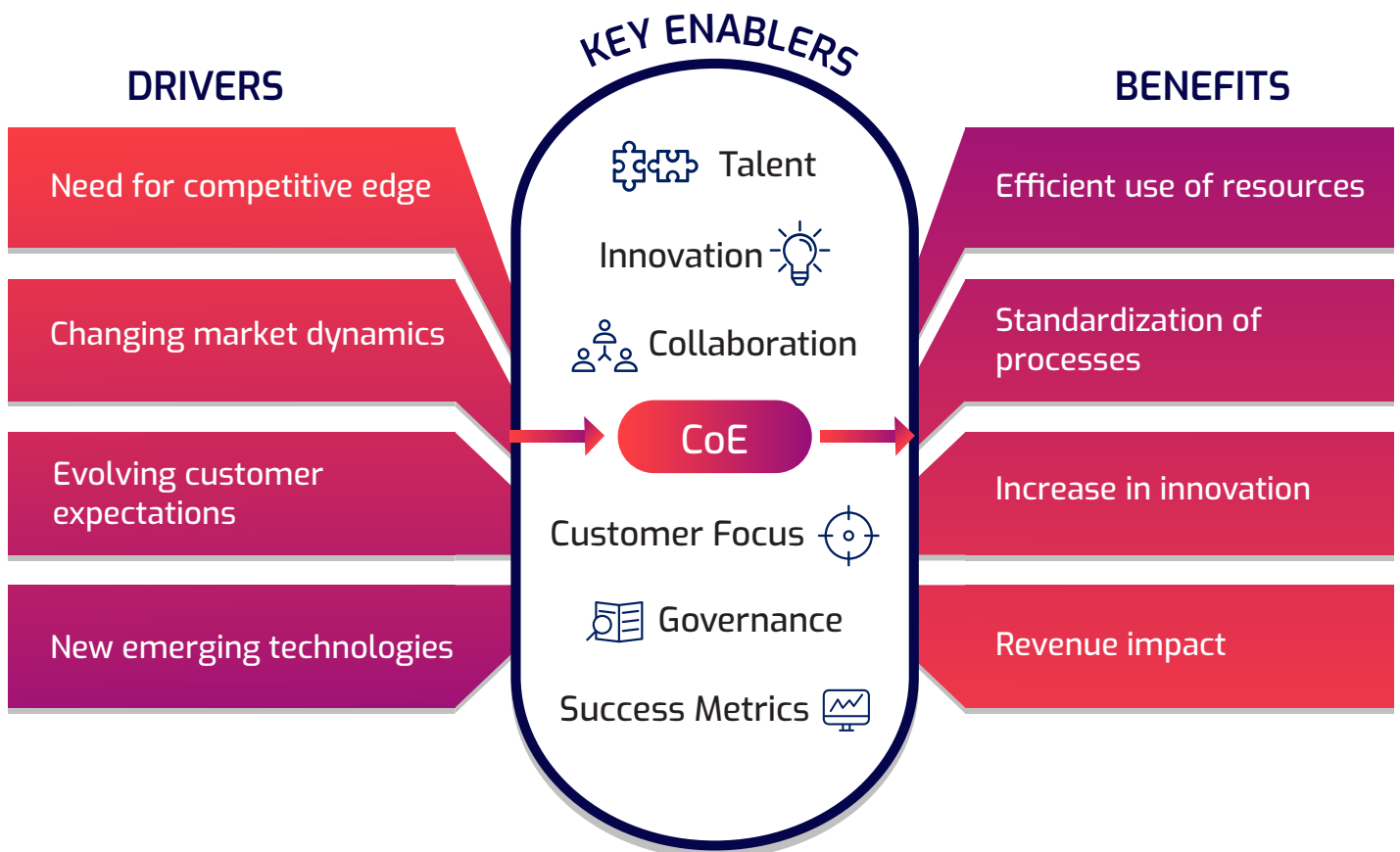
In India, GCCs are setting up CoEs that have enabled them to transform from offshore support centers to strategic business enablers for their parent enterprises. These technology CoEs play a key role in setting the global technology agenda, conceptualizing, and developing innovative next-gen products, and enabling enterprises to meet their business goals.

## Indian ER&D players can use this Playbook to:

- Explore nuances of building and managing world-class CoEs in India.
- Learn about best practices and pitfalls of creating successful CoEs.
- Define the KPIs to measure the success and effectiveness of CoEs.
- Identify the various success levers and enablers of a CoE.

# 1. CoE Overview

A CoE is usually built around critical processes, technologies, or applications to help the company adopt a particular process to become more efficient. **A CoE is a group of technical and domain experts who are responsible for delivering tangible business results while building expertise, thought leadership, and capability in a specific area.** Organizations increasingly create CoEs to identify and standardize best practices, drive innovation at scale, and build capability and expertise.

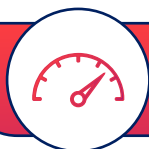


# 2. Drivers of CoE

CoEs have become more prominent and pronounced in the current era where the changing market dynamics, the introduction of new technologies, and the evolving customer expectations require enterprises to innovate continuously with speed and agility to gain a competitive advantage. CoEs help global organizations create cutting-edge technologies not just for growth but also for competitive differentiation, customer delight, and operational excellence. CoEs have become the backbone of enterprise success in the 21<sup>st</sup> century.

## Benefits of CoE to Organization

CoEs can assist organizations across multiple dimensions. Some of these dimensions are:



Efficient use of resources (people and technology)



Attract talent: Often CoEs act as magnet for attracting technical talent



Consistency and standardization in the processes



Increase in innovation and thought leadership



Remove silos of best practices and knowledge existing among different teams/business units



Reduce cost inefficiencies

### 3. India CoEs and Focus Areas

As a part of the GCCs, CoEs help build a high-quality workforce of the future by providing structured training and continuous reskilling to develop a new-age digital organization.

In India, CoEs serve as innovation incubators, enabling organizations worldwide to fail fast, learn fast, and win fast.

Engineering R&D players are setting up CoEs, which play an essential role in conceptualizing and developing innovative next-generation products, accelerating their market adoption, and enabling enterprises to achieve their business goals. Technology CoEs established in India help global enterprises deliver on their technology roadmaps and craft innovative/next-generation solutions for their customers.

## Case in Point (CoEs set-up by Indian ER&D Players)

**SAMSUNG**
**Samsung R&D Institute India – Bangalore (SRI-B)**

SRI-B is contributing to the vision of powering Digital India through four CoEs: Advanced Communication, Rich Multimedia, Artificial Intelligence and AI-infused Internet of Things.

### Advanced Communication CoE

#### CoE Focus Areas

Wireless technology, Networks and Terminals, 4G, 5G, 6G

Started as a team responsible for the **productization of legacy, 3G, and 4G technologies, and has now transformed into the Advanced Communications CoE.** The center is responsible for advanced research in the latest fields of 5G, 6G, future generation Wi-Fi technologies, etc.

#### Business Impact

The Advanced Communication CoE by SRI-B enables the delivery of Communication Protocol Software in mobile phones and network devices. The CoE commands global leadership amongst standard bodies and has made a significant contribution to Samsung's first 5G mobile phone.

### Rich Multimedia CoE

#### CoE Focus Areas

Camera Technology, Image and Video Processing, AR, and VR

The center started with an aim to improve image quality in Samsung mobile phones, camera systems integration and features development by using possible IP from HQ/3rd party. The Rich Multimedia CoE is now undertaking AI integration in image enhancement and processing to deliver new consumer experiences.

#### Business Impact

The Rich Multimedia CoE has enabled continuous improvement of camera image quality and innovated many new camera features. This CoE has also collaborated for multiple local and global innovations while contributing to multiple product lines towards the former Make for India vision and is continuing the innovation journey with Powering Digital India now.

## Artificial Intelligence (AI) CoE

### CoE Focus Areas

Voice Intelligence, Vision Intelligence, Text Intelligence, and Data Intelligence

The Artificial Intelligence CoE has been championing Voice Recognition software feature development and productization alongside language expansion. The center also covers the development and productization of framework solutions (like Samsung Neural Accelerator Platform, Intelligent Keyboard, Gallery Search, etc.).

### Business Impact

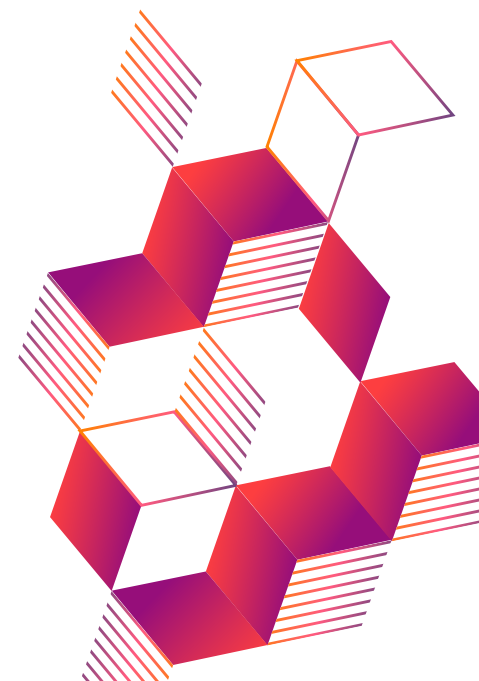
The CoE has played a pivotal role in the enhancement and deployment of the Bixby Voice assistant in Samsung mobile phones, consumer appliances. It has contributed in the development, productization and continuous improvement of the Samsung keyboard, S-Pen Handwriting, and others that provide the best experience to end-users.

## Internet of Things (IoT) CoE

The IoT CoE has been a more recent entrant in the SRI-B CoE list. The center looks after research and productization of software features related to inter-networking of physical devices and ecosystem expansion by on-boarding consumer devices.

### Business Impact

The CoE has made significant contributions for the development and productization of the SmartThings cloud service responsible for monitoring and controlling devices. The center specializes in the development and enhancement of SmartThings App, connectivity, edge processing, data analytics for the connected platforms, and application of AI in intelligent process automation.





PHILIPS

Philips Innovation Campus, Bengaluru

**AI CoE****CoE Focus Areas**

Data Science and Artificial Intelligence

The CoE was launched to strengthen Philips's data science and AI capabilities, reduce time to market, and create significant customer value. The objective of the CoE is to ensure quality and strengthen capability in data science and AI, prioritize meaningful AI-enabled solutions that will scale, including adapting/shifting business models, reduce time to market, and leverage platforms, standards, and proven (external and internal) components.

**Business Impact**

The CoE has helped deliver significant customer value and revenue contribution with data and AI.

The CoE has leveraged AI to improve real-time operational decision making, asset tracking, patient flow predictions, advanced staff scheduling, real-time task distribution and standardizing care delivery. One of the examples of projects worked on by the CoE includes Compressed SENSE that can increase the image resolution up to 40 percent within the same scan time or reduce the scan times by up to 50 percent compared to current examinations. The algorithm uses a priori information from system calibration data, anatomical knowledge and general Magnetic Resonance Imaging (MRI) principles, which is carefully balanced to reconstruct the best possible MRI image quality whilst keeping it consistent with the measured MRI data.

NOKIA

Nokia

**Networked Robotics CoE****CoE Focus Areas**

Robotics, AI, and Advanced Communication Technologies

In August 2020, Nokia's India R&D center announced a collaboration with the Indian Institute of Science (IISc) to establish a center of excellence for networked robotics in partnership. The objective of the CoE is to develop an array of use cases in disaster management, agriculture and industrial automation, among others, leveraging next-gen communication technologies, robotics and artificial intelligence.



Intel technology India Pvt. Ltd

## Client Computing Group

### CoE Focus Areas

Platform Hardware, System Technologies, Reference Designs

One of the key focus areas of the CoE is to deliver high quality validation hardware that is needed for validation of silicon before sending it to customers. The CoE also delivers reference designs that are designed outside-in keeping in mind the user experience and needs of the end users. The designs are given as reference to the customers where the customer can choose to use the entire reference design or pick some parts of it to use in their products. Additionally, the CoE works on System Technologies with focus on *Thermal Conductivity*.



KLA Corporation

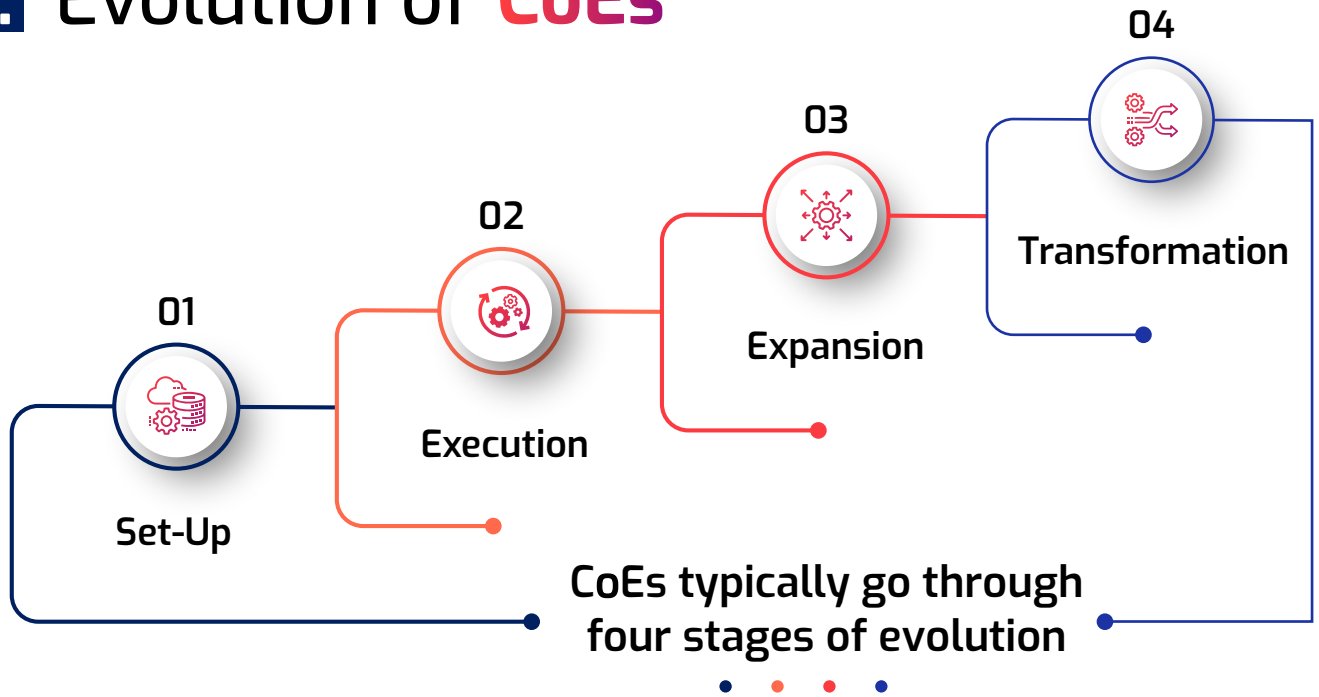
## Artificial Intelligence-Advanced Computing Lab (AI-ACL) CoE



### CoE Focus Areas





AI, Software, Image Processing and Physics Modelling

In Nov 2021, US-based KLA Corporation<sup>1</sup>, supplier of process control & enabling solutions for semiconductor industry, set-up AI-ACL facility in partnership with IIT Madras. The facility will serve as CoE for AI based R&D. The objective of the center is to expand use of AI in its products and develop the next generation of AI innovations. The researchers and engineers at AI-ACL will work in collaboration with the AI experts at AI Modeling and Center of Excellence in Michigan.

# 4. Evolution of CoEs



Parameters	Description of Parameters	Set-up	Execution	Expansion	Transformation
 <p><b>Business Engagement</b></p>	<p>Global team distribution, nature and type of relationship with Business Units (BUs), and HQ (parent organization)</p>	<p>Small percentage of the team is based in India, and the program is led by the HQ or onsite CoE team</p>	<ul style="list-style-type: none"> <li>• Delivery team is based in India while the product management team is based out of the HQ</li> <li>• The CoE acts as execution partner for the HQ</li> </ul>	<p>The team is entirely based in India. The team lead jointly engages with the customers along with the HQ</p>	<ul style="list-style-type: none"> <li>• The team in India is responsible for proactively pitching concepts to the business</li> <li>• The CoE acts as strategic partner to the HQ and plays a critical role in defining the technology and strategy roadmap of the HQ</li> </ul>
 <p><b>Delivery Excellence</b></p>	<ul style="list-style-type: none"> <li>• Adherence to cost, quality, and schedule</li> <li>• Agile adoption and tools for rapid prototyping</li> </ul>	<ul style="list-style-type: none"> <li>• Limited capability to deliver. The delivery team acts as an extended team for onsite CoE team (resource augmentation)</li> </ul>	<ul style="list-style-type: none"> <li>• Team adheres to the delivery standards with acceptable deviations</li> <li>• Team works with the BUs on some aspects of the product lifecycle</li> </ul>	<ul style="list-style-type: none"> <li>• Team is able to adhere to cost, quality and schedule and other parameters</li> </ul>	<ul style="list-style-type: none"> <li>• Team takes proactive measures to drive continuous improvements in terms of time, cost, and quality for effective delivery of projects</li> </ul>

Parameters	Description of Parameters	Set-up	Execution	Expansion	Transformation
 <p><b>Delivery Excellence</b></p>		<ul style="list-style-type: none"> <li>Mostly dependent on manual/ traditional mechanisms with limited use of tools and reusable assets</li> </ul>		<ul style="list-style-type: none"> <li>Team has developed various solution accelerators, reusable assets and IPs across the product value chain</li> </ul>	<ul style="list-style-type: none"> <li>Build multiple solution accelerators and reusable assets that can be adopted by different BUs</li> </ul>
 <p><b>Nature of initiatives</b></p>	<p><i>Support and strategic initiatives</i></p>	<p>Support / tactical initiatives with no ownership</p>	<p>Owens tactical initiatives of the business with full ownership</p>	<p>Owens tactical initiatives of the business with full ownership and supports strategic initiatives</p>	<p>Drives strategic initiatives with full ownership</p>
 <p><b>Innovation</b></p>	<ul style="list-style-type: none"> <li><i>Ideation, design, and development of innovative product features</i></li> <li><i>IP/Reusable Assets and thought leadership</i></li> </ul>	<p>No IP/Reusable Assets. No contribution to research articles</p>	<ul style="list-style-type: none"> <li>Creates IP/reusable assets only on a need basis (reactive contribution to the development of innovative product features)</li> <li>Contributes to technical blogs and papers published within the organization</li> </ul>	<ul style="list-style-type: none"> <li>Proactively develops innovative features for products targeted at local and regional markets</li> <li>Co-authors research papers and publishes in renowned journals</li> </ul>	<ul style="list-style-type: none"> <li>Proactively develops innovative product features for global markets (The features developed are used as USP for marketing the product)</li> <li>Files multiple patents</li> <li>Authors and publishes multiple research articles and technical papers in national and international journals</li> </ul>
 <p><b>Value creation focus</b></p>	<p><i>Business outputs</i></p>	<p>Minimizes technical risks</p>	<p>Delivery with adherence to time, cost and quality</p>	<p>Delivery at scale and velocity</p>	<p>Drives innovations and achieves tangible business outputs</p>

## Set up Phase:

A CoE is set up as a proof of concept to demonstrate the capability of the teams in this phase. It is important at this point that the CoE teams do not overwhelm the processes with grand transformational plans. At the same time, it is vital to establish the vision and mission of the CoE upfront. Trust and credibility must be established with relevant stakeholders during this phase.

### SRI-B

At Samsung, the teams comprising of talented engineers in India worked with global teams in trenches to provide engineering support to the existing ongoing global projects. The consistency in delivery established trust.

### Intel Technology India Pvt. Ltd.

At Intel, the Systems and Platform Group in India started as a small team supporting global requirements. As it began, it was not deemed as a CoE but rather a board design team consisting of a group of talented individuals with deep technical and domain capabilities.

## Execution Phase:

During this phase, the CoE will get off the ground with a few high-impact projects. In this phase, the CoEs are expected to deliver to the business requirements while meeting cost, quality, and timeframes. This phase is critical and represents a fundamental requirement for any CoE. CoEs will find it difficult to convince the parent organization of the need for expansion or transformation without getting this right.

## Expansion Phase:

This phase involves influencing global stakeholders to leverage the CoE as a hub. Once the credibility, trust, and execution capabilities are established as a part of the execution phase, this phase involves a proactive and consultative approach.

### SRI-B

SRI- B started conceptualizing 5G in 2011, eight years before it became mainstream. This journey involved proactively creating Proof of Concepts and demos that helped to establish the CoE's innovation potential to the global stakeholders.

### Intel Technology India Pvt. Ltd.

At Intel, team leaders at India center took efforts to continuously evangelize and talk about the capabilities to make sure the team gets noticed and influence other stakeholders to collaborate with the team. Also, along with evangelization of the teams, they adopted a grounds-up approach to define the *Winning Aspirations* for the India team for the next five-six years.

It is incumbent upon the talent to prove proactiveness to demonstrate value beyond conventional expectations, as the budgets are typically not carved out for consultative and proactive solutioning. As a result, the teams quickly wrap up their regular tasks to concentrate on proactive initiatives.

## Transformation Phase:

During this phase, a CoE can operate with complete autonomy within an organization. This phase will involve the CoE helping map out the global technology mandate for the organization.

### SRI-B

SRI-B is playing a transformative role on the 5G roadmap due to the foundations it laid as part of its expansion phase. Today, Samsung has provided India with the mandate to steer the global 3GPP committee from Bangalore. In India, the CoE is involved in establishing standards, developing advanced technologies with the operators, and conducting 5G trials. Additionally, the team has created multiple patents and published papers in leading technology journals. A culmination of CoE efforts was the S10 Phone, the first 5G device in the world.

As a sign of its proactive nature, the team is already working on 6G technology, which is five to six years in advance of any commercialization opportunities.

### Intel Technology India Pvt. Ltd.

In India, Intel owns the roadmap for System Technology and Reference Collaterals. According to the customer's needs, it decides the best reference design for that particular customer. In addition, the CoE determines what goes into the silicon products.

## 4Cs of CoEs

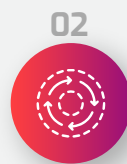
In the opinion of Gurpreet Singh Sandhu, Intel, the formation of any CoE goes through a cycle of 4Cs, namely, capability or competence, consistency, collaboration, and creativity.



01

### Capability or Competence:

Self-confidence and the ability of the team to accomplish a particular task or to design/develop a product/ solution in accordance with the requirements.



02

### Consistency:

Delivering above par results consistently is key to establishing credibility and getting noticed by management.



03

### Collaboration:

Consistently delivering above par results will increase the credibility and trustworthiness of the team. This, in turn, leads to increased collaboration among individuals or teams.



04

### Creativity:

A more collaborative team will result in a greater diversity of perspectives, which will in turn increase creativity and lead to innovation. It will also strengthen the capability and competence of the team.

## 5. Success Factors/Enablers of a CoE

For a CoE to be successful and become a true embodiment of excellence, an organization must focus on some of the key factors or enablers such as:

**Strong Talent Base**

**Continued Focus on Innovation**

**Clear Understanding of Customer Pain Points & Requirements**

**Win-Win Collaborations/Partnerships**

● Other GCCs ● Ecosystem

**A Well-Defined Governance Structure**

**Clear and Well-Defined KPIs/ Metrics to Measure Success**

### Strong Talent Base

The foundation of any CoE is talent. One of the purposes of building CoEs is to build expertise and capabilities in a new skill or domain area. Teams within a CoE are composed of technical leaders and subject matter experts. Hiring and skilling of talent becomes imperative for a CoE. Once established, a CoE also acts as a magnet to attract highly skilled technical talent.

### Talent Attraction



*Today may be talent is chasing brand but may be in 5 years talent will chase technical guru”*

**Dipesh Shah**  
Corporate Senior VP & MD,  
SRI-B



## SRI-B

With a technical role model like Pranav Mistry, Samsung has been able to attract the best talent. In addition, Samsung has been hiring returning Indians to set up centers of excellence in India. Every two years, SRI-B hires about 10-15 engineers returning from US to work in India. With these experts, SRI-B is able to provide value to its customers by understanding the entire ecosystem. Additionally, they improve the capabilities of existing employees. As part of its AI CoE, SRI-B also established a hiring committee to select the best talent.

## Intel Technology India Pvt. Ltd.

Almost all of Intel's talent comes from its own internal employees hired directly from within the industry in India. This group of homegrown technical leaders is sent abroad on a rotating basis for a year to develop their international networks. Additionally, some team members visit Taiwan to work directly with ODMs to gather insights about their processes and needs.

## Talent Skilling

A successful CoE relies on skilled talent. A World Economic Forum report predicts that 85 million jobs will be displaced by 2025 in 20 major economies. At the same time, 97 million new job roles will be created driven by technological advancements and digital transformation<sup>2</sup>.

## SRI-B

SRI-B has taken multiple strategic initiatives to build the workforce for its technology CoEs, including hiring for specific skills, behavioral skills programs, such as campus-to-corporate hires and leadership development for all levels.

Samsung invests in skilling platforms, such as Coursera, that help their talent upskill and reskill. For each CoE, SRI-B has created five levels of expertise, namely **Novice**, **Practitioner**, **Competent**, **Expert**, and **Innovator**. Each level has a playlist of courses that an individual should complete to reach the desired level of expertise.

Furthermore, there are joint PhD programs with IIT Chennai, IISc Bangalore, among others. Samsung has also built a unique two-year course with the aid of IIIT Bengaluru that has helped engineers develop their native computer science and AI capabilities beyond their knowledge of electronics and communications.

Students from universities have also been involved with Samsung's research in areas such as speech recognition, vision-based technologies, etc. It has also launched **PRISM**, a program aimed at building talent for the industry and augmenting the workforce. The program currently has 300+ professors and 3,000+ students, with plans to expand to 10,000 students within three years<sup>3</sup>.

## Continued Focus on Innovation

The central tenet of any CoE is innovation. CoEs should focus on approaches that will foster continuous innovation, which will benefit the organization as a whole. A CoE should also have the right processes, tools, funding, and infrastructure in place that will speed up the process of innovation.

### SRI-B

Nearly 20 percent of SRI-B's employees are required to file for patents, while the remaining 80 percent do it on their own volition. SRI-B has embraced the strong Korean culture of patent filing in a big way, resulting in young engineers with 2-3 years of experience filing for patents. Samsung has filed 3500 patents over the last decade, which is nearly 350 patents per year and one patent per day. Patent filing has been massively successful due to robust processes and tools that provide access to the prior art.

### Intel Technology India Pvt. Ltd.

Intel sees IP generation as a naturally occurring byproduct of its efforts to solve customer pain points. A robust process is in place, in which the team tests whether an IP can be created at each step of problem-solving.

## Win-Win Collaborations and Partnerships

### Collaborations with GCCs

Most of the time, GCCs work directly with the HQ. In some cases, GCCs at different locations collaborate together if it is a win-win situation for both parties. Collaboration with the GCC in the US represents a win-win collaboration for SRI-B.

### Ecosystem Partnerships

As CoEs are built and scaled, ecosystem partnerships are becoming even more vital. For joint research and service delivery, CoEs in India are establishing partnerships with startups, service providers, and universities.

### SRI-B

SRI-B was an integral part of the launch of the US 3G network. SRI-B was able to partner with Indian service providers to scale up capabilities in a matter of one month and drive end-to-end ownership of the initiative from India. Likewise, SRI-B leveraged the local

service provider ecosystem to deliver their 5G initiatives in the US. Also in India, Samsung has invested in 12 startups. The partnership between **Glance** and SRI-B is one of its hallmarks. This partnership was cultivated in India and has been extended to all Indian handsets.

### Intel Technology India Pvt. Ltd.

Intel has collaborated with universities (mostly IITs) in board minimization, antenna technology, and thermal engineering. Similarly, it also collaborates with start-ups that develop breakthrough technologies.

## Clear Understanding of Customer Pain Points & Requirements

To succeed, a CoE should have insights on industry trends, innovations, and disruptions and should be able to predict potential challenges and risks to assist customers and foster stronger customer relationships. The CoE should be able to access customer and market insights to develop solutions that take into account the customers' pain points and requirements. Moreover, the members of the CoE need to regularly communicate with customers to gain a better understanding of their needs and requirements.



***“Talking to customers is important because their needs are evolving and also of the industry. Because user expectations are evolving, what was acceptable one year ago may not be acceptable now.”***

**Gurpreet Singh Sandhu**  
Senior Director,  
Client Platform & Systems group,  
Intel

### Intel Technology India Pvt. Ltd.

Intel takes a consultative solutioning approach to innovation. During regular customer meetings, the team identifies customers' pain points and discusses their requirements. The CoE team is structured so that approximately 90 percent of the members are based in Bengaluru, and the remaining 10 percent are located in Malaysia, Taiwan, and the US.



## A Well-Defined Operating Model & Governance Structure

Having a well-defined governance structure and operating procedure in place is essential for a CoE to succeed. The governance structure enables the CoE to define key priorities and deliverables, get budget approvals, access the right tools and infrastructures, and facilitate the overall management of the CoE.

To ensure smooth operation and governance of the CoE, the steering committee of the CoE must fulfill the following responsibilities:



Plan CoE roadmap and strategy



Chart IP Strategy



Oversee operational performance of the CoE



Oversee delivery quality and customer satisfaction



Provide guidance on key initiatives/ challenges



Decide on budget allocations across different activities



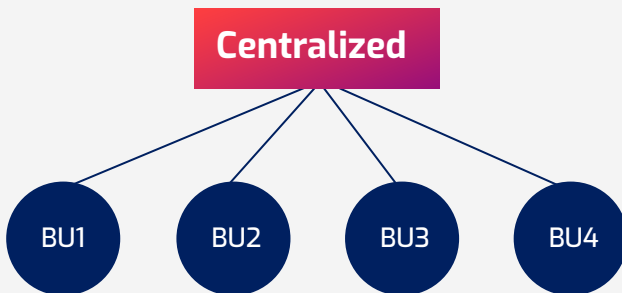
Organize regular meetings to review and prioritize the projects



Formulate plan and process to measure ROI for each project

Many different CoE models exist, which can be selected based on an organization's requirements and strategy. CoEs, however, can be broadly categorized into three categories: **centralized**, **decentralized**, and **federated**. Each of these models can be used when multiple BUs are involved.

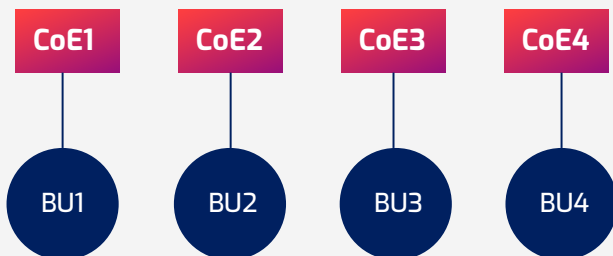
## Centralized



The centralized structure involves one central team performing all the functions of a CoE and being responsible for defining and developing best practices and standardized processes that must be followed by all business units (BUs). Using this type of structure allows efficient use of resources, assets, and technology. As a result of centralized structures, the contention for resources may lead to certain projects being prioritized. As a result, certain initiatives may be delayed.

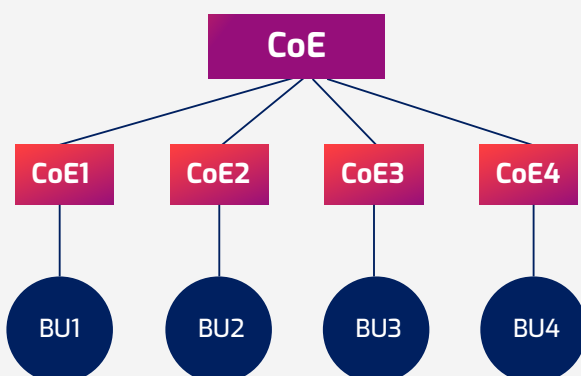
A structure like this is best suited to enterprises that are building new capabilities and just beginning their CoE journey.

## Decentralized



An organization with a decentralized structure has a CoE for each business unit. CoE initiatives are aligned with the goals of the business units. However, in such a structure, each BU follows its own processes and develops its own bespoke solutions, causing long-term information, knowledge, and best practices silos. This also causes duplication of efforts and technology.

## Federated



The federated structure is a hybrid model that combines centralized and decentralized features. The federated structure has a central team that oversees best practices, process standardization, etc., while each BU drives its own initiatives and developments. Essentially, the central team acts as a governing body, while the BUs are responsible for driving initiatives, developing expertise, identifying new uses and opportunities, and delivering projects. A federated structure can scale rapidly within the organization.

This type of structure is best suited to mature CoEs.

## Clear and Well-Defined KPIs for Measuring the Success/ Benefits of a CoE

The impact of the CoE can be measured in multiple ways. Cost, Quality, and Time are some of the traditional metrics used to measure the impact of a CoE.

Shown below are some examples:



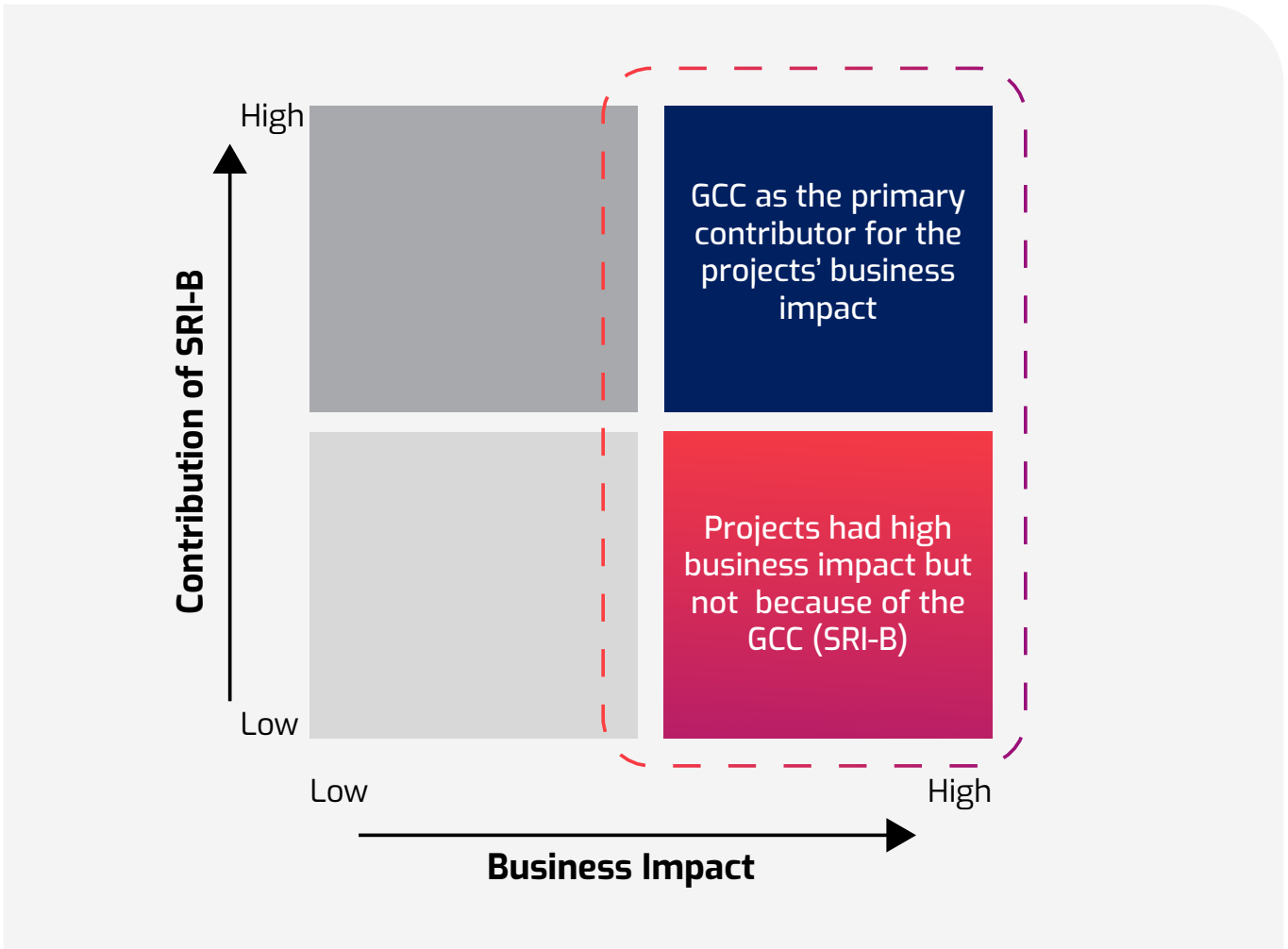
However, with the evolution of CoEs in India, these organizations measure themselves based on business value delivered.

### SRI-B

At Samsung, the measure of the CoE value is the high-impact product features that CoEs have delivered at SRI-B. The benchmark for a CoE is whether the technological feature/software developed by it makes to the top 3 features of a newly launched product or if the technological feature is used as a key USP for marketing the new flagship product.

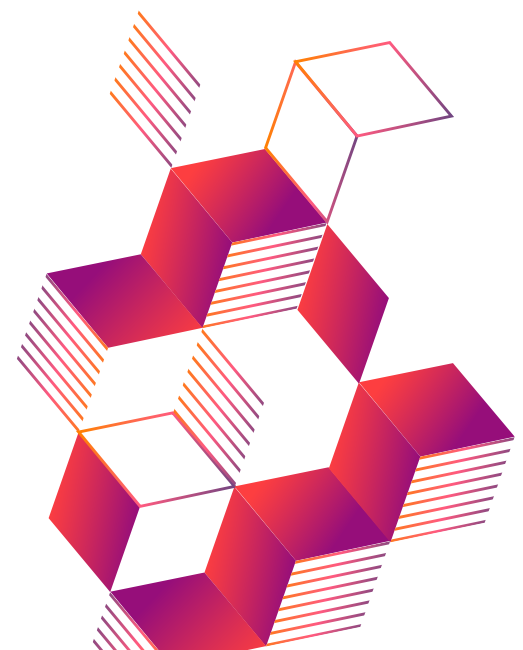
Other KPIs/metrics, like innovation and thought leadership, are also used in the evaluation of a CoE's success and credibility, in addition to measuring the business impact. As an example, Samsung has established metrics for measuring the success of their CoEs based on patents filed, publications, and the capability to develop future innovations.

A two-by-two matrix is also used at SRI-B to measure the business impact of the GCC. The matrix measures the business impact of Samsung's projects as well as the contribution of the GCC to achieving this impact. Four quadrants make up SRI-B's project portfolio. As an example, the projects will have had significant business impacts, and the GCC will contribute the most to them. In another scenario, the projects would have achieved significant business impact, but they would not be attributed to the GCC.



**Intel Technology India Pvt. Ltd.**

For Intel, cost, quality, and schedule are the KPIs used to measure the effectiveness of a CoE. In addition to cost, quality, and schedule, Intel also measures Customer and Partner Perception to determine the effectiveness of a CoE.



## 6. Future Roadmap for CoEs in India

In terms of maturity, CoEs in India have come a long way over the years. CoEs have transformed Indian GCCs from a support team to a strategic partner for the organization's technology and digital roadmap.

In recent years, leaders in the GCC have taken on a global technology leadership role. In addition to managing India teams, the leaders of the GCC CoE also oversee global teams.

Some of the global leaders operating out of India are:

Name	Designation & Role
<b>SRI-B</b>	
 <p data-bbox="233 1167 505 1205"><b>Mohan Rao Goli</b></p>	<p data-bbox="663 927 715 965"><b>VP</b></p> <p data-bbox="655 987 1410 1095">With association of 24+ years with Samsung, Mohan has been leading the Communication Protocol Platform Team in India and the US.</p>
 <p data-bbox="197 1561 550 1599"><b>Balaji Srinivas Holur</b></p>	<p data-bbox="663 1321 715 1359"><b>VP</b></p> <p data-bbox="655 1382 1410 1453">Leads the One Camera team covering geographies beyond India, extending to Vietnam and China.</p>
<b>Intel Technology India Pvt. Ltd.</b>	
 <p data-bbox="277 2051 461 2089"><b>Nivruti Rai</b></p>	<p data-bbox="655 1776 1225 1856"><b>Country Head, Intel India and VP, Intel Foundry Services, Intel</b></p> <p data-bbox="655 1879 1410 2098">Responsible for Intel India operations, design and engineering, ecosystem engagements. Also leads engagements with national and local governments and policymakers, and collaboration with ecosystem players to enable innovation and entrepreneurship.</p>



Name	Designation & Role
 <p data-bbox="258 620 480 658"><b>Sambit Sahu</b></p>	<p data-bbox="655 342 1260 427"><b>VP, Network and Edge Group and GM of IOT Engineering Group, Intel</b></p> <p data-bbox="655 445 1412 595">Leads the worldwide engineering team responsible for product design and development across IoT, Intelligent Edge, AI, Client, and Networking products.</p>
 <p data-bbox="193 1010 547 1048"><b>Gokul Subramaniam</b></p>	<p data-bbox="655 730 1249 815"><b>VP, Client Computing Group &amp; GM, Client Platform &amp; Systems, Intel</b></p> <p data-bbox="655 833 1412 1059">Leads the global organization, which is responsible for delivering validation platforms, reference designs, and system technologies for the client roadmap. In addition, responsible for extending India PC TAM through engineering innovation and solutions.</p>
 <p data-bbox="177 1400 563 1438"><b>Avinash Chakravarthy</b></p>	<p data-bbox="655 1120 1310 1205"><b>VP, Client Computing Group &amp; GM, System Integration &amp; Validation, Intel</b></p> <p data-bbox="655 1223 1412 1413">Leads global teams based in India and the US, which are responsible for system integration, validation and power, and performance optimization for all Windows-based client platforms.</p>
 <p data-bbox="258 1794 480 1832"><b>Subeer Patel</b></p>	<p data-bbox="655 1514 1331 1599"><b>VP, Design Engineering Group &amp; GM, IP Engineering Group Asia Pacific, Intel</b></p> <p data-bbox="655 1617 1412 1727">Leads the IP Silicon Development and Firmware/Software teams in India, Malaysia, and China.</p>

Name	Designation & Role
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**Mercedes Benz Research and Development India (MBRDI)**



**Manu Saale**

**MD & CEO – MBRDI, Head – MBC and Vans**

Heads the entire business units of MBC, Trucks and Buses, and IT out of MBRDI. In addition, he is responsible for MBC's Connected, Autonomous, and Electric activities.



**Prasanna Gonuguntla**

**Head – RD**

Leads the focused business of RD related to product development and validation for Mercedes – Benz Cars and Vans.



**Raghavendra Vaidya**

**Head – Trucks and Bus**

Leads the Truck and Bus operations that also includes the IT business related to this function with ~ 1000 employees.

**Philips Innovation Campus, Bengaluru**



**Arvind Vaishnav**

**Solutions and Market Innovation Leader, Philips**

Leads a team of 50 members, which is focused on customer engagement in developing/scaling E2E solutions in five global markets (India, Japan, APAC, MET, and Africa).

Name	Designation & Role
 <p><b>Pradeep Kumar SK</b></p>	<p><b>Personal Health Digital Solutions and Infrastructure Leader</b></p> <p>Leads a team of 122 that focuses on preventive health care in the health continuum and caters to all the 17 markets of Philips.</p>
 <p><b>Sathish Balakrishnan</b></p>	<p><b>Senior Director, IGT-S R&amp;D</b></p> <p>Leads a team of over 160 members spread across India, the Netherlands, and China, which is focused on end-2-end software for all MR product segments, including Value, Performance, and Premium segments covering the full spectrum of all SW sub-systems.</p>
 <p><b>Saravanan Narayanswamy</b></p>	<p><b>Senior Director, R&amp;D Image Guided Therapy Systems</b></p> <p>IGT cluster comprises a headcount of 250 focusing on the treatment part of the health continuum.</p>

Even the existing CoEs in India have created aspirations and set targets for the next five to six years, where they aim to reach the next stage of their evolution.

CoEs are crucial to enhancing expertise, building capabilities, attracting talent, and increasing innovation quotient of an organization. The best practices for establishing a CoE must be followed by organizations. The CoEs need to foster talent in user experience, design, and product management going forward. For organizations to create world-class CoEs, they will need to invest in additional capabilities.



***Our winning aspiration was to be center of excellence for platform and systems hardware at Intel. We are the CoE for CCG. We still have ways to go to become that for overall Intel. I talked about discrete graphics coming and joining us; I talked about CLE (Computer logic engineering group), FPJ group, camera group joining us. In my opinion, we are still on a journey as and when we get other BUs who are taking notice and start to work with us, and we become the platform and systems hardware engineering organization for Intel, not CCG. That would be the culmination of the journey we have been on.”***

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**Gurpreet Singh Sandhu**  
Senior Director,  
Client Platform & Systems group,  
Intel

## About NASSCOM

NASSCOM is the industry association for the IT-BPM sector in India. A not-for-profit organization funded by the industry, its objective is to build a growth led and sustainable technology and business services sector in the country with over 2,800 members. NASSCOM Research is the in-house research and analytics arm of NASSCOM generating insights and driving thought leadership for today's business leaders and entrepreneurs to strengthen India's position as a hub for digital technologies and innovation.

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