

**Makeover of technology captives from cost-centres to centres of innovation:  
Challenges, approaches and critical success factors<sup>1</sup>**

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**Abstract**

Eroding cost advantage and lack of differentiation are making innovation initiatives a priority for technology captives in India. Topmost challenge in this endeavor to go past the “cost-centre” image is the headcount-driven business model the industry grew up with in the past two decades. Quality of leadership and lack of market/domain understanding are other challenges in their innovation initiatives. Top two strategies employed by the centres are: 1. Anchoring onto the technology roadmap of parent organization; and 2. Develop technology for the emerging market needs. Top two critical success factors as visualized by innovation leaders at these organizations are: 1. Create a robust value assessment metric and 2. Develop innovation platforms that create differentiation for these centres.

**Introduction**

“When we started India centre, there were no engineers in Europe and the centre brought significant cost advantage. Today, excellent alternatives have come up in Eastern Europe and salary difference has shrunk considerably.” This is how a business leader at a technology captive describes the change in situation in the past eight years. Situation in other captives may not exactly match this description. However, captives have realized that “cost-arbitrage” based business model has a finite life. And smart ones have started taking steps in Moving Up The

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Value Chain (MUTVC). Our objective of this study is to find out what kind of challenges technology captives are facing today in MUTVC journey and what strategies they are deploying.

### **Objective and methodology of the study**

We studied following three questions in the context of technology captives:

1. What are the challenges technology captives facing in MUTVC journey?
2. What approaches are they taking?
3. What do they view as the critical success factors in these initiatives?

We talked to business leaders (Managing Directors, VP Technology, Business Unit Head) from four technology captives (Let's call them org-N, org-O, org-P and org-S). These centres are six to twelve years old and they have 800 to 6000 engineers. Our selection of these centres was based on following criteria (a) some conscious effort should be going on at the centre towards MUTVC and (b) authors' accessibility to a business leader at the centre.

### **Related work**

Role of subsidiary initiative in three Indian Software subsidiaries of MNCs, Motorola, Philips and Siemens, has been studied by Rishikesh Krishnan [1]. Subsidiary initiative is a discrete, proactive undertaking by an operational unit situated outside home country that advances a new way for the corporation to use or expand its resources. We consider "subsidiary initiative" to be same as the term "innovation initiative". Author finds that subsidiary initiative played an important role both during the initial stages as well as during the transformational period when the subsidiary repositions itself in its market (i.e. in the network of multinational parent). The paper also shows how parent has slowly divested its stake in the subsidiary in cases of Hughes Software Systems (now Aricent) and iFlex (now Oracle Financial Services Software Ltd) and let the subsidiary chart its own path. This paper studies ongoing subsidiary initiatives and their challenges as perceived by sample technology captives.

In Partnership Maturity Model: Philips Innovation Campus recipe for moving up the value chain, Jaideep, Ajitabh and Ravi study the maturity model proposed by Philips Innovation Centre [2].

Unlike CMM, ISO, PCMM there is no standard model for assessing a captive as to where it stands in the MUTVC journey. This paper presents the systematic efforts undertaken by Philips Software Centre (now called Philips Innovation Campus). PMM has five maturity levels: Resource Centre, Offshore Development Centre, Centre of Excellence, Innovation Centre and Highly Valued Partner. Each level contains several service attributes categorized by various “levels” of perceived value to the customer. Each attribute is labeled as either qualifier and/or differentiator for winning and keeping customer’s business. PMM levels are summarized below:

Level	Name	Brief description	Differentiating attribute
1	Resource Centre	At this level, the centre primarily acts as a resource provider. The resources it provides have basic software competencies in place. Project management remains with the parent company. Cost is managed on a per resource level.	Making resources with basic competencies available in timely manner
2	Offshore Development Centre	As an ODC, the centre manages projects which deliver according to explicit and implicit customer specifications. Employees have competencies to deliver according to implicit requirements. Costs are managed at project level.	Project management (delivery on time, with quality, in budget for a given specification)
3	Centre of Excellence	At this level, the centre co-develops requirements in its area of excellence and contributes to roadmap of product features. Demonstrates domain depth in specific areas. Starts thinking from parent	Co-development of requirements and influencing product / technology roadmap.

		company's customers' perspective.	
4	Innovation Centre	Creates new product ideas and prototypes them. Owns technology and product roadmaps.	Ownership of product / technology roadmap
5	Highly Valued Partner	Influences standards, defines new areas of research, establishes strategic direction towards market leadership	Contribution towards market leadership

This paper uses this model to assess the position of the captives in their MUTVC journey.

## Challenges

Technology captives are facing following challenges in their MUTVC journey:

1. **Business model challenge:** Captives we studied, like most other captives, use headcount driven billing model. Hence, perceived growth is considered to be proportional to the number of engineers added to the centre. It also ensures certain profile of team (ratio of less experienced to more experienced engineers) so that average cost of each engineer is within appropriate limit. This model is anchored in cost and has worked well when the centre is operating at level 1 (Resource Centre) and level 2 (ODC) of PMM. As the centre tries to move to level 3 which is Centre of Excellence, contribution starts to shift from "cost-only" to "cost-and-value". And hence "head count driven" billing model is not most suitable. For example, one of the captives we studied built a team of experts by hiring senior domain specialists. As a consequence, the team profile was top-heavy (more seniors than juniors). This meant average cost to the company for this team is higher than the other teams. Due to lack of a model of assessing value, it was difficult to communicate to the parent as how this team is contributing at a different level of productivity and hence its cost is justified.

2. **Lack of quality leadership:** As one business leader put it, “Senior architects and Directors are cozy in cash cow projects. Where is the motivation to innovate?” or another one said, “Good engineers eventually become babus.” Innovation effort like any other initiative needs leadership. It also means setting vision, connecting dots and taking risks. Another example that was cited was as follows: “A new product feature was proposed and demonstrated to senior managers by an engineer of Advanced Technology Group. First reaction from a senior manager was – can I have the engineer in my team?” There is a tendency to own and control the resources. The concept of tapping into available resources is still a faraway idea. Leaders need to look beyond the size of team they manage.
  
3. **Lack of people with domain/market understanding:** In the past decade engineers have grown as specialists in technology / language platforms such as .Net, SAP, J2EE, C/C++/C# etc. However, as mentioned in the PMM table, differentiating competency at level 3 (Centre of Excellence) is co-developing requirements. This needs deep domain / market understanding. Engineers at captives are far removed from markets. This makes it difficult to understand customer needs and hence propose product features. Most of the captives are internally branded as good technology support wing of the parent company. The internal branding makes it difficult for the captives to venture into building the competency in the domain and understanding markets.

## **Approaches**

The organizations we studied are taking following approaches in their MUTVC journey:

1. **Anchor onto technology roadmap of parent organization:** Org-N has Advanced Technology Group (ATG) with six full-time employees and twelve interns focusing on technology areas with three to five year horizon. The technology areas this group works on are subset of areas chosen by parent organization as part of its technology roadmap. Advantage of this approach is that it ensures alignment between captive and its parent

organization. However, this does not guarantee technology transfer between local ATG and local delivery teams.

2. **Internal VC:** Internal Venture Capital (also known as Corporate Venture Capital – CVC) is a model where organization allocates budget for new ideas, invites ideas, selects a few and funds them through both granting permission to work on the idea and giving other help in terms of lab set up etc [3][4]. Org-O and Org-S use this method for encouraging engineers to work on their ideas. In one organization we studied, the process has following 3 steps:

- a. **Step 1. Idea presentation:** During this step, employee presents her idea in three slides (problem, solution, architecture). Market survey is not expected from technologists. Engineer can spend up to twenty hours for preparation. Maximum filtering of the ideas happen at this stage.
- b. **Step 2. Prototyping:** After you idea is selected, engineer is given 200 to 250 hours to create a prototype. Engineers are also mentored on how ideas should be presented. Assistance is provided in getting appropriate market data to make a business case. At the end of this stage, prototype is presented to the MD of the India centre.
- c. **Step 3. Productization:** During this step idea is presented to relevant portfolio / product / solution manager (typically located at parent organization). And if selected, the idea gets into the product / solution.

In one of the organizations, there was an idea contest where thirty ideas were generated. Out of which six were selected in the first step and two were selected for prototyping. In another organization, forty five prototypes were built last year and six products<sup>2</sup> got created. If the idea is related to productivity tool enhancement (and not a market facing product feature) then the responsibility of diffusing the idea remains with the idea owner

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<sup>2</sup> This organization defines a *product* is something that introduces or modifies a step in an existing business process.

and engineers. However, engineers may not have enough patience to take it all the way. On the other hand, if the idea is about a product feature, then idea becomes part of the product feature list and get the backing of the product / solution manager.

3. **Develop technology for the emerging markets:** As emerging markets become attractive, it provides opportunities for captives to create products for these markets. Org-N and Org-P had resources dedicated for emerging markets. Resources could be in the form of setting up a marketing department and/or research department (sometimes called “Advanced Technology Group”) and a lab. Technology projects are reviewed by Chief Technology Office. Over the past few years the research group is able to identify and define research problems on its own. Technical career path is getting more matured and more engineers are comfortable to remain as specialists rather than becoming managers. To accelerate domain learning one of the organizations has started working with practitioners e.g. a radiologist spending a few hours every week with engineers.

We summarize the approaches in the table below:

Approach	Org-O	Org-N	Org-S	Org-P
Anchor onto parent's technology roadmap		√	√	
Internal Venture Capital	√		√	
Develop technology for emerging markets		√		√

### Critical Success Factors

What do the captives consider as the critical success factors for their innovation initiatives at this point? We gathered following two factors to be the critical success factors:

1. **Creating credible value contribution metric:** To go beyond prevalent cost metric, there is need to establish “value based metric” for assessing the contribution of the captive. And more importantly gain acceptance for this metric from parent organization. As a starting point org-N tracks product ownership ratio calculated as the ratio of engineering headcount at India centre to total engineering headcount for each product line. Note that this metric is different from measuring the size of the group in India. For example, take two groups in India centre: group A co-developing product PA and group B co-developing PB. Group A has fifty engineers in India centre and group B has hundred engineers in India centre. Worldwide product PA has hundred engineers while PB has five hundred engineers. Then product ownership ratio at the India centre for PA is 50% while PB is 20%. Note that this metric does not take into account the nature of work done at India centre and the productivity of the group. “Ticket based billing” is another value metric being implemented by Infosys [5].
2. **Sustaining innovation initiatives beyond a year:** Innovation initiatives (like idea contests) create buzz for a month or two. Beyond that engineers get busy with their work and it becomes difficult to sustain such initiatives. Hence, it is critical to create innovation initiatives which last beyond a year and create tangible outcomes in the form of product or solution contribution. This also means that we need to develop competence to identify technology areas where we can show business contribution in a shorter period of time (say one to two years).

## **Conclusion**

This paper studied challenges, approaches and critical success factors for technology captives to be successful in their MUTVC journey. We believe that in the next 3 to 5 years we will see many

captives transforming themselves as Centre of Excellence and a few becoming Innovation centres. We hope that this study will be useful to technology captives in devising their innovation strategy. Further work needs to be done in (a) creating value metric and; (b) how organizations can make innovation initiatives sustainable.

## References

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