

Exploring MNC - Startup Symbiotic Relationship in an Entrepreneurial Ecosystem

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Abstract Multinational corporations (MNCs) leverage global locations for efficient production and sustained growth, and move significant foreign direct investments globally, particularly into emerging economies. MNCs also engage in entrepreneurial ecosystems of host countries for strategic benefits and impact the ecosystem as well. Of late, MNCs are increasingly entering into emerging economies like India through foreign direct investment (FDI) inflows and they are playing a vital role in start-up promotion in the entrepreneurial ecosystem. Therefore, we examine the role of MNCs and its impact on the entrepreneurial ecosystems in India by exploring a symbiotic relationship between MNCs and startups. We use a case-based method to ascertain and analyze specific benefits that emerge from such symbiotic relationships and draw implications for startups in India's technology entrepreneurial ecosystem.

Keywords Ecosystem, entrepreneurial, MNC, startup, engagement, corporate, symbiotic

I. Introduction

The advent of globalization, multinational corporations (MNCs) being recognized as the agents of globalization, affect 'national economic systems' including labor, business, and innovation, among other sectors. Sustained competitive success of MNCs now rely on how well they are able to leverage efficient global production locations and secure profitable returns internationally (Hirst et al., 2015). One of the indicators of buoyant MNCs activity is the foreign direct investment (FDI) inflows: globally, as of 2015, developing economies saw a total FDI inflow of more than US\$765 billion, an all-time high and up 9% from 2014. India is no exception to this secular trend as it experienced an inflow of US\$44 billion in 2015, ranking herself in the top 5 among FDI recipient developing economies (UNCTAD, 2016). This increased inflow has to be seen in the backdrop of economic reforms that

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started in 1991 and the increased activity of MNCs in setting up R&D centers, production facilities and global in-house centers in India, particularly during the last decade (Rao and Bala Subrahmanya, 2017).

In parallel, the emergence of technology-based entrepreneurship from higher education institutes and incubators increased significantly during the past decade (Parthasarathy and Aoyama, 2006; Kerr et al., 2014). This is evident from the number of newly-emerged technology-based startups, their funding both in terms of aggregate number of deals and value, employment and exports generated through these startups (ASSOCHAM, 2016). Given the impetus from the Government of India in recognizing the potential of startups and broadly MSMEs (micro, small and medium enterprises) to drive economic growth, there has been a growing policy support to sustain the momentum of such emergence and growth of startups (Ministry of MSMEs, 2015; DIPP, 2016b). Various critical components identified within India's entrepreneurial ecosystem include MNCs providing a source of entrepreneurship, talent, finance, markets as well as various supporting services (Bala Subrahmanya, 2017). Therefore, it is worthwhile to probe the role MNCs play in a technology entrepreneurial ecosystem and this paper is an attempt towards that end.

This paper comprises four sections. Section II explains how MNCs have increased their scope and scale of activities in their globally distributed operations. MNCs have the capacity to fill certain gaps that are recognized in an entrepreneurial ecosystem as they have increasing numbers of centers/facilities and sector specialization. Section III explains the objectives of the MNCs to nurture symbiotic ecosystem engagements including search for new markets to grow, and acquiring/augmenting new capabilities beyond the home country. Using a case-based method, we will explain the engagement of two MNCs in the Indian technology entrepreneurial ecosystem. Further, we will introduce other benefits to MNCs like encouraging intrapreneurship, and signaling to labor markets. Finally, Section IV draws implications for technology startups from such symbiotic relationships.

II. MNC Activities in India: FDI Expenditures and R&D

Since the initiation of economic reforms in 1991, it became easier for MNCs to deploy investments into India. MNCs have grown in complexity and become influential as a binding force in bringing economies together (UNCTAD, 1993). India attracts MNC investments in various sectors from across the globe, particularly from developed economies. The Reserve Bank of India (RBI) monitors all inflows as well as expenditures of FDI in India. From the select sample data provided by RBI on FDI we note a wide range of sectors

invested and the funds originate from countries across the globe as shown in Table 1 and Table 2 respectively.

Table 1 Number of FDI companies by industry (select sample) 2014-16

Industry Sector	Number of companies receiving FDI (2014-15 to 2015-16)
Services	4070
Manufacturing	1820
Computer and related activities	1292
Trade Wholesale & Retail	433
Machinery and machine tools	425
Chemicals and Chemical Products	283
Transport Storage and communication	183
Electrical machinery and apparatus	162
Food Products & Beverages	101
Rubber and Plastic Products	88
Motor Vehicles and other Transport Equipment	88
Others	543
All Industries	6433

Source: RBI, 2017

This gives us an indication of the widespread nature of FDI occurring in India so far. Further, expenditures of FDIs are categorized under different headings and reported annually. RBI started tracking R&D expenditures as a separate heading only since 2003. This time series sampling data for select FDI companies indicate a healthy growth rate, year on year and cumulatively as shown in Table 3, even though it represents only a small portion of the overall FDI inflows (RBI, 2017). Earlier studies (Mrinalini et al., 2013) indicate that even this R&D investment is concentrated in a few industries like software and IT, pharmaceutical and automotive sectors accounting for 69% of the FDI inflows and creating 82% of the jobs.

Table 2 FDI Inflows from different countries 2014-16

	Manufacturing	Services	Total
USA	255	1,165	1,490
Mauritius	146	554	831
Singapore	163	451	708
UK	130	299	459
Japan	221	159	397
Germany	182	171	373
Netherlands	76	179	276
UAE	58	129	225
France	57	80	151
Switzerland	72	68	149
Other	460	815	1,374
Total	1,820	4,070	6,433

Source: RBI, 2017

Table 3 Growth of FDI companies' R&D expenditure

Financial year	Select FDI companies	R&D Expenditure from select FDI companies (Rs. Million)	% Change over previous year
2012-13	3,320	1,260	-
2013-14	3,320	1,601	27.06
2014-15	3,320	1,791	11.87
2013-14	6,433	9,657	-
2014-15	6,433	10,915	13.03
2015-16	6,433	12,696	16.32

Source: (RBI, 2017)

We can further substantiate the interest of MNCs in India to explore R&D opportunities in emerging economies through other indicators like patenting (Mrinalini et al., 2013) and increase in interest to setting up Global-In-house centers (GICs). Industry associations like the National Association of Software and Services Companies (NASSCOM) have set up special-interest groups to help MNCs collaborate, and this has resulted in buoyant activity in the last decade. NASSCOM GIC council reports that India accounts for over 45% of the GICs, with more than 1,000 members and they created more than 745,000 jobs (NASSCOM, 2017a). Therefore, from the FDI inflows, the diverse nature

of activities conducted and the global centers evolving to contribute in value creation for the parent firm would indicate wide scope and intensity of activities affecting both product and labor markets.

More recently, India is emerging as a potential global source for technology startups and the high rate of emergence of new generation startups is seen as a response to globalization and the information and communication technology revolution. MNCs play an important role in such ecosystem development (Bala Subrahmanya, 2015). It is in this context that we will examine the engagements of MNCs that committed investments in the entrepreneurial ecosystem of technology startups in India.

III. MNCs in Entrepreneurial Ecosystem for Technology Startups

An entrepreneurial ecosystem as defined by Mason & Brown (2014, p. 5) is “a set of entrepreneurial actors, entrepreneurial organizations, and institutions, processes which...coalesce to connect, mediate, and govern the performance within the local entrepreneurial environment.” India is recognized for its vibrant regional ecosystems that provide an effective method for development of innovation and emergence and growth of technology-based ventures. These regional ecosystems in India are spread across cities particularly where there is already the presence of entrepreneurs and organizations supporting new ventures.

In addition to these, a sponsorship policy from the government, providing various benefits to startups and supporting organizations gives further impetus to the ecosystem (DIPP, 2016b). Indicators for vibrant activity in the ecosystem may be seen from the rate of emergence of new ventures and growth of new ventures, funding raised by these ventures, jobs created by these ventures, and overall policy outlay supporting the entrepreneurial ecosystem by both state and central governments. MNCs form an important part of such entrepreneurial ecosystem providing support, mentoring, funding, market access among other benefits to startups (Bala Subrahmanya, 2017).

Weiblen & Chesbrough (2015) offer a typology of four distinct external corporate engagement models, namely (i) the traditional equity investments through corporate venture arm, (ii) inside-out corporate incubation, (iii) outside-in engaging external startups and (iv) through a platform program. It is useful to note that these models are adopted in combination to achieve multiple objectives for an MNC. In India, MNC engagement is evident from the increase in number of accelerators, increase in corporate venture capital interest, and increase in corporates encouraging entrepreneurship internally

among other programs supported by the MNC. This in turn indicates that MNCs have broader, open and strategic objectives for such ecosystem engagements. We present a few select cases in Table 4 of such engagements in India across sectors and models.

Table 4 Select cases MNC - startup engagements in India

Engagement name	Home country	Location of engagement	Year	Type	Sector
Bosch DNA	Germany	Bangalore	2016	Outside-In	Automotive, Internet of Things
Target Accelerator	USA	Bangalore	2014	Outside-In	Retail
SwissRe Accelerator	Switzerland	Bangalore	2016	Outside-In	Insurance
Pitney Bowes Accelerator	USA	Noida	2015	Outside-In	Technology
Microsoft Accelerator	USA	Bangalore	2012	Platform	Technology
Barclays Rise	UK	Mumbai	2016	Outside-In	Banking, Fin-tech
Google Launchpad	US	San Francisco	2014	Platform	Technology
Cisco Launchpad	US	Bangalore	2016	Platform	Technology
Five.eight GE Healthcare	US	Bangalore	2016	Corporate venture capital	Healthcare
Intel NBI	US	Mumbai	2015	Inside-Out	Retail
Reliance GenNext	India	Mumbai	2015	Outside-In	Conglomerate
Amazon	USA	Various	2014	Combination	Conglomerate

Source: Respective program websites; classification of type and sector by author

Incubators and accelerators form an important part of the support system in the ecosystem providing a conducive environment to resolve a startup’s “liability of newness” (Freeman et al., 1983). These incubators provide the startups free working space, business services and valuable mentoring as benefits in engaging with MNCs. The corporate run accelerators have seen a year on year growth of 35% in India during 2016 (NASSCOM, 2017b). MNCs may choose to fund the startups in various forms and find meaningful ways to

engage them for strategic benefits through the program. Further impetus is provided through government policies allowing a portion of the profits to be spent for setting up accelerators and incubators that is tax exempt. Government of India further acknowledges the role of such engagements by releasing guidelines for setting up corporate incubators (DIPP, 2016a).

There is wide heterogeneity in objectives and benefits, among other differences, for such corporate accelerators. Kohler (2016) notes that MNC managers need to consider other forms of collaboration to become an effective part of MNCs overall innovation strategy. While considering only MNCs' strategic objectives would be insufficient in such a collaboration, we adopt a symbiotic relationship model covering both the startups and the MNCs in the ecosystem (Burfield, 2014). A symbiotic relationship denotes a close association in physical proximity provided by the ecosystem, benefitting mutually through their interactions, and also portrays the dynamic living relationship between the thriving startups and the MNC. Table 5 lists some of the mutual benefits and their drivers, which we will further explore under different heads. These include MNCs' need to expanding markets beyond their home country, appropriating new technology, acquiring new capabilities, influencing internal corporate culture and external market perception.

Table 5 MNC-startup symbiotic relationship benefits and drivers

MNC Benefits	Startup Benefits	Life Stage	Driver
Encouraging entrepreneurship internally	Resources in early stages	Emergence	Cultural asymmetry
Growing in a new market	Access to market	Survival	Strategic asymmetry
Acquiring new capabilities	Resources to build products	Survival	Resource asymmetry
Adopting lean and flexible development methodologies	Mentored on industry grade processes	Growth	Complementarity
Acquiring technology	Exit opportunity	Exit	Complementarity

1. MNCs Engaging to Grow in New Markets

1.1 Overview

MNCs are able to open up linkages with the ecosystem that can help in building competitive advantage by embedding themselves within a network of customers and suppliers in the market. MNCs that operate in mature, developed economies look for expansion into emerging economies that are less mature (Buckley & Casson, 1998). This is particularly true when the emerging market conditions are conducive for porting MNC's business model. Further

India's labor market provides highly qualified, low cost labor to support technology operations in the developed home market of an MNC, which led to a proliferation of MNC R&D establishments and offshore development centers. These developments were accelerated by policies enabling easier land acquisition with respect to technology parks and export zones created for specific industries. It is a more recent phenomenon for technology MNCs to look at India as a large product market owing to its size, and growing internet and technology penetration, with continued focus from the government to improve basic infrastructure.

Such opportunities in emerging economies motivate MNCs start to engage in the local markets with its specialization and product portfolio and pursue early lock-in with potentially high growth ventures. MNC provides valuable mentorship to the startup in identifying and handling challenges for integrating the offering with large operations and technology constraints and the startup learns how customers respond to their offering, which is a valuable experience to gain in early stages of product development. MNCs are able to identify process or red tape burden that is imposed during such engagements and may relax some of those in lieu of the learning about the local market as against the level of risk taken.

For example, in the ICT industry, Microsoft, Google, IBM, and Amazon are competing for market share in India's cloud infrastructure business. Each of these companies has startup or entrepreneur engagement programs that have low entry barriers, is mostly free to use the infrastructure up to a specific limit set, and also offers consulting and engineering support from their local R&D centers. This is done with the intention to support the early stage startup survival by minimizing their capital expenditure, and providing an opportunity to lock in a high growth startup as a customer early in their life stage. As a result, startups get to choose among available alternatives that are best suited for their life stage and need. To exemplify MNC's objective to grow in a host market further, we analyze Amazon's startup engagement programs in India in the following section.

1.2 Amazon India Ecosystem Engagements

At the outset, it is important note that Amazon is a US\$136 billion e-commerce and cloud computing MNC that has market presence across 14 global markets. Amazon India started in 2013 and its e-commerce operations in India have rapidly grown (Amazon, 2016). Amazon reports and tracks its performance organized across three segments namely (1) North America, its home base, (2) International and (3) Amazon Web Services. In both North America and International segments, Amazon Seller Services identifies its customers as sellers who use Amazon's online and offline tools to retail over the Internet. Amazon Web Services (AWS) serves developers and enterprises

of all sizes offering a broad range of computation, storage and related ICT infrastructure services.

India's e-commerce market is highly competitive and includes local startups like flipkart, PayTM and Big Basket among others, and the industry boasts a CAGR of more than 35% over the last few years and is expected to sustain that growth rate over the next few years (PWC & ASSOCHAM, 2014). Since its launch in 2014, Amazon competes actively in the Indian e-commerce market and gets FDI through the parent company's various investment arms globally. Amazon had brought in about US\$1.4 billion through the automatic route since 2013 till 2016 (DIPP, 2017). Much of the FDI investments have gone into entities that enable Amazon's India e-commerce operations like seller services, Internet and business services, distribution and warehousing services. Considering the Internet and mobile penetration growth rates within the country and the lack of infrastructure to support its operations, this investment not only is necessary for the country, but also provides a market leadership opportunity for Amazon. Amazon actively markets across India with its coverage and openness to partner with sellers not just in tier 1 cities, but also across tier 2 and tier 3 cities as well. These, along with programs targeted for sellers to onboard Amazon platform and ease with which they can go online, is evident from the fact that more than half of its sales and seller base are in tier 2 and tier 3 cities (Amazon India, 2015).

Amazon engages with sellers through its Launchpad program offering its e-commerce platform services, and with technology startups through its Activate program offering its AWS products. Together both programs form a critical way for Amazon engaging in the entrepreneurial ecosystem.

Amazon Launchpad program provides a structured way for Amazon to identify and build long standing relationships with startups that create market worthy products and utilizes Amazon's expertise in distribution including global market reach, and premium shipping services and supporting services including a reliable online store front and infrastructure both online and offline. This program provides small sellers and startups that develop merchandise to easily develop their online and mobile channel sales with the tools provided by Amazon, while Amazon benefits by providing wider choices to its end consumers, and earning fees from sellers through these services (Amazon, 2017a).

Amazon Web Services (AWS) is already a market leader in providing online cloud infrastructure and counts some of the fastest grown startups, and other enterprises as its customers. AWS already contributes more than one third of Amazon's overall valuation, revenue as well as earnings (Amazon Web Services: 2016 In Review, 2016). Hence it is critical for Amazon to retain the growth trajectory and market leadership globally for AWS. Whereas startups are in need of reliable computer infrastructure without much capital

expenditure to minimize the total cost of ownership and achieve the much-needed flexibility to scale as needed. To enable startups to adopt AWS, Amazon Activate program was started as a global program that provides a package including free cloud infrastructure, training and related services. Activate is now ecosystem partner for many corporate accelerators, associations, venture capital funds, co-working spaces, providing means to onboard startups quickly (Amazon, 2017b). Startups utilize AWS in innovative ways and better practices that are subsequently integrated into the AWS platform and diffused as variant offerings.

Thus, the nature of symbiotic relationship between Amazon and startups providing mutual benefits can be seen to impact the entrepreneurial ecosystem positively, as referred in Table 6.

Table 6 Amazon ecosystem engagement programs in India

Amazon program	Services	Symbiotic benefits	Engagement since inception
Amazon Launchpad since 2016	“provide Indian Startups a platform to market, sell, and deliver innovative products to millions of Amazon customers across India and around the world”	Amazon is able to offer large variety of choices to its customers. Entrepreneurs are able to access the market broadly and scale quickly	1000+ products listed from more than 25 startups on amazon.in Lists more than 100 network partners worldwide
Amazon Activate since 2015	“provide your startup with the resources you need to get started quickly and easily on AWS.”	Amazon is able to lock in startups early into the AWS program. Technology startups are able to avoid large capital expenditure early in their life stage	100+ startups since inception Partner to more than 200 accelerators, associations, VC funds worldwide

Source: Benefits and engagement comments by author (Amazon, 2017a, 2017b).

2. MNCs Engaging to Identify Appropriate Technology

2.1 Overview

Internal product development in a large MNC is laborious as well as a costly affair, especially when an MNC is making significant investments in capital to service existing its customer base (Cohen & Klepper, 1996), whereas, a startup may require significant capital and marketing capability to directly compete with the incumbent MNC. Therefore, it is worthwhile to evaluate adjacency and complementarity of the startup's technology with MNC's value chain.

Coase (1974) distinguished this as market for goods, and market for "ideas". In our context, startups, instead of selling directly in the product market for technology, may choose to collaborate with MNCs and sell through them, resulting in a softer product market competition.

This necessitates checks and balances for a startup utilizing the intellectual property regimen in the ecosystem. With minimal disclosures, a startup may not be able to convince an MNC of the value of its technology, while disclosure without extensive protection agreements in place may lead to expropriation especially with the resources available at the disposal of MNCs. Gans & Stern (2003) indicate excludability environment and complementary asset environment as two subtle factors that determine the choice of the startup to choose its commercialization strategy. We also observe that MNCs are able to test and trial new technology without compromising the existing service levels or infrastructure with adequate security restrictions. This is a valuable offering to the startup in what Markham (2002) termed as crossing the "valley of death" to successfully commercialize technology that emerge out of research with startup founders as product champions. Specifically, resources offered by an MNC are utilized by startups to reduce its own risk, and allow a startup move successfully to the next level of development.

Also, we have a large empirical literature suggesting R&D performance (defined as more 'innovation per dollar') is the best in smaller firms (Cohen & Klepper, 1996). While many factors can explain this, we point to rights on intellectual property and ownership, that are more pronounced when the firm size is small, while large MNCs systematically own the rights from their inventor employees (Acs & Preston, 1997). MNCs are able to gather speed, agility and risk taking while maintaining control and strategic direction through such adoption of technology from startups. MNCs have a superior ability to appropriate returns from innovations through licensing and buying rights. In addition, flexibility in R&D is necessary and MNCs cannot be overcommitted to just one technology and suffer obsolescence (Buckley & Casson, 1998). To exemplify technology appropriation by MNCs, we will closely examine SAP's startup engagements.

2.2 SAP Startup Focus Program

SAP is a Euro22 billion integrated software MNC headquartered in Waldorf in Germany, with leadership position in the enterprise application software business, supporting and automating business processes. SAP has subsidiaries in all major countries including India, which employs 1700+ people with revenues of about half a billion euro for 2016 from India. SAP's platform supports customers across 180 countries and its latest release of its business suite SAPS and HANA was developed organically. SAP indicates interest and precedence in acquiring technology companies worldwide with four

acquisitions in 2016 alone and a US\$35 million fund to catalyze startup investments through SAP.io was launched in the same year. The openness to integrate and extend SAP's platform for digital economy businesses and investments into disruptive technologies is a stated objective of the company (Boufford, 2016).

SAP runs a global accelerator program since 2012, with a presence in India as well, targeting startups that can build solutions in analytics and big-data on top of its enterprise platform technology HANA. By providing free licenses, this program allows developers to build on HANA and access SAP's existing customer base through the partner program and a digital marketplace. SAP utilizes the program to diversify capabilities through startups' technologies and applications in areas where it never had historical technological strength like analytics (Weiblen & Chesbrough, 2015). Thus, the program is a mechanism to appropriate new technology products into its platform, while providing the startup the opportunity to scale and help in the go-to-market strategies. The program, dubbed the worldwide ecosystem of innovation, currently encompasses more than 5,000 startups across 25 industries and 58 countries, and there are more than 250 solutions validated by SAP and made available to its customers worldwide. There are more than 30 Indian startup products that extend HANA capabilities and offered globally through the platform as of date (SAP, 2017).

3. MNCs Engaging to Acquire New Capabilities

A firm's competitive advantage in the technology industry arises from the speed with which new capabilities are developed through utilization of new scientific effects to build products. While many MNCs having built economies of scale in their legacy business model and boast significant market share, the competitive advantage may not be defensible if there are shifts in consumer preferences, cost advantages from new effects or business models, lack of ability to iterate developing new market worthy products. By virtue of the constraints that startups face in their early stages, due to lack of capital, they figure alternate ways to create value in their products by being more agile, and adopting leaner development methods. Empirically, we see that the survival rate of startups is a small number. Failed startups with technology capabilities provide acquisition opportunities and serve as a mode of exit for the startup. In addition MNCs are able to avoid large capital expenditure and business planning to organically build such capabilities (Buenstorf, 2016).

The second model to acquire capabilities is through a transaction called "Acqui-Hire", that has been proliferating in the recent years, where an acquirer only hires the founders and the core team without any interest in the product

designed by the startup (Chatterji & Patro, 2014). This type of transaction may not involve any specific asset transfers, both tangible and intangible, but the acquirer to work in areas that leverage their capabilities, typically in technology and new product development areas, will absorb the key personnel. Thus making “acqui-hire” a form of orchestration within the dynamic capabilities framework (Augier & Teece, 2007). Startup founders and early employees come with valuable experiences in technologies that have steep learning curves and the personnel acquired from the startup provide such experience derived from “learning by doing.” MNCs may incur capital expenditure over a long period to organically build such capability instead choose to do talent acquisition from firms that may fail early, but have built the capability. Thus MNCs are able to internalize external dynamic capabilities through such ecosystem engagements. In addition to capability acquisition, integration of entrepreneurs has influences on the corporate culture, which requires an elaboration.

4. MNCs Engaging to Influence Internal Culture and External Perception

Of late, corporations emulating startup culture is seen as a positive development on multiple fronts which include the ability to quickly respond to changes in the market and technology (Morris et al., 2010). Understanding that venture ideas can emerge from anywhere within the enterprise, and therefore for supporting such entrepreneurs within the enterprise including subsidiaries, of late, many corporations have a structured ‘Intrapreneurship’ programs (Zahra et al., 2000). These programs provide a break for the employees from their regular job responsibilities, while providing them needed resources like team and capital to develop new products. These time bound intrapreneurship programs provide additional revenue potentials, spin-off opportunities and capabilities to the enterprise.

Given the nature of managerial expertise within MNCs, engagement with the startup ecosystem by bringing in external entrepreneurs provides a thrust to the program. Among the three theories for emergence of entrepreneurship it is bricolage (other two being causation, and effectuation) that best explains finding and utilizing resources in unconventional ways to overcome obstacles. Managers and innovators who pursue intrapreneurship within the MNC constituting the bottom-up innovation process, on the one hand, and the ecosystem engagement of the MNC with the startups, on the other together, provide a conducive environment for knowledge sharing and networking that bricolage relies on (Halme et al., 2012).

There are programs like Entrepreneur-in-Residence created within the MNC

to emulate a cultural setting of a startup and also providing an independent mechanism for engagement with the startups. Global in-house centers in India of Intel, Target, and Microsoft are some examples where startup engagement programs and concurrent intrapreneurship programs prevail, providing the foundation for building a startup like culture. Of note is a particular form of mentoring called 'reverse mentoring' encouraging cross-generational learning. MNCs like Unilever have had programs that facilitated senior veteran leaders being mentored by the younger generation / millennial employees or startups to encourage adoption of newer technologies and respond to fast changing trends. Thus we see the cultural influence such ecosystem engagements can bring to an MNC.

One of the other important elements in the entrepreneurial ecosystem is favorable media (Bala Subrahmanya, 2017). MNCs operating in host markets, need to gain trust and signal their brand in both product and labor markets. These signals effect marketing of products and attract talent that the MNC relies to perform. MNCs signal their commitment, and impact, projecting a credible image and build familiarity of their identity in the host market. Such credibility can be achieved through activities explained in previous sections along with a favorable external media. MNCs in India actively sponsor and host events, participate in social and community action, publicize their accelerator efforts, partner with other ecosystem participants like associations and governments, commit investments and long term contracts with startups. These activities provide positive signals externally and position the MNC as being innovative, differentiated and thus developing trust in the host labor market.

IV. Summary and Conclusions

From our analysis we see that MNCs are moving capital into emerging economies for efficient production and sustained growth, and their engagements are increasing in scope and intensity. MNCs in India are engaging in an entrepreneurial ecosystem with multiple strategic objectives. First and foremost, among those objectives is the MNCs' imperative for growth, and emerging markets provide room for such growth. Secondly, MNCs have an opportunity to appropriate technologies and internalize dynamic capabilities from vibrant ecosystems through different models. Thirdly, ecosystem engagements of MNCs provide impetus to their own entrepreneurial processes and provide an opportunity to signal to labor markets positively.

We are able to delineate the complementary benefits of MNC engagements

to technology startups, and thereby signifying a symbiotic relationship. We have also identified drivers for such a relationship and the benefits they provide to startups across their life stages.

There are multiple managerial implications for MNCs and startups in leveraging such a relationship.

The first implication for the MNCs is for any entrepreneurial ecosystem engagement to be beneficial, it is critical to identify the strategic need and then choose the engagement model that best fits to achieve it. The strategic needs on the exemplified cases were different in different cases: For Amazon, it was primarily market growth whereas for SAP Labs, it was the need for acquiring new technology capabilities. Accordingly, the chosen engagement model was different. MNCs choose a combination of the typical engagement models to suit their needs, strategy and culture. Technology startups in the ecosystem are inherently knowledgeable about the local markets and have built capabilities that are difficult to imitate or organically grow by MNCs. The MNCs have interest and need to acquire such capabilities that become opportunities for the startups to garner further resources.

The second implication stems from the survival rate of startups, which is only a very small percentage. The MNCs play a key role in providing exit opportunities for startups that have built hard capabilities. Such an acquisition of capability needs to be orchestrated, duly considering both its strategic value to the MNC and it should be timed to match the internal needs and the external ecosystem context. This implies that, to drive specific open innovation strategies, MNCs can decide on the lifecycle stage of startups to engage, or choose technologies that are not proven yet, but can still be tested for its potential value.

The third implication shows that startups bring to MNCs a positive cultural influence and these engagements become an important support mechanism in a thriving ecosystem providing specialized resources, mentoring and capital. Finally, these engagements also provide an opportunity for startups to market and signal their innovation capabilities alongside MNCs. While the cases described provide insights into the modalities of MNC engagements in the context of India's technology entrepreneurial ecosystem, the benefits probed are still limited. This provides opportunities for further research by including other strategic objectives and extending the symbiotic relationship proposed.

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