The Indian Startup Ecosystem: Drivers, Challenges and Pillars of Support

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ABSTRACT

In recent years, startups have been receiving increased attention in many parts of the world. In India, the number of startups has increased fast and more support has become available in all dimensions. This paper analyses the current state of the Indian startup ecosystem and has three goals: to provide an understanding of the growth drivers and motivations of Indian startup founders; identify challenges facing these startups; and outline the pillars in place that support them. The analysis uses data collated from semi-structured interviews with startup founders, investors, and representatives of support organisations. In addition, a survey of relevant literature strengthens the robustness of the findings.

1. INTRODUCTION

Startups,[#] in India as in many other parts of the world, have received increased attention in recent years. Their numbers are on the rise and they are now being widely recognised as important engines for growth and jobs generation. Through innovation and scalable technology, startups can generate impactful solutions, and thereby act as vehicles for socio-economic development and transformation.

The Indian startup ecosystem has evolved dynamically over the last two decades. Some startups were founded in the 2000s, but the ecosystem was still immature as only a few investors were active and the number of support organisations such as incubators and accelerators was limited. Some successful exits[$] occurred in the late 2000s and in the last ten years, the number of startups increased fast and more support has become available in all dimensions. Bangalore has emerged as India's primary startup hub, but significant founding activity is also taking place in Mumbai and the National Capital Region (NCR), as well as some smaller cities.[1]

The aim of this study is to provide a comprehensive understanding of both the growth drivers as well as the challenges faced by Indian startups. Further, the study investigates how the startup ecosystem has developed over the years and describes where and which kind of support is available. While the primary focus is on technology-driven startups,

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[#]   In this study, the term 'startup' is used in orientation with the definition of the federal government (Dwivedi, A. B. (2016): The government has finally defined the word 'startup'. https://yourstory.com/2016/02/government-definition-startup; accessed: 23.09.2019). Accordingly, startups are understood as entities, which are in the early stages of setting up their operations and work towards innovation, development, deployment, and commercialization of new products, processes, or services driven by technology or intellectual property.

[$]   An exit occurs when an entrepreneur sells his or her shares in the startup to others (e.g. investors or another company).

the study recognises that non-tech, social and micro-entrepreneurs have also come up with innovative ideas and solutions.

To provide insights on these issues, a qualitative research was conducted. Semi-structured interviews were done with experts in the Indian startup ecosystem, including startup founders, investors, and representatives of support organisations (see Annex for more details on the research methodology, including the list of interviewees). A literature review was also carried out to provide further background information.

The rest of the paper is structured as follows. The second section outlines the key opportunities and growth drivers of India's startup ecosystem, as identified through the interviews. Section 3 then outlines the challenges facing startups in India. The penultimate section describes how the ecosystem has evolved, and where and what kind of support is available to help startups overcome challenges and seize opportunities. The paper concludes by outlining the imperatives of further action to support India's startups.

2. STARTUPS IN INDIA: OPPORTUNITIES AND GROWTH DRIVERS

Startups do not exist in a vacuum but are part of a broader business environment. Thus, the growth drivers of the Indian startup ecosystem need to be understood in the context of various factors: earlier economic reforms and current market trends, as well as the impact of technological change and changing attitudes on the part of government, large companies, and society overall. This section describes the five key opportunities and growth drivers which were identified in the interviews.

2.1 Scope and Characteristics of the Indian Market

India is often described as "the posterchild of emerging markets" for its vast commercial potential for startups. In a country with a population of nearly 1.3 billion people, even niche products can have significant market potential. In the 1990s, economic reforms moved India towards a more market-based economic system. Since this liberalisation, the overall economic development has been dynamic and as of 2017, the Indian economy had a GDP of US$2.726 trillion.[2] With a GDP growth of 7.0 percent in 2018,[3] India is one of the fastest-growing large economies in the world. Therefore, the Indian market is perceived as being capable of offering an abundance of opportunities for startups.

As the Indian economy continues to grow, incomes and purchasing power are increasing steadily. Rising consumption is driven by the growth of upper-middle income and high-income segments of the population, which will grow from being one in four households today, to one in two households by 2030.[4] Along with this, the demographics of the population are another advantage. Half of the country's population are below the age of 25 years and the youth is aspirational.[5] The nearly 700 million people born through the late 1980s to the 2000s carry material ambitions and have the ability to spend and make those goals a reality.[6]

India's huge diversity in culture, language, ethnicity and religion has proved to be both a curse and a blessing for startups. On the one hand, a startup's understanding of customers is often limited to certain regions, where they know the local language and local people. This makes it hard for startups to scale their products to customers across the country (see section 3.2 for further detail). On the other hand, if solutions are successful in addressing the needs of diverse customers pan-India, they can likely find market uptake in other geographies such as Africa and Latin America, and even the developed world. In addition, many Indian

startups do not only look at Indian problems, but offer customised solutions for markets abroad. For instance, Indian startups often do pilots and serve customers in the United States, where the user base has a much higher ability to pay.

2.2. Technological Change

There is a huge need for innovative solutions, particularly those that alleviate poverty and benefit a large number of people. Given the scale of India and its resource constraints, low-cost, high-impact solutions are required. Technology startups play a crucial role in accomplishing this, because of their potential for scalability and exponential growth.

Over the last few decades, technological change has reduced the cost of building digital products and has provided access to consumer markets. In the past, companies had to set up physical infrastructure to interact with customers, which implied high customer acquisition costs that proved prohibitive for small companies in the same field as established corporations. As India improved its digital connectivity, market access barriers have been brought down. The broadband penetration is increasing fast and the number of wireline subscribers in 2018 is expected to increase by 44 percent over the next four years.[7] The number of internet users was pegged at 483 million in 2018 and is projected to reach 666.4 million in 2025.[8] In addition, the government initiative, "Digital Saksharta Abhiyaan", was started to promote digital literacy and help people become more knowledgeable about the digital world.[9]

Startups rely on market access as well as possibilities to identify and charge customers. Establishing someone's identity is grit in the wheels of commerce; as the means for identity verification and digital payments have become more widely available in recent years, startups

can serve legions of new customers.[10] The Aadhaar biometric ID system, introduced in 2009 and assigning Indian residents a unique identity number, has made it easier for companies to validate information about their customers. Successive Indian governments have also actively promoted both the opening of bank accounts and the expansion of digital payments to promote financial inclusion.[11] Thus, large parts of the population are now able to conduct digital payments, as well as receive government benefits and subsidies, and therefore become part of the formal economy. Moreover, Aadhaar and the payments systems are part of the "India Stack", which is envisioned as a new social infrastructure that will "help propel India into the 21st-century digital economy".[12] Increased financial inclusion, as well as the banknote demonetisation in 2016, led to a boom of fintech[&] startups, which was the top funded sector in 2018.[13]

2.3. Increased Political Will and Government Support

The government under Prime Minister Narendra Modi, who assumed power in 2014, put digital transformation at the centre of its plans. The federal as well as some state governments increasingly recognise startups as important engines for economic growth. Moreover, startups are expected to create jobs that will narrow the high unemployment rate in the country. In 2018, startups accounted for 2.64 percent of the total jobs created in India that year; they are projected to create between 200,000 and 250,000 jobs in 2019.[14]

The Modi government has made various efforts to support startups. The flagship initiative, "Startup India", was initiated by the prime minister in 2016 "to build a strong ecosystem that is conducive for the growth of startup businesses, to drive sustainable economic growth and

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& Fintech startups work in the field of emerging financial services technologies.

generate large scale employment opportunities."[15] Measures include a fund of INR 100 billion, financial support for incubators, establishment of tinkering labs, tax benefits, and a simplified recognition process for the setting-up of businesses, among others.[16] So far, 14,036 startups have been recognised according to the definition of the Department of Industrial Policy and Promotion (DIPP); 660 startups have received business support; and 132 startups have been funded.[17] Some interview partners for this paper expressed doubt as to whether 'Startup India' has indeed made impact. However, they see the programme as a good step overall.

2.4. Companies Increasingly Seek to Engage in Open Innovation

In an increasingly uncertain and fast-moving business environment, large companies face pressures to innovate ever more rapidly. Their challenge is twofold: to innovate incrementally to grow their existing business, while understanding ongoing changes in their industry and making provisions for more radical innovations. The latter is proving to be difficult, and more large companies realise that they cannot simply rely on internally generated knowledge and on building everything themselves. As this 'closed innovation' paradigm loses its relevance, more companies turn towards open innovation approaches.[18]

Thus, companies in India are increasingly reaching out to startups to increase their own innovativeness. They enter into exchange and strategic partnerships with startups, while supporting them with various corporate-specific resources.[19] These engagements can be mutually beneficial.[20] While a few years ago, corporate managers needed to be convinced of the benefits of working with startups, there has been a recognisable change in attitudes and many established companies today acknowledge the competitive advantages of startups, especially in terms of their speed and passion.

2.5. Changing Perceptions towards Entrepreneurship

Those who are willing to take risks are the ones who can put ideas into practice and seize opportunities. Most startup founders in India have strong intrinsic motivations and report being driven by their passion, curiosity, satisfaction that comes from problem solving, and desire to make a difference in society. Many Indian founders have previously worked at a corporate environment, but despite the stability in those jobs and the benefits of high salaries and other perks, they perceived those jobs as constraining to their creativity. A lack of identification with a corporate culture often leads them to create something on their own, which enables them to define their own values and control their own direction.

Moreover, a change in perceptions among the broader society is noticeable. The success stories of remarkable exits and India's first unicorns[21] have received much media attention. Subsequently, some founders have become India's "startup heroes", contributing to a current image of entrepreneurship as "cool" and "glamorous". Despite some hype, the social acceptability of entrepreneurial careers is indeed increasing.

3. CHALLENGES

There are typical challenges that startups all over the world struggle with. Certain obstacles, however, are more peculiar to the Indian business environment. In this study, India was often described as a harsh environment for startups. This section outlines the five key challenges facing Indian startups.

3.1. Building and Scaling an Indian Startup

The challenges faced by Indian startups begin with essentials such as hiring and managing a team, dealing with customers, and developing a

marketing strategy. In particular, many Indian founders have a technical background and lack business knowledge.

For running a startup, a significant amount of working capital is required. Many startups, especially at early stages, are bootstrapped, i.e. self-funded through the founders' own savings, or using capital from friends and family. Some startups have enough paying customers, so that they are or become self-sustaining through the revenue and profits they generate and are able to grow organically. Thus, while not every startup needs external investment, many of them start looking for investors as they plan to scale their business. However, finding the right investor and raising funds is difficult, even if they have received positive responses on their product and have some proven market validation.

3.2. Diversity and the Digital Divide

In general, an information gap exists between those who provide solutions and those who are supposed to use them. In order to build successful products, startups need to bridge this gap and develop an in-depth understanding of the customers and their needs. This is particularly difficult in the Indian context: India is a highly diverse country with a plethora of cultures, languages, ethnicities and religions. Because Indian customers are equally diverse, the startups' understanding of them is often limited to certain regions, which they know well and where they know local people to work with. In that sense, comparative advantages are linked to specific regions. Therefore, building up a pan-Indian startup is more difficult, because they have little understanding of customers in other regions.

In addition, there is a disconnect between the startup founders and the customers, for whom they aim to build products. Most startup

founders are well-educated and come from well-off backgrounds in urban metro cities. However, as nearly 70 percent of the Indian population live in rural areas,[22] the customers of the mass market tend to come from low-income backgrounds in villages. Due to different living environments, startups often have an insufficient understanding of the customers and their needs.

3.3. Taking Products to Market and Low Willingness to Pay

A further challenge for startups is to take their products to the market as Indian markets appear difficult to penetrate. One reason is the competitive landscape: Often, many firms are already present and many more enter the market, including copycats. A second reason is that startups are at a disadvantage compared to large companies. On the one hand, this is due to the fact that big market players are more capable of dealing with bureaucratic regulations. On the other hand, public procurement is seen as weak and government prefers to sign contracts with established companies. However, if startups are promoted by large companies (for instance, through partnering with them in the context of their open innovation initiatives), they may find it easier to capture a market. A third reason is that communication with and retention of customers takes time and effort. Convincing Indian customers is difficult, especially if the startup develops innovative products and caters to new market segments.

Furthermore, it is hard for startups to generate willingness to pay for their products and services. Despite increasing incomes, the Indian customer base continues to be price-sensitive and has little willingness to pay for products and services. Often customers expect discounts, or buy cheaper versions from China. Therefore, startups face the challenge of building affordable solutions, which is sometimes done at the expense of quality. For this reason, many businesses are volume driven,

with marginal returns. For those startups which do not charge customers through means of digital payment, collecting and ensuring timely payment can be another issue.

3.4. Hiring Qualified Employees

For many job-seekers, joining a startup as an employee is not an attractive career option, due to the inherent risk that the startup might fail. Instead, the majority prefer to work for large corporations, which promise more stable jobs. In addition, startups can rarely compete with the reputation and compensation structures which large companies can offer. Many of those who start working for startups, switch to established companies after a few years. Job changes in the opposite direction occur less likely, because many get used to the benefits of a corporate job.

A second reason is that many job applicants are not sufficiently skilled. Startups see a gap between the knowledge taught to students in colleges and the knowledge needed for the jobs, especially in sectors in which technologies change at a fast pace. Because they have little awareness of industry needs, fresh graduates are usually not readily employable from the beginning. As a consequence, when hiring new staff, startups have to invest significant amount of time and cost to train new employees.

A third factor is that a significant number of highly qualified specialists move abroad for jobs. At the same time, and in contrast to many other startup hubs globally, Indian startups are yet to attract international talent. Bureaucracy and visa requirements make it difficult to hire employees from outside India and expatriates are more attracted to places like Singapore, where the living standard is higher.

3.5. Complex Regulatory Environment

The government of India has introduced policies that aim to ease the business environment for startups. However, the present regulatory framework in which startups operate is widely seen as difficult, inefficient and unpredictable. Indeed, the World Bank Ease of Doing Business index ranks India 77th of 190 countries; the country is 137th of 190 countries in the World Bank Starting a Business Ranking index.[23]

Startups in India often feel encumbered by bureaucratic processes, which appear to lack underlying standards. They have insufficient possibilities to find information, and there is little planning security about how long processes can take. In addition, regulations can suddenly change or startups receive random notices. As a result, startups have to find frustrating workarounds, waste valuable time or pivot their business model.

Other challenges concern the legal incorporation and registration as a startup as well as the closing of a business. Despite government's declared intention to hasten the setting up of a business, the process is generally described as lengthy and costly. It requires many approvals, constituting a high entry barrier. After the legal setup is accomplished, formal registration as a startup is a necessary requirement to qualify for tax exemptions and further benefits. There are specified criteria linked to the government's startup definition, but few startups fulfilled them. The criteria were lowered subsequently, but startups still seem to face difficulties obtaining registration certificates. Some startups fail, but closing down a business was described as even more difficult than setting it up.

The tax policy and its enforcement are considered unfriendly for startups. This, on the one hand, applies to the Good and Services Tax

(GST), which was introduced in July 2017. There is still a lack of clarity on how it works and which items are applicable as tax base or not. The startups are required to file their taxes regularly, even if they do not yet generate any revenue. Moreover, if payments from customers are delayed (which is not uncommon), startups run into the danger of a liquidity squeeze. If they fail to file the tax on time, they risk huge penalty payments. On the other hand, much criticism was directed towards the so-called "Angel Tax", which was introduced in 2012 with the aim to thwart money laundering.[24] (After the end of the interview period for this study, the government announced in August 2019 that ventures that are registered with India's Department for Promotion of Industry and Internal Trade, will no longer be subject to the tax.[25])

4. THE STATE OF THE INDIAN STARTUP ECOSYSTEM

Besides the entrepreneurs themselves, the startup ecosystem consists of various stakeholders, including incubators and accelerators, investors, service providers, educational and research institutions, and big companies. This section describes how the Indian startup ecosystem has evolved, and where and what kind of support has become available to startups.

4.1. Evolution of the Indian Startup Ecosystem

The Indian startup ecosystem has evolved considerably over the last two decades. More actors have joined and they provide different forms of support to startups. Thus, the ecosystem has grown significantly and is now in the process of maturing.

Few startups had already come up in the New Economy in the late 1990s, which ended with the burst of the dot-com bubble. At that time broadband penetration was poor, Internet connectivity was low and

support structures were hardly available. In the next decade, the situation changed slowly, and more startups entered the market. Some of them performed well, and some exits happened. One watershed was the major investment received in 2009 by the Bangalore-based e-commerce startup, Flipkart. In subsequent years, the number of startups as well as various incubators, accelerators and other support organisations increased fast. During the period 2013 to 2018, between 7200 and 7700 tech startups were incepted, which equates to an overall base growing at 12-15 percent.[26] The first Indian unicorn was InMobi, an advertising technology startup based in Bangalore.[27] Since then, the number has increased to currently 19 unicorns, which are listed in figure 2.[28] The US$10-billion One97 Communications, which is the parent organisation of the payment system Paytm and e-commerce platform Paytm Mall, is currently the highest valued Indian startup.[29]

Simultaneously, access to external capital increased significantly. Large funds were set up in India and foreign capital came from investors in the US, Singapore, China, Japan and the Middle East. During an early funding boom, much money was invested into startups with just ideas, and these resulted in huge financial losses. Subsequently, after some funds closed and a cleansing of the market took place, approaches to investing became more prudent. In recent years, the situation began to improve again. In addition, government and CSR programs are also impacting the investment scene.

As the first generation of Indian entrepreneurs have made their mistakes and experiences, more knowledge has become available in the ecosystem. Some of these founders eventually became successful and inspired more to follow their entrepreneurial steps. Moreover, a sense of community among the people in the startup ecosystem has emerged over time. Overall, the Indian ecosystem has now reached a certain size and support has increased significantly in all dimensions.

Table 1: Indian Unicorns

	Startup	Sector	Valuation (US$ billion)
2014	InMobi	Mobile & telecommunications	$1
	Snapdeal	E-commerce & direct-to-consumer	$7
	Ola Cabs	Auto & transportation	$6.2
2015	One97 Communications	Fintech	$10
2016	Hike	Mobile & telecommunications	$1.4
	Shopclues	E-commerce & direct-to-consumer	$1.1
2017	BYJU'S	Edtech	$5.75
	ReNew Power	Other	$2
2018	OYO Rooms	Travel	$4.3
	Swiggy	Supply chain, logistics, & delivery	$3.3
	Zomato	Internet software & services	$2.18
	PolicyBazaar	Fintech	$1
	Udaan	Supply chain, logistics, & delivery	$1
	BillDesk	Fintech	$1.8
2019	Delhivery	Supply Chain, logistics, delivery	$1.6
	BigBasket	Supply chain, logistics, delivery	$1
	Dream11	Internet software & services	$1
	Ola Electric Mobility	Auto & transportation	$1
	Rivigo	Supply chain, logistics, delivery	$1

Source: CB Insights (2019)

4.2. Geography of Startup Support

Most support is available in Indian metro cities, with each city having its own history and local peculiarities and therefore unique ecosystem. Bangalore in the state of Karnataka is India's primary hub, which is most advanced in regards to the number of startups as well as support organisations and investors. One in every four of total tech startups in India are based in Bangalore.[30] One reason why Bangalore developed as the startup hub is the location of many engineering colleges and renowned academic institutes. The ready-made talent pool then provided a locational advantage, and several Indian as well as multinational companies and R&D centers in aerospace, biotech and later IT industries opened their offices in Bangalore. Three of the four biggest Indian employers in the IT sector, which include Infosys, IBM India, as well as Wipro, are headquartered in Bangalore.[31] The city is seen as attractive for people from outside due to its welcoming attitude as well as cosmopolitan vibe. In addition, the government of Karnataka has established a dedicated authority, which seeks to design and implement progressive policies to create a conducive environment for startups.

Significant startup activity is also taking place in Mumbai in Maharasthra, as well as the National Capital Region (NCR), particularly in Delhi, Gurgaon and Noida. Of all Indian tech-startups, 21 percent are based in NCR and 14 percent in Mumbai.[32] In a recent report on the geography of startup activity,[33] all three cities are members of a group of so-called "Elite Global Startup Hubs", which further include Austin, Chicago, San Diego, and Seattle in the U.S., Berlin, Paris, and Stockholm in Europe, Shanghai and Singapore in Asia, and Tel Aviv in Israel. This group follows the group of six "Superstar Hubs", which comprise San Francisco Bay Area, New York, Beijing, Los Angeles, Boston and London.

Since Mumbai is the financial capital of India, the city is home to many fintech startups. Startups in the NCR region are active in a broad variety of areas. In both cities, cost of living as well as rents are significantly higher as compared to Bangalore, where affordable office and co-working space is more easily available. In the NCR, culture and social attitudes are considered to be more conservative, which is reflected in a lower social acceptance for entrepreneurial careers. In addition, and in contrast to Bangalore and Mumbai, interview partners in Delhi reported that safety, especially for female employees, is a concern and restricts work place flexibility.

Startup ecosystems are also developing in some further Tier-1 and Tier-2 cities. In the above mentioned report on global startup cities,[34] Chennai, along with Bangalore, Mumbai and Delhi, is considered an established global startup hub, while the cities of Pune, Hyderabad, Ahmedabad, as well as Calcutta are referred to as emerging startup hubs. NASSCOM[35] further mentions Kerala, Jaipur as well as Chandigarh as emerging hubs. Entrepreneurs from these cities receive less visibility and there are fewer support organisations available and less possibilities for founders to interact with and learn from each other. In that sense, these ecosystems are not as mature as above mentioned ones, but there is optimism that positive developments will continue in coming years. In addition, some state governments such as Kerala ("Startup Mission") and Karnataka ("Startup Cell") have taken further initiative by introducing programs to nurture early stage startups. There is little support available in rural areas.

4.3. Core Ecosystem Actors and their Provided Support

As more actors have joined the ecosystem over the recent years, available support to startups has increased in all dimensions. Different support organisations exist and their offering varies, according to their

institutional missions and to what kind of startups they target. This section gives an overview of core actors and what kind of support they provide.

4.3.1. Institutional Missions and Targeted Startups

The focus of this study is on incubators and accelerators, which, along with the global trend, have emerged in increasing numbers. In 2018, there were at least 210 incubators and accelerators in India, which corresponds to an 11-percent increase as compared to 2017.[36] Business incubators and accelerators can be understood as organisations, which support the foundation and growth of new businesses through different kinds of resources and services. Typically, incubators take in startups without an a priori fixed time horizon and fund themselves by taking rent, while accelerators usually accept startups for fixed-term, cohort-based programs, sometimes in exchange for equity.[37] Both business-incubating organisations can be distinguished between publicly and privately sponsored ones. While publicly sponsored incubators often are more interested in job creation and social impact, private-independent incubators emphasise profitability, and private-corporate incubators tend to focus on contributions to their mother corporation's strategic goals.[38]

Publicly sponsored incubators and accelerators in India are associated with and run by academic institutions or industry associations, which consider themselves as non-profit organisations. They receive at least some part of their funding from governmental authorities, as they aim to not only promote the growth of startups, but also consider the creation of employment opportunities and the startups' potential social impact. Further, incubators, who are associated with universities or technology institutes, aim to nurture

entrepreneurial spirit and talent at the campus and to take IP, which has been developed in research projects, to commercialisation. As much tinkering takes place at engineering colleges in particular, these incubators invite teams to basically walk in with ideas. Similarly, incubators and accelerators run by industry associations, target startups at a very early stage and help them with prototyping, developing a proof of concept, validating and launching their products. While university incubators tend to be industry-agnostic, incubators run by industry associations, focus on startups working on upcoming technologies in the industry, which they represent. There are government initiatives that conceptualise policies for creating conducive conditions for innovation across different technology sectors. While they do not incubate startups themselves, they seek to nurture entrepreneurial talent at the institutional level. They do so by, for instance, partnering with public incubators, providing incentives (e.g. reimbursement of patent filing costs), or setting up a seed fund for B2G (business to government) startups, where can apply for conducting pilots with governmental departments.

Privately sponsored incubators and accelerators include corporate and independent ones. Established companies initiate corporate incubators and accelerators as a platform to engage with startups. They either set them up themselves, or partner with third parties, which can be described as acceleration-as-a-service providers and manage the program on their behalf. The key selection criterion is the strategic fit, i.e. supporting a specific startup should have relevance for the established corporation and contribute to realising their strategic objectives.[39] Some select startups, which have potential to become future suppliers or customers, or which help the established firm generate leads or additional income through revenue-sharing models. Other corporate incubators and accelerators can be understood as a

future exploration tool, as they help the established company monitor and understand what is happening in the market and evaluate new technologies. In contrast, independent incubating organisations, which are run and funded by private business people, target a more diverse group of startups. Their focus is mainly on tech startups, but they are otherwise rather sector-agnostic. Some independent incubators have hybrid business models, i.e. they combine their incubation offer with a co-working space, an investment fund, or an open innovation program. There are also support platforms for female entrepreneurs. Their mandate is to help female founders, as they face significant challenges in India´s male-dominated business culture.[40]

Further important actors in the ecosystem are angel capital investors, who are typically high net-worth individuals from traditional business backgrounds, who seek to diversity their portfolio. In addition, some founders and senior managers from the first generation of successful Indian startups have become investors. Some of these individuals use angel networks to scout for promising startups and then manage the relationships with portfolio companies. In addition, many Indian as well as global venture capital funds have become active in the ecosystem in recent years. Angel and venture capital investors nowadays tend to prefer startups, which already have a proof of concept as well as some market validation.

The support organisations and investors do not see themselves as competitors, but rather as interconnected and complementary partners. Regular interaction takes place among the actors, for instance through informal exchange or referrals of startups. Moreover, publicly sponsored or independent incubators often tie up with industry partners, which give startups an opportunity to present their use cases and do possible pilots with corporate partners.

4.3.2. Elements of Startup Support

When startups need handholding, the core support dimensions include the provision of office space and infrastructure, business advice and network access, as well as funding.

Office Space and Infrastructure

One dimension of support is the provision of space to work. This includes offices, meeting rooms as well as recreational areas such as a cafeteria or break room. Often, such work environments also have a function room, which is suitable for hosting events with a larger audience. Basic facilities such as printers, coffee machines, Wi-Fi connection, and front desk service can be used by the startups. In addition, sometimes they are equipped with hardware and software, which startups need to build their products. Moreover, a few support organisations also provide access to lab space, where technical equipment such as 3D printers, IoT devices, lasers, and virtual reality headsets is available.

Publicly sponsored incubators have a strong focus on providing physical space to many early stage startups in exchange for a monthly, subsidised rent. One particular advantage of many university incubators is that they can grant access to lab space and facilities at the campus. In recent years, the government has provided additional funding for tinkering labs. Private independent and corporate incubators and accelerators sometimes do not provide space for startups to work themselves, but rent offices in a co-working space such as the well-known chain WeWork. Moreover, some also offer virtual incubation to startup teams, which are based in remote locations. Typically, investors do not provide office space to their portfolio companies.

Some years ago, a gap in the ecosystem existed as space for people to work was missing. However, as more and more incubating organisations as well as co-working spaces opened over time, a lack of space no longer seems to be a big issue. A study on similar organisations in Africa warns that such quick and wide diffusion does not necessarily imply that they are operating successfully.[41] Indian startups need more than just space to work and many interviewees pointed out that the provision of space is rather secondary, as effective startup support organisations put more emphasis on building a community and getting the right people together. This is in line with research, which found that, beyond the more traditional focus on office space provision, there is increased attention on providing access to capital and specialised services in order to speed up the startups' time-to-market and bring them into a common network.[42] Thus, the provision of further support distinguishes incubating organisations from ordinary co-working spaces. In fact, some self-proclaimed incubators and accelerators were perceived to be simply providing a shared work environment, without significant further support.

Business Support and Mediation

Startups (especially younger teams) may have knowledge gaps or lack connections, required to successfully build their business. Thus, startups can receive internal support from an incubator or accelerator's on-site employees, who serve as a first contact and can help with practical issues and provide some first-level support. They also organise different workshops and seminars; in the case of accelerators typically in the form of a structured program over few months. As startups are co-located and attend courses together, they start interacting, share experiences and give each other valuable feedback. Thus, to facilitate such peer-to-peer learning, incubators and accelerators actively foster an open and collaborative culture. When the internal team lacks the

specialised knowledge or resources required by startups, they can assist through facilitating introductions to experienced entrepreneurs or industry experts in their external network. For instance, they do matchmaking with mentors, who can advise startups in one-to-one sessions, or make connections with possible customers and partners, with whom startups can conduct pilots to test their product. In addition, startup support organisations have a pool of service providers, who can give startups pro-bono advice startups in functional areas such as HR, marketing, accounting and legal matters. Furthermore, incubators and accelerators actively build a community through hosting of events, such as informal networking meetups, talks by technology experts, or exposure visits to conferences or international ecosystems. Sometimes, offline communities are in place to promote further networking.

All types of incubators and accelerators aim to provide business support and connect their startups, but they partly have different foci. University incubators, for instance, have an edge in helping startups with hiring, as they can attract students from the nearby campus as interns. The core competence, which corporate accelerators can offer to startups, is to bridge their gap to go to the market by helping them with their distribution strategy and connecting them to their own customer base for real feedback. Independent-private incubators strongly emphasise the value of a community and connecting their startups to experienced mentors in their network. As many angel investors hold or previously held senior roles in traditional business fields, they could assist startups with their in-depth market knowledge.

Asking for an evaluation of actual business support and mediation provided gave a mixed picture. Many startups consider having good mentors and a supportive environment in which peer-to-peer learning can take place as very helpful. However, some founders said that they did not experience much mentoring and that they would need much

more business support. Some founders did find a supportive environment, in which they benefitted strongly from exchange with peers. Others described that little exchange between startups takes place, with honest conversations and empathy being particularly rare. In fact, more important than the business support is that organisations have a strong network and can make connections to the right people locally and in the market. In regards to university incubators it was pointed out that they are often run by academics, who lack practical business experience and thus, cannot facilitate connections to important people in the market. While angel investors stay rather passive in regards to business advice, they can be of more help in connecting startups to people in the market. Now that some first generation of Indian startups has become successful, it is hoped that they carry on supporting the next generation of entrepreneurs. While the quality of business support as well as the strength of their networks may differ, both factors decide whether a support organisation or investor can act as a real catalyst or not.

Funding and Assistance with Fundraising

Finally, startups need money to finance their operations. While some startups are self-sustaining through their generated revenue, others seek to raise external funding, especially if they plan to scale.

Incubators and accelerators typically provide no or rather small amounts of money. Instead, they focus on making startups investment-ready by teaching them how to pitch and giving them feedback on their pitch decks. In addition, they typically partner with a pool of investors and can make introductions to suitable investors. In particular, accelerator programs typically end with a so-called demo day, which offers a platform to startups pitch in front of a diverse audience, which includes investors and corporate managers. If corporate managers see potential in

startups, there is a possibility for a continued strategic partnership through which both parties can enter into a buyer-vendor relationship or engage in a revenue-sharing model. While the program itself is not a vehicle for investing into startups, corporate incubators and accelerators are often in touch with corporate venturing units, who could possibly put in money at a later stage[43]. Some private independent incubators and accelerators have an attached investment fund or emphasise their strong network, which includes possible investors. One of their advantages is that their mentors get to know the startups well, which helps them to make informed investment decisions. Finally, most significant amounts of capital come from angel and venture capital investors.

Opinions on the actual availability of external funding of startups gave a very mixed picture. Representatives of startup support organisations and angel investor networks, who participated in this study, described a positive development that more capital has become available in recent years. This is in line with findings from a recent report,[44] which provides data on the five-year growth of startup cities worldwide. Accordingly, five Indian cities are in the top ten of cities with the highest growth rates in venture capital deals. Delhi, Bangalore and Mumbai already had the highest numbers of venture deals in the previous period 2010-12, but experienced further steep increases: the number of venture capital deals in Delhi rose by 407 percent from 168 to 851, in Bangalore, the number of venture deals increased by 306 percent from 195 to 792, in Mumbai the number went up by 288 percent from 133 to 516 deals. Overall, Indian startups raised $11 billion in funding in year 2018.[45] Thus, it appears that raising funding has indeed become much easier for startups. However, the interviewed startups reported that a majority of them are bootstrapped and not self-sufficient, but struggle to obtain funds, although they can show a proof of concept and some market validation. The opinion was raised that the numbers of startups who really get funding are very bad.

Table 2: Top Global Cities by Five-Year Growth in Venture Capital

Rank	Geography	Deals (2010-12)	Deals (2015-17)	% Change
1	Bangkok, Thailand	9	65	622%
2	**Ahmedabad**, India	7	49	600%
3	Jakarta, Indonesia	24	161	571%
4	**Delhi**, India	168	851	407%
5	**Bangalore**, India	195	792	306%
6	Ho Chi Minh City, Vietnam	8	32	300%
7	**Mumbai**, India	133	516	288%
8	**Calcutta**, India	8	31	288%
9	Dubai, UAE	23	86	274%
10	Kuala Lumpur, Malaysia	28	103	268%
11	**Pune**, India	26	91	250%
...				
30	**Hyderabad**, India	40	104	160%
...				
40	**Chennai**, India	42	101	140%

Source: Florida, Hathaway (2018)

Naturally, raising funding is a highly competitive process and not every startup is considered promising. However, the huge discrepancy of opinions called for a closer investigation of selection criteria. A few observations became apparent. First, after an initial funding boom some private investors have "burnt money" and gained better understanding on what works and what doesn't. As a consequence, many have taken a

more cautious approach and now fund more mature startups, which already have a MVP (minimum viable product) and some proven market traction. In 2018 as compared to 2017, the seed stage funding dropped by 40 percent.[46] As a consequence, raising funding at earlier stages is not easy for Indian startups. The drought in angel investors, who can provide the first Rs 50 lakh to Rs 1 crore that will enable startups to build a prototype and run some early test with customers is indeed considered the biggest obstacle that Indian startups face.[47] Second, as investors have limited information, they strongly invest in people. Thus, money comes on a trust-basis, which obviously implies that investors fund among known circles and based on similarity, not diversity. Founders, who come business families, graduated from certain prestigious academic institutions and have big corporate names on their CV, are perceived to be more capable. This may partly be true, as they have gone through a filter already. But it is also seen as an "elitist thing", where others with good ideas but from less privileged backgrounds face difficulty to raise funding. In particular, women entrepreneurs struggle with stereotypes and face bias in the investment cycle[48]. Third, selection criteria mainly aim to identify tech companies, which promise to scale fast and cater to markets, which serve millions of customers. Thus, the impression emerged that investors predominantly fund startups, which are likely to exit within few years with multiple times of the initial amount invested. Fewer investors have a more long-term orientation and are willing to invest in R&D-intense startups. Further, although more startups are currently entering consumer markets, the ecosystem was described to still be less favorable to startups who develop hardware or other physical products. This creates the impression that in India, many people put a lot of expectations in a basket called tech. Moreover, perspectives were raised that many investors chase trends and fund startups working on advanced technologies, which – despite few interesting use cases - have low relevance to solving more urgent Indian problems.

5. CONCLUSION

The Indian market offers many opportunities for startups and in turn, startups carry great hopes to promote growth and create employment. Over the last two decades, more startups emerged in India and the associated ecosystem has developed dynamically. Consequently, support has increased in many dimensions: office space and infrastructure, business support in regards to mentoring and networking, as well as the availability of financial capital. There is palpable optimism that the ecosystem will continue to mature. Nevertheless, Indian startups face significant challenges. Overcoming such hurdles will require efforts of all stakeholders, i.e. the ecosystem actors, governmental authorities, as well as the startups themselves. In addition, changes in the broader cultural milieu would be helpful to encourage people taking risks and possibly developing impactful solutions.

Startups do not exist in silos, but are part of the broader economy. Policy reforms improving general economic conditions as well as investments in digital and physical infrastructure (for instance, internet connectivity, roads and public transportation, power and electricity), are expected to also benefit startups. With regards to the regulatory framework, improving the implementation of existing startup policies and removing inefficiencies within the bureaucracy is considered crucial to ease doing business for startups. Reducing necessary paperwork and documentation, improving access to information, establishing more standardised operating procedures and clear criteria (e.g. how to bid for government contracts or get licenses) would help startups. Moreover, it is imperative to channel investments in education to develop a broader talent pool. In particular, ecosystem actors who participated in this study advocated for an integration of entrepreneurship courses in college curricula, which would better prepare students for careers in startups.

While the amount of angel and venture capital invested in Indian startups has increased tremendously in recent years, the ecosystem still lacks resources. In particular, as investors tend to fund rather mature startups, more money is required to help the younger ones develop their prototypes and MVPs. To bridge the gap from ideation to the next step, startups and ecosystem actors hope that governmental authorities can incentivise angel investments by, for instance, abolishing the angel tax or giving other kinds of tax benefits. Moreover, governmental approaches to set up a seed fund and give grants to startups are considered as effective initiatives. In addition, it was pointed out that more startups should be acquired by large, established companies. Moreover, the phenomenon that successful entrepreneurs support promising younger startups, which is common in mature startup ecosystems, needs to further gather pace.

Parallel to the rise in capital, support has also increased in regard to office space and business support dimensions. However, the ecosystem actors are geographically concentrated in metro cities and startups that are not placed in these locations and cannot change bases, may find it more difficult to succeed. Support must be extended to entrepreneurs in smaller tier 2, 3 and 4 cities. Due to given resource constraints, India needs low-cost and high-impact solutions and thus, the focus on scalable tech startups is understandable. However, it should not distract from the fact that valuable solutions could also come from other kinds of entrepreneurial ventures.

Startups rely on thorough market and user research. While they learn some market knowledge from mentors, it will probably not spare them from talking to their users to get a better understanding of their needs. In particular, to overcome the disconnect between startup founders and customers, especially in rural India, they need to do more field research and obtain greater exposure to people on-site. In regards to the difficulty of finding talent, startups may have to widen their hiring net and be

prepared to train first-hires. As most startups are not able to compete with large companies in salary, they depend on attracting talent with other incentives, such as giving them learning opportunities. In addition, fostering a good work culture can be helpful to attract and retain talent. Moreover, eradicating the male-dominated "bro-culture" will also help attract qualified women and foster a more inclusive and innovative environment.

Beyond the described support dimensions, another critical factor is how supportive the general culture is towards entrepreneurship. Startups have received increased attention and media as well as popular culture have reported successful exits and featured stories about "startup heroes". Thus, being a startup founder is nowadays seen as "cool" and the social acceptability of entrepreneurial careers has increased. However, many enterprising people are still being discouraged from pursuing their passions by their families and social environment, and feel pressure to choose a job and lifestyle, which is perceived to offer more stability. Instead, the culture needs to be more encouraging towards people, who take agency and create something on their own. The willingness to take risks should be more appreciated and failure seen with less negative judgement. In addition, overcoming stereotypes is a necessary step to increase diversity, which would help the big ideas of our day get the ecosystem of support they need in order for them to have a chance.[49]

This study collected a plethora of perspectives to the current state of the Indian startup ecosystem. It identified the opportunities they recognise, the challenges they face, and what the imperatives are to strengthen the pillars of support for entrepreneurs. ORF

ANNEX

Methodology

Research Design and Data Collection

This study seeks to give a comprehensive overview on the current situation of the Indian startup ecosystem. It provides an in-depth look at the following questions:

- What are the core growth drivers and motivations of Indian founders to set up and run a startup? (Section 3)

- What are the core challenges that Indian startups struggle with? (Section 4)

- How has the startup ecosystem evolved? Where and what kind of support is available to startups? (Section 5)

To gather insights on these questions, a qualitative research design was chosen and interviews with experts conducted. To qualify as an expert, interviewees must have had significant professional experience in the Indian startup ecosystem. For the data collection, interviews were conducted in the period between February and April 2019. The researcher travelled to Bangalore, Mumbai and the National Capital Region, where most interviews took place on the premises of the startup support organisations. The face-to-face setting allowed for a first-hand impression of the startup spaces as well as the working atmosphere. Overall, 39 interview partners shared their perspectives.

The interviews were semi-structured, i.e. based on a list of guiding questions respondents were asked to share their opinions. Thus, the interviews were guided conversations, which gave interviewees the opportunity to answer openly and also bring up new aspects, which the researcher had not considered before. After each interview, the guiding

questions were reviewed and, if necessary, adjusted. The data collection was ended, when theoretical saturation[50] was reached and no new major insights emerged. After the interviews, memos were aggregated and insights were analysed to gain a comprehensive overview of the developments in the Indian startup ecosystem.

In addition to the interviews, a literature review was conducted. The aim was to identify relevant literature as well as data, which would provide deeper background information on aspects raised by the interview partners. In addition, such further information was helpful to strengthen the robustness of findings.

Description of the Sample

In order to strengthen the robustness of findings, we sought to capture a wide set of opinions. Thus, a diverse group of experts was selected and interviewed. The majority of interview partners were either startup founders or senior managers of startup support organisations. The support organisations themselves are diverse and the sample included academic, corporate, independent incubators and accelerators, some hybrid organisations as well as one platform specifically dedicated to supporting female entrepreneurs. The sample further included a business school professor who teaches on innovation, as well as representatives from industry associations, VC funds, angel investor networks, as well as a state government initiative for startup promotion.

In regards to gender, 14 of the 39 respondents (35.9 percent) were women. In addition, one non-Indian founder, who operates his startup from India, also participated as respondent in this study. Almost half of the interviewees, 13 out of 27, were conducted in Bangalore, 9 in Mumbai and 5 in the National Capital Region (NCR). Figure 1 provides a comprehensive overview of the types of organisations and experts interviewed for the study.

The startups, whose founders participated in this study, were active in a variety of sectors, as can be seen in table 1. While the initial focus of the study was on technology-oriented startups, opportunities to interview a few non-tech ventures emerged during the course of the study, which provided valuable insights.

Table 3: Overview of Interview Partners and Represented Organisations

Inter-view no.	Organisation			Interview partner	
	Type	Location	Sector/ Expertise	Position	Gender
1	Private incubator/ accelerator with hybrid business model	NCR	Various sectors	Partner	Male
				Manager operations	Female
2	Startup	NCR	Mobile payments	Product manager	Female
3	Young business	NCR	Health, nutrition	Founder	Male
4	Young business	NCR	Consultancy services	Partner	Male
5	Angel investor network	Mumbai	Various sectors	Manager investor relations	Male
6	Corporate incubator/ accelerator	Mumbai	Telecom, media and entertainment, fintech, retail, etc.	CEO	Male
7	Academic incubator/ accelerator	Mumbai	Different sectors	Marketing consultant	Male
				Senior manager	Male

8	Angel investor network	Mumbai	Various sectors	Assistant vice president	Male
9	Startup	Mumbai	Education	Manager product	Female
10	Startup	Mumbai	Digital hospital management	Founder	Female
11	Academic incubator	Mumbai	Cleantech, fintech IoT, ICT, medtech, etc.	Outreach manager	Female
				Manager business ecosystem	Female
12	Industry association	Mumbai	Various sectors	Regional manager	Male
13	Young business	Mumbai	Women hygiene	Founder	Female
14	Platform for women entrepreneurs	Bangalore	Various sectors	CEO	Female
15	Various organisations	Bangalore	IT	Partner and advisor to VC funds, startup mentor	Male
16	State government initiative	Bangalore	IT, biotech	Head	Male
17	Private incubator/accelerator	Bangalore	Various sectors	President	Male
18	Corporate incubator/ accelerator	Bangalore	Cloud computing, IoT, big data, AI, etc.	Leader	Male
				Senior manager	Female
19	Business school	Bangalore	Innovation	Professor	Male

20	Startup	Bangalore	Fintech platform	Legal advisor	Male
				Founder	Male
21	Startup	Bangalore	Consumer hardware	Founder	Male
22	Startup	Bangalore	Networking app	Founder	Female
23	Incubator/accelerator run by industry association, and incubated startups	Bangalore	Mobile apps	Associate vice president	Female
				Assistant vice president	Female
			Mobility	Founder	Male
			Food specialty app	Founder	Male
			Crowdsourcing	Founder	Male
			Mobile app	Founder	Male
24	Startup	Bangalore	Education	Vice president	Female
				Founder	Male
25	Startup	Bangalore	Mobile games	Founder	Male
26	Startup	Bangalore	HR tech platform	Founder	Female
27	Private incubator/accelerator with hybrid business model	NCR	Different sectors	Partner	Male
				Analyst	Male

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