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# KNOWLEDGE MANAGEMENT IN START-UPS TO SCALE UP THROUGH INNOVATIONS

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**Abstract** -Knowledge Management (KM) is considered as a strategic tool for performance and competitive advantage in organisations during the past two decades. But it is actually important right from the birth of a business idea, especially in start-up firms where the inconsistency on social, environmental, economical, technological and personal attributes often refrain them from scaling up in the later stages and often leads to dead failure. Funding incentives and support are documented areas of challenge for start-up incubators in India. Further, requisite knowledge has to be imparted to dynamic young force to instil confidence, change the existing mind-set towards innovation and creativity. KM processes such as creation, transfer, retention and applications of knowledge are expected to be crucial for start-ups as they constantly strive for innovation, creativity, new product/service development and new opportunities. Hence based on the limited researches existing in the area of KM in start-ups, this article has framed a KM Process model for start-up to scale up, which can be further applied and tested. The framework actually highlights on the key areas of different KM process that are often ignored by the entrepreneurs, which can be focussed overcoming the KM barriers to foster innovation. Some of the start-ups that rapidly grew in India include Instamojo, Nykaa.com, Swiggy, Mobikwik, Paytm.

*Keywords: Knowledge Management (KM), Start-up, Innovation, Entrepreneurs, organisations*

## I. INTRODUCTION

Knowledge Management (KM) is the process of managing an entity's knowledge holistically in such a way that it results in improved performance and competitive advantage [13]. In organisations it is considerably inevitable to manage knowledge strategically in all the phases to sustain in a highly competitive world[28].KM is significant not only at the organisational levels but also in different functional

areas such as finance, marketing, human resource management and operations; irrespective of the industry they belong because the entire business process revolve around the creation, transfer, retention and utilisation of knowledge resources[28][15].KM had been researched during the past two decades in different facets of organisations, though majority of them focused on KM processes in organisations and their impact on organisational performance.

All successful firms had once gone through a struggle in the initial phases of evolution and

such historic experience has much to do with the growth of a firm[35]. Hence it is important to learn on small organisations in evolutionary terms and therefore a study on start-up turn out to be important. Start-up can be defined

as an early stage of any business venture that struggle for existence and it is an evolutionary stage until it turn out to be a firm [34][6]. A Start-up is a company initiated by individual founders/entrepreneurs to search for a repeatable and scalable business model (Cambridge Advance Learner's Dictionary & Thesaurus). They come with novel ideas and if successfully implemented, marketed and managed would grow to successful firms contributing to the society. In the research domain, although the start-up theories are rare, existing literatures focus on areas such as entrepreneurship, organisation and management [34][20]. The lifecycle of start-ups involve three stages namely Bootstrap stage, Seed stage and Creation Stage [34]. Although KM is important in all these stages, it could rather be more important in the seed stage as the success of failure of start-up is determined at this stage.

The existing literatures has also identified that KM is critical for start-up as it has a significant impact on financial performance , environmental performance, human performance , market performance , organisational performance , relational performance and technical performance [39] [38] [34]. KM processes such as creation, transfer, retention and applications of knowledge are expected to be crucial for start-ups as they constantly strive for innovation, creativity, new product/service development and new opportunities[2]. Out of the various KM process, the most essential and challenging part is the knowledge sharing process. This is rather inevitable in start-up, especially in the seed stage where team work and support mechanisms are greatly expected. But majority of the start-ups irrespective of the industry hesitate to share knowledge at this point as it is considered as a potential threat. But it is obvious that the start-ups who leverage the possible opportunities to overcome these threats would rather be more successful. Chart 1 explains the growth of Start-up funding in India since 2013, and this indicates the relevance of this Study in Indian scenario.

## II. KNOWLEDGE MANAGEMENT PROCESSES IN START-UPS

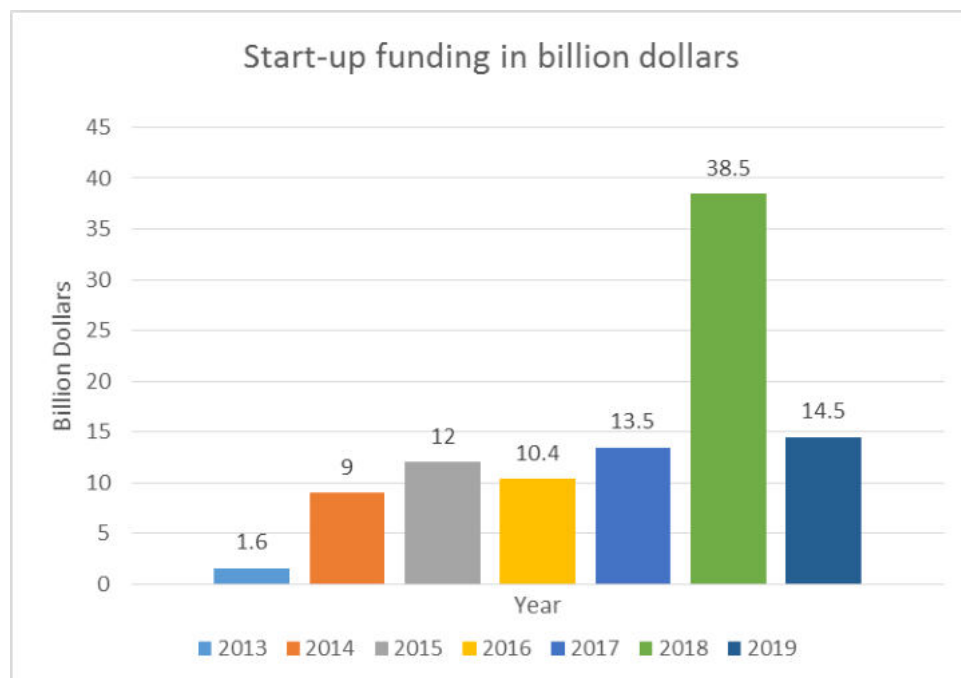
The start-up life cycle starts with the bootstrap stage involve entrepreneurial efforts of using creative ways to use the resources to position the venture focusing on feasibility of the business idea, cash management, team management and customer's interests. Personal knowledge of the entrepreneur supporting individual efforts with family and friends along with external knowledge regarding angel investors and other possible investment opportunities. After this stage, he gears up to the seed stage which is characterised by team work, valuation, average investment, accelerators and incubators. This stage is critical, stressful, uncertain and highly critical as the success or failure of start-up begins here. The third stage called creation stage reveals the start-up as a firm with its products/services in the market and employees working for them. The firm can attempt for corporate finance, high investment and venture capital at this stage. The KM processes

such as Knowledge Creation (KC), Knowledge Transfer (KT), Knowledge Retention (KR) and Knowledge Utilisation (KU) are significant in all these life cycle phases from entrepreneurial, organisational and managerial viewpoints.

KM practices can also help a newly created start-up to scale and meet market demand, and the inability of a start-up to scale is a common reason for its [2]

This stage of a start-up's evolution is explained in the Moore-Bygrave model, where the model associates six sociological attributes (networks, teams, parents, family, role models, and advisors), five personal attributes (entrepreneur, leader, manager, commitment, and vision), and eleven environmental attributes (customers, competition, resources, incubator, suppliers, investors, bankers, lawyers, resources, government policy, and economy[2]) For a start-up to succeed in its evolutionary stages it has to consider all these attributes focusing simultaneously on generating capital. This is often a highly challenging task as often one or other aspect get higher priority forcing to ignore certain other attributes resulting in inability to scale up. The following sections explain various aspects of start-ups that can significantly contribute to knowledge creation, knowledge sharing, knowledge storage and eventually how the knowledge is utilised or applied ideally to innovate and scale up.

### Chart 1



Source: Economic Survey Reports : [www.finacialexpress.com](http://www.finacialexpress.com), [www.economicstimes.com](http://www.economicstimes.com)

### Knowledge Creation

There exists a huge research gap in the area of knowledge creation for start-ups as it is important for small firms and start-ups to constantly unlearn, update knowledge from external sources and prioritise the most important and less important knowledge[16][17]. A pre entry knowledge creation is very important in start-ups and this is purely dependent on the entrepreneur. The *pre-entry knowledge* about customers' needs and characteristics, about the technology and about potential suppliers and competitors differentially affect the technological and market entrepreneurial choice of the surveyed firms[17]. Entrepreneur in the incubator shows maturity of experience and earlier start-up activities (i.e, failures or successful sales of prior businesses), which may in turn show that the internalized knowledge comes from prior life experiences rather than only from the current business[2]. At the start-up stage *networking and development of communities of practices* internally and externally can greatly enhance knowledge creation [4][25][29]. This is important in creating knowledge on products, market trends, competitions, technology infrastructure, and recent developments in the business area. As the start-up proceed with its evolutionary strategies it can often come across various pivots. "A pivot is the strategic change of a business concept, product or the different elements of a business model" [1]. *Managing pivots* can result in creation of new knowledge that can even change the face of the start-up completely. Knowledge is to be acquired on different types of pivots (such as customer need pivot, marketing pivot, technology pivots) and different factors that lead to failures and trigger pivots, for entrepreneurial teams they contribute to make better decisions under chaotic and unpredictable environment [1]. Start-ups should adopt a validated learning process and used the acquired knowledge to set right directions. [33]. Another factor that contributes to knowledge creation on start-up is *team heterogeneity*. Although including individuals with similar characteristics in the team makes it more likely they share a common language and knowledge base, such team members may offer less resource variety to the nascent entrepreneur than would be desirable to successfully engage in the firm creation process[20][27]. According to the World Economic Forum Collaboration between Technology Start-ups and large corporate is key for Fostering Innovation in Europe which benefit both sides, helping markets and start-ups to develop their products to enter and create new markets and start-ups to develop their products. According to Bill Gates, "We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Do not let yourself be pulled into inaction".

### **Knowledge Sharing**

Knowledge sharing among the partners of a start-up has a significant role in positively fostering the entrepreneurial activities of the firm especially in the launching and expansion phases[6]. It is found that such an interaction can help in

various dimensions of knowledge such as technical know-how, product idea, leveraging personal contacts for networking, physical resources and customer orders [10]. The *proximity of the partners* therefore has a significant influence on the effective knowledge sharing. Another important factor that facilitates knowledge sharing in start-ups is the *relationship and trust among the team* and ignoring this would create high risk in relationship and also profitability of the firm [5][10]. This can be between the partners, the owner and his employees and among the employees. Knowledge sharing occurs through cross functionality, overlapping roles, and is facilitated by close physical proximity in open workspaces [11]. But unfortunately start-ups and small firms are rather sceptical regarding knowledge sharing, regardless of whether it addresses the external or the internal business environment and knowledge sharing seems to be viewed more as a threat than an advantage for the individuals concerned [16]. An *intellectual property protection* through a confidentiality agreement can help to solve this problem to certain extent. But an inappropriate use of intellectual property protection in start-up could represent a potential barrier hindering knowledge sharing processes, and therefore innovations and scalable growth [10]. KM can help the start-up share knowledge within and outside the organization, reduce the dependency on the technical founders and architects, facilitate cross-functional team communication, and safeguard against the loss of intellectual capital when employees leave the organization [32]. Start-up accelerators are another aspect that can enhance the knowledge sharing. *Start-ups acceleration programs* supported by companies began with the intention of combining the innovative potential of start-ups with existing resources in corporations. It is known that this combination of knowledge, resources and expertise enables joint innovations that benefit them both. However, for this kind of acceleration to occur the sharing of knowledge and the joint creation of new knowledge is of great importance and it results in innovation and benefits both the business and individuals involved [9]. *Knowledge clusters and networks* involving different companies and incubators improves companies' competitiveness as sharing information improves the absorption of abilities and knowledge [12][28].

### **Knowledge Storage**

Some knowledge is easier to transfer to others if it is written down as *formal document* [8][14]. It is good to have knowledge from employees written down - to make it easier to replace the employees if they leave for another company, or another position internally [14]. The deliverables created for knowledge management activities can include documents, slides, videos, lab guides, and so on and they result from research and gathering relevant information, creating content, reviewing the content with start-up stakeholders and sharing the final deliverables [32]. Moreover if it is a technology based *start-up technological literacy* is important for the team and hence it needs to be stored and shared [32]. But generally

irrespective of business area, technological literacy is important in terms of social media access, cloud computing , crowd funding etc, as many initiatives are now possibly done online effectively with very little resources. It is actually a process of converting the tacit knowledge to explicit knowledge. In start-ups the knowledge mostly remains tacit with the entrepreneurs as the small firms and start-ups *lack a formal platforms for discussions* [17]. *Business plans* are often taken for granted as highly useful tools that should be frequently updated and used but unfortunately entrepreneurs who wrote business plans never updated or rarely referred to their plans after writing them[21]

Start-up companies need to be up-to-date in knowledge in order to remain competitive. Often they face the problem of high staff turnover during pivots and moreover the KM process remain quite informal thereby increasing the vulnerability to knowledge leakage[3][16]. Knowledge retention therefore remains as a challenge. A formal knowledge repository would be ideal for start-up to map the knowledge processes. As the technology has become more sophisticated with cloud storage, it is easy to implement them at lower cost. Besides the entrepreneurs of start-ups being always busy on investments, they often ignore the micro management especially the employees. It is important to share and receive ideas from employees and generate a sense of belongingness.

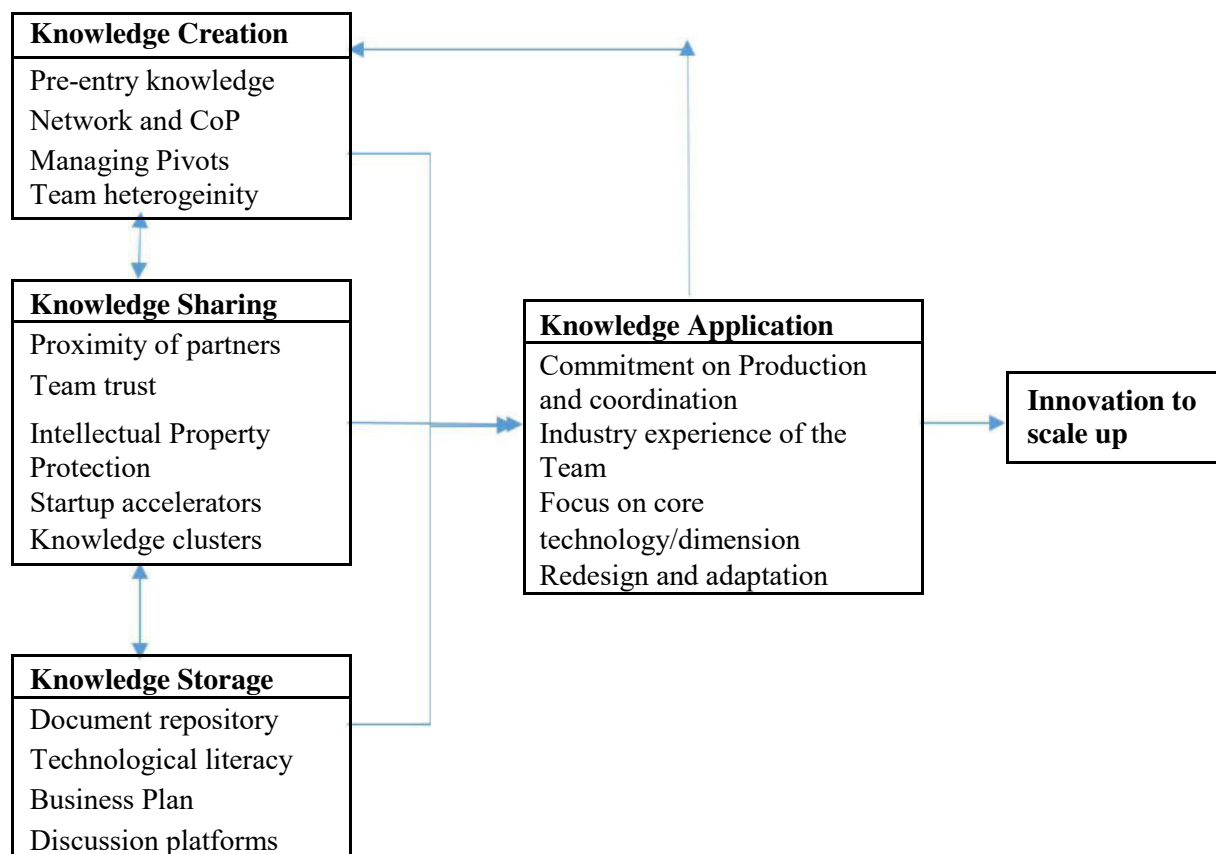
### **Knowledge Application**

The knowledge created, shared, stored and retained need to effectively utilised and applied at right circumstances to ensure constant innovation. New knowledge, whether developed internally or acquired from outside the firm, needs to be applied effectively leading to new products, higher productivity, or more innovative activities [18]. To be pro-active and adjust effectively during pivots the *industry experience of the start-up team* is very important and their experience enable to take timely decisions [19]. The entrepreneur's *commitment on production and coordination*, materials, contacts with suppliers and clients is very important at application level and the company credibility is also guided by the product development, going through *re-design, adaptation* to the market and certification phases, in addition to publications of scientific articles to improve product publicity [12]. *Concentrating on core technology* rather than diversifying can mature start-up faster[40]. Start-up should maintain development by the implementation of new projects that complement or redefine their initial experience [26][12]. Focusing on core technology is more applicable to technology start-ups whereas other start-ups can focus on their core dimension such marketing, product attributes or value added services.

Knowledge acquisition, storing, retrieving and sharing processes should be seen as crucial and core by knowledge intensive companies, notably by small companies [31][37]. The appropriate use or application of knowledge can lead to innovation and according to Pollard (2003)[30] the expectations are mostly of organisational gains in terms of growth and innovation in organisations; productivity and efficiency (reflected in absolute cost savings); customer relationships; employee learning, satisfaction and retention; and management decision-making. These factors are those that definitely contribute to start-up to scale up and hence the importance of KM process in start-up is explicit[3]. Figure 1 shows the conceptual framework for KM processes in start-ups to foster innovation.

As India improved its digital connectivity, market access barriers have been brought down for start-ups. The number of internet users were pegged at 483 million in 2018 and is projected to reach 666.4 million in 2015. In addition, the government’s initiative “Digital Saksharata Abhiyan” was started to promote digital literacy and enable people become more knowledgeable about the digital world.

**Figure 1: KM Process Model for Start-up**



Source: Authors Conceptualization



The creation, sharing and storage of knowledge are often interdependent and it is often difficult to discriminate one from another. Each of them contribute to application, use, and reuse of knowledge which further generates new knowledge from experience. Compared to large companies small companies are more inclined to socialization and internalization processes of SECI Model[28] as they frequently network for more information internally and externally[2]. This can enhance knowledge sharing and creation to greater extent which is an advantage. However, in practice, are still very reluctant in taking KM principles in their strategic thinking and daily routines [24][36]. There are several KM barriers that need to be managed effectively by start-ups to scale up in future.

### III. KM BARRIERS IN START-UP

The fundamental theories of KM explains about the KM processes and KM enablers. The KM process model has already been illustrated. KM enablers in organisations generally refers to Technology infrastructure, Organisational Culture , People Competency and Organisational Networks that enable the KM processes to effectively result in organisational performance. But Unlike large or medium organisations start-up and small companies does not have a structured framework of enablers. The technology, structure, people and culture often remains informal and unstructured. Instead an effective management of KM barriers can act as an enabler of knowledge processes in start-up and small companies as they often confront with huge barriers compared to large organisations. Some major KM barriers in start-up can be listed as follows:

1. *Lack of prioritization*: The time poor nature of entrepreneurs often force them to prioritise on short term investments rather than long term investments. They think on how to make decisions to run the company and its financial performance, where KM strategies get very less priority( Baptista Nunes et al., 2006)
2. *Low level of innovation capability*: This is a crucial situation which decides the success or failure of start-up. A sudden change can happen with regard to various aspect such as customer needs, technology up-gradation, market trends or product design which has to be strategically managed as a team through constant research and updates on the existing business model( Bajwa et al., 2017)
3. *Lack of pro-active KM* : This has to be done by leveraging the knowledge of its cofounders, product architects, and other employees apart from being vigilant on the constant changes in the market , technology and customer needs (Ranade, 2017)
4. *Inability to manage pivots*: This is a crucial situation which decides the success or failure of start-up. A sudden change can happen with regard to various aspect such as customer needs, technology up-gradation, market trends or product design which has to be strategically managed as a team through constant research and updates on the existing business model( Bajwa et al., 2017)

These barriers on KM often remain resident compared to many other entrepreneurial process and it is high time for start-up to rejuvenate their KM strategies considering these barriers to foster innovation and remain competitive.

#### **IV. SUGGESTIONS FOR BUILDING START-UPS AS CATALYST**

According to President of NASSCOM, India is becoming a Start-up hub. Opportunity for the growth is enormous, which we had never seen in our life time. The key challenge is how fast a company wants to transform. Following are some of the suggestions for building start-ups as catalyst:

1. The Government can contemplate and implement single window clearances for speeding up the proposals of start-ups.
2. Awareness programmes can be conducted with the guidance of experienced knowledgeable entrepreneurs regarding start-ups in rural areas to infuse innovative mind amongst youngsters.
3. Design a clear cut procedure to get easy availability of loans to start-ups across the country.
4. Infrastructure can be strengthened for easy access to markets.

#### **v. CONCLUSION**

Knowledge management has been adopted as a strategic process in organisations to strive competition, irrespective of the domain of the business. Often it is considered as a systematic process that can be executed by medium or large organisations as it involved a structural approach connecting people, technology and process. But it is actually important right from the birth of a business idea, especially in the start-up where the inconsistency on social, environmental, economical, technological and personal attributes often refrain them from scaling up in the latter stages and often leads to dead failure. In the midst of the chaos and pivots that arise in the various stages of a start-up, the entrepreneurs often neglect KM and its importance. Based on the existing literatures available on KM in start-ups this article has designed a process model that can be used , applied and tested in start-ups , so that it can pave a new dimension in fostering innovation and scaling up for future. The existing barriers of KM

are often ignored or unanticipated by many entrepreneurs due to their time-poor nature. The model actually highlight certain aspects of start-up that has to be prioritised but the

entrepreneurs in the all the stages of its life cycle, with regards to creation , sharing , storage and application of knowledge so that it can overcome certain unexpected pitfalls and scale up.

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