CHAPTER 4

VALUE CREATION AND APPROPRIATION AMONG THE
CONSTITUENTS OF BUSINESS ECOSYSTEMS

4.1 INTRODUCTION

The purpose of any business enterprise from a single firm’s point of view is to create value. Firms have recognized the need for building networks that leverage resources not owned by a firm in order to create sustainable competitive advantage. Value appropriation is important for firm’s growth and survival. Though value creation and value appropriation processes are interlinked, oftentimes the two are not synchronized as the intervening players have seemingly divergent objectives. Before defining framework for value creation and appropriation one needs to understand changing business models, industry characteristics, and firm’s relationships with other network members across value network.

Businesses in the past, especially in traditional industries were self-reliant and inward looking with growth either through forward or backward integration. Firms believed in investing and creating their own assets. Size, volumes and scales of geographic distribution were the parameters that determined the strength of an organization in the market place. Today businesses are increasingly challenged by one or more of the following situations: saturation in the markets, breakthroughs in technology that shake up the status quo, cheaper and better alternatives and demand for value addition from the members of the value chain. This has necessitated revisiting the existing business models. The internet and developments in the field of information and communication technologies (ICTs) have made it possible to develop and operate systems that are transparent and seamless.

Firms have redefined boundaries by making alliances with those players outside of their industry, taking advantage of “open”/public assets like the internet.
Businesses are also evolving to become more creative, flexible and generating new knowledge and expertise in creating and delivering new products and services. Heterogeneous industries are increasingly converging to create new products and delivering new service... Such aggregation of new business models and blurring of boundaries across industries have led to emergence of new revenue models.

Traditional businesses also have compulsions of creating networks for value creation and sustain competition. For example, a power engineering company which is in the business of manufacturing power equipment like pressure boilers and turbine can compete only if it creates a seamless supply chain where suppliers and ancillary units along with auxiliary equipment manufacturers form a value network. These firms also need to work on changing business models where they may have to involve partners from bidding stage to do concurrent engineering. Trust and ability to forge alliance relationships is what can reduce lead time and cost towards achieving competitiveness.

While competition was the key element, collaboration, co-operation and co-evolution were discussed as important factors for building long term strategies for businesses. The term co-petition introduced by Brandenburger and Nalebuff (1996) is based on the concept of applying a variant of game theory to strategic issues [223]. According to them, a successful business strategy involves a ‘value net’ approach that comprises not only of competitors but also customers, suppliers and complementary firms of its business. To quote them, “Co-opetition recognizes that business relationships have more than one aspect. As a result, it can occasionally sound paradoxical. But this is what makes co-opetition such a powerful mindset. It’s optimistic, without being naive. It encourages bold action, while helping you to escape pitfalls. It encourages firms to adopt a benevolent attitude towards other players, while at the same time keeping the firm tough-minded and logical. By showing the way to new opportunities, co-opetition stimulates creativity”.
Porter in his cluster theory has articulated how horizontally and vertically firms are able cooperate among competing firms and also with network partners like suppliers and distributors in a geographical cluster for achieving economic growth. Ancarani and Venkatesh (2003) also reveal similar phenomena in convergent industries [224]. According to them, the emergence of new forms of hybrid competition that include competition and cooperation drive the need for right strategic alliances in convergent industries. The strategic ability to setup and run value networks with partners like competing firms, supporting firms, suppliers and even customers is key to success in convergent industries. The focus of strategic management must now be network of firms and not resource based view or any other structural view.

They further state that managers face two key strategic challenges when competing in convergent industries: 1. maintaining focus on customer relationships; and 2. Identifying partners for strategic alliances and managing the alliance, often collaborating with competitors in traditional industries. Though the above inference especially towards customer relationships could be true for market driven industries, it is important to note there are other sets of traditional industries which may also have evolved with broader social perspectives.

Business ecosystems derive their meaning and essence from ecosystems existing in nature. An ecosystem is a place that has numerous living things in perfect balance. Business ecosystems gained acceptance and popularity after it was first proposed by James F. Moore (1993)[225]. The concept of ecosystem replaces competition with co-evolution, wherein stakeholders, potential competitors and governmental institutions work together to create a better future for all the members of the ecosystem.

Moore (1996; 2006) suggests that the core of a business ecosystem consists of core products, complementary products, and leading firms, complementing firms, competitors, customers and suppliers interacting with each other[226, 227]. Brandenburger and Nalebuff (1996) have proposed a similar thought in terms of ‘value net’. Business ecosystems have been described as “meta-
markets”, “virtual clusters” and as “C-Commerce” [228]. Other terms that are used to describe the overlapping meanings of business ecosystems are co-opetition, value net and value constellation.

A good way to conduct business is to look at markets, competition, and offer a product or service to compete for market share.

4.2 BUSINESS ECOSYSTEM CREATION AND SUSTENANCE

In the present business environment, firms are endeavoring to discover ways to survive, compete and succeed in their businesses. The value chain concept (Porter, 1980; Porter, 1985)[229, 230] that has been used for over three decades to understand and analyze industries is less applicable now thanks to the loosening of the linkages along the value chain and products and services becoming highly dematerialized (Normann and Ramirez, 1994; Parolini, 1999; Hakansson and Snehota, 1989; Campbell and Wilson, 1996)[231-234]. This phenomenon has been noted in a variety of sectors such as banking, insurance, telecommunications, new entertainment, music, advertising and certain areas of the public sector (Li and Whalley, 2002; Evans and Wurster, 2000)[235, 236].

Blurred physical dimensions of the value chain have paved the way for co-operative behaviour and inter-firm associations have become critical in strategy formulation (Madhavan et al., 1998)[237]. Adoption of a network perspective is the alternative to value chain in the current model of business, particularly for those organizations where both the product and supply and demand chain is digitized (Peppard and Rylander, 2006)[238].

In the network approach, while the firms in the network are independent, the focus is not on the company or the industry but on the value-creating system itself, within which different economic actors – supplier’s partners, allies, and customers - work together to co-create value. Success of a network depends on proper definition of role, responsibility, risk and reward among participants which is being well articulated and executed by the focal firm.
However, business ecosystem is an emerging concept for strategic
decision making. Formation of cooperatives as in the case of AMUL and Campco are illustrations of ecosystem creation. The strong interlinkage of the players in an ecosystem compels the survival of each firm to be coupled with that of the overall business ecosystem. Cooperative movement in India has for long contributed to the growth of business and agriculture. Besides, the cooperative approach has also seen success in natural resource management. It is observed in agricultural resources that include agricultural product, milk and milk products, fisheries, and horticultural products that cooperative system plays a crucial role in the production and marketing which in turn support a large number of families engaged in production of these. A success in marketing of these products percolates to enhanced production and hence income of the families engaged in the production process.

A successful cooperative system (especially in these products) require a winning combination of financing, marketing strategy and most importantly an institutional structure that enables large participation of the producers on a sustainable basis. There are many examples of successful cooperative systems in the Indian context including the well-known AMUL movement of Gujarat in milk production. Yet another popular cooperative movement in India is the Central Areca nut and Cocoa Marketing and Processing Co-operative Limited (CAMPCO).

The peculiarity of Indian ecosystems is that a number of participants in the ecosystem are from the unorganized sector and not usually governed by regulations. However these members get to engage with formal, organized segments such as corporations and associations thereby creating unique ecosystems. They get mentored by formal corporations.

To summarize, there are number of factors which support value network, supply chain network and business ecosystem that a focal firm while creating value to customers anchors the network along with partners with clear objectives and governance mechanisms. Else, systems may have natural limitations and realignment could happen. However, we feel that there could be considerations in traditional industries where a network could be aligned more because of non-market
factors and other tacit supports which neutralize the economic disadvantage in the system.

Literature on network theory is replete with comprehensive reviews of networks and their governance. Network models illustrate a wide array of relationships ranging from the dyadic and simple relationship between the buyer and seller to complex networks. Strategic alliances involving relationship between two firms to derive mutual benefit in one or more business functions gained importance. An alliance may be seen as the ‘joining of forces and resources, for a specified or indefinite period, to achieve a common objective’. Star Alliance among many airline operators is a classic example which has been operating successfully for decades. Strategic alliance is the name given to a form of corporate structure in which a number of organizations link together, usually by taking small stakes in each other and as a result of having a close business relationship, often as suppliers to each other.

The network structure is a way to defuse the traditionally adversarial relationship between buyers and suppliers. Chrysler adopted the keiretsu model resulting in the company’s relationship with its suppliers, reducing in number from 2,500 in 1989 to 1,140 in 1996, and improving of relationships between the firms to such an extent, that Dyer claimed “the two sides now strive together to find ways to lower the costs of making cars and to share the savings” (Dyer, 1995)[239].

Here, one may relate networks to supply chain. Success of each firm in the value chain depended not only on its own performance but also on the strength of the linkage and the interaction between all the firms in the chain. Competition then shifted from “inter-firm” to “inter - value networks”. The result was that strategic alliances were not confined to just two firms but went on to include more firms.

While individual firms compete and bargain for more space, the emphasis is on the overall well-being of the ecosystem. Prahalad and Hamel (1990) advocated the exploitation of core competencies; later models emphasized value
creation through ‘share of the customer’ approach by putting together several competencies to address the needs of the customer [240].

According to Mariotti (2002) a value network is “an interactive combination of information, machines and people”[241]. Value networks are concentrated in creating value at each node. Value network is not seen as bound to certain regions - it can even be global. The concept of industry is included in the discussion of value network, but companies inside a value network can be parts of different industries. Value network and business ecosystem are not based on geography. It is a co-operative structure. The members’ tasks are strictly defined and generally not expected to compete with other members. The whole idea of value network arises from a notion that a single firm cannot efficiently produce the whole product by itself and needs complementary capabilities of other firms to make the product.

Generally speaking, there are two foundational components in business ecosystem creation. Firstly, it is necessary to create value within the ecosystem in order to attract and retain members in addition to providing growth potential for the ecosystem. If these foundational criteria are not met, the ecosystem will wither. Secondly, there needs to be a way to share the value within the ecosystem. (Iansiti and Levien, 2004a)[242].

Value creation for the ecosystem is essentially innovation within the ecosystem. In order to create a value proposition that is big enough to create a new business ecosystem; innovation needs to be disruptive or has to be radical. Additionally, as Iansiti and Levien point out, there needs to be a way to share the value as well. Furthermore, in order to distribute value in the ecosystem, it is a requirement to understand how the innovation is diffused and how network externalities are present.
4.2.1 Creating New Business Ecosystems

In the increasingly interconnected business networks, a new business ecosystem can fundamentally be created in two ways. In the first case, a strong asset or vision already exists (or is researched), which is leveraged by proposing a value creation and value sharing methods for the ecosystem. Once vision and opportunity have been identified, the business ecosystem structure and strategy can be developed (which requires an understanding of the possible species and roles). Then plans are applied to a totally new market or industry to get the ecosystem into operation.

The second way is through analysis of existing business ecosystem; ecosystem evolution and opportunities. A vision of the future from the perspective of an ecosystem is evolved to ensure growth opportunities and ground for healthy operation and value creation for all constituents of the business ecosystem as a whole.

To sum up, the first case creates a totally new operating leverage proposal (as in a new industry or market as well), creating new value for the business ecosystem, attracting new members and drawing existing members from other ecosystems. In the second case, the business ecosystem process is based on a new or recreated operating leverage proposal that is going to be adapted to an existing business environment where the value is both created as well as drawn from the activities.

4.2.1.1 Value creation

There are various ways to create economic value, which can be shared within the business ecosystem, customers and other members. Economic value is created through innovation. Iansiti and Levien state that value creation is the “operating leverage” in ecosystems, which are a series of assets that can be scaled up and shared by a broad network of business partners. Operating leverage, essentially broadly defined as innovation, can be obtained by the development of physical, intellectual, and financial assets.
Christensen, et. al., (2004) introduced the disruptive innovation theory. In the illustration below, the solid lines illustrate company improvement trajectories in products and services that are the expected incremental innovations implemented to products [243]. Disruptive innovations occur in two ways and are shown as a low-end disruption and a new market disruption in the figure. Introduction of a new value proposition which is actually below the market expectation in performance, this the first disruption opportunity, the low-end disruption, opens competition when existing products in the market that are “too-good” (thus the market products tend to be overpriced relative to the value the consumers perceive). Now, the opportunity is in reshaping the market by introducing a relative straightforward product.

![Christensen model](Image)


**Figure 4.1 Christiansen model**

The second disruption opportunities in the market are when the consumers tend to be inconvenienced in using a product (because of centralized settings, deep expertise or great wealth). The new disruptive products tend to compete against non consumption and are essentially based on a new value proposal.
to create a new market. Thus, the new value proposal is usually based on “ease of use”.

As far as disruptive innovations are concerned, it is possible to anticipate that these are excellent proposals to craft a new business ecosystem. Firstly, there is the high impact intervention in the market, which itself creates a big opportunity. Secondly, low-end disruptive innovations that reshapes the market allowing the formation of new species and roles. Thirdly, new market disruptions create vast possibilities for new business ecosystems. In addition to attracting new members and members from other ecosystems, the ecosystem per se can be assembled to a large extent (structure, species, roles, interaction).

Another opportunity to create value is to build on a performance leap. This value proposal is highlighted by Shapiro and Varian (1999) as a brute force strategy in attracting customers: A product, which is so much better than what consumers currently use that they are willing to bear the pain of switching [244]. According to Grove (2003) and Lucier, et. al., (1997) the performance improvement needs to be at the level of a 10-fold increase in order to force the players and business models to adapt to the change [245, 246].

Business ecosystem value creation is done by interpolating backwards from successful strategies, since they may have congruencies to successful value creation for new business ecosystems. Parnell (2003) discusses critical challenges in strategy making and notes the generally quoted Chinese warrior Sun Tzu’s strategy: All war is based on deception and the best strategies are ones competitors do not understand. However, since a business ecosystem is based on collaboration between multiple parties, it’s unlikely that hidden and secret patterns in business ecosystem activities would not be seen by competing ecosystems and thus would not fly [247]. On the contrary, if the business ecosystem is crafted in reverse order, that is to say, the main assets are being kept secret while the opportunity area and frameworks are built for the ecosystem it might succeed but with higher risks.
Unlikely occasions are acknowledged in its extreme in the theory referred to *Black Swan theory* too. In short, the theory proclaims that since the world is far more complex than we think, we systematically ignore occasions, build and predict according to widely held assumptions and beliefs. Hence at some point there can be a high impact event “which simply is not possible”. Thousands of observations of white swans did not point to its possibility of existence of a black swan.

A high impact “black swan” could be a critical for creating a new business ecosystem because of its ability to significantly impact value creation for an ecosystem. For instance, this could be applied to widely held assumptions like Moore’s law in doubling the capacity.

Since Moore’s law is expected by multiple parties, investments can be intentionally made to reach this goal. What is changing the area further are “green and sustainability” economics that is increasingly confronting new value proposals that did not exist when resources were supposedly unlimited and the environment not so contaminated. The notification of new values and co-living of environment and economics could anticipate new economic principles as argued by Bayon (2008)[248]. Thus, the statements like “Technology Changes. Economic Laws do not” (Shapiro and Varian, 1999), might not be valid anymore and derived assumptions from changing economic principles could lead to new business ecosystems [249].

### 4.2.1.2 Establishing ecosystems

Moore (1996) approaches the creation of an ecosystem from the analogy of humans pioneering a new land. Possibly, the terrain itself has to be fitted to the needs and carefully examined from afar before moves are made [250]. In a surprising number of cases, the unpredictable creativity of individual customers in a new ecosystem can play a profound role and should be experimented with. The developers of business ecosystems have a significant role, they do not want depend on change alone, but resort to considerable economic experimentation. Thus, from
these viewpoints the aim for business ecosystem strategists is to predictably manipulate the assembly rules of ecosystems.

Moore proposes a directed learning cycle to anticipate what is involved and will transpire in an emerging new business ecosystem. The directed learning cycle is an accelerated way to experiment with the creation of economic value consisting of: new ideas, action and experimentation, realizing value for customers and investors, and finally, reflecting what has been created. Thus, it is an accelerated way to understand possibilities in creating value within the ecosystem through mutual, self-reinforcing sets of relationships in order to realize possible assembly rules of the ecosystem.

Business relationships are emphasized by Vuori (2005) as well. She concludes in her research paper about intellectual assets in business ecosystems that a key to sustaining a business ecosystem is to invest significantly in business relationships [251]. This supports Moore’s (1996) proposal of experimenting with the self-reinforcing sets of relationships in the business ecosystem establishment phase.

According to Iansiti and Levien (2004a) and their proposed business ecosystem structure; a keystone can create a new business ecosystem, for instance, by virtue of powerful platforms, processes and assets shared within the ecosystem[252]. Keystones systemizes value creation in a large network by creating “operating leverage”, which are a series of assets that can be scaled and shared by a broad network of business partners.

Efficient operating leverage creation enables a keystone to generate enough value to be shared within the ecosystem in order to maintain health of the ecosystem as a whole. Concrete way of establishing a new business ecosystem is to start with a set of strategic options. A research paper by Gawer and Cusumano (2002) suggests a set of strategic options from a business and technology perspective to succeed in becoming a new platform leader [253].
The business actions to be considered are: an essential problem for many industry players, creating and preserving complementors’ incentives to contribute and innovate, protecting main sources of revenue and profit and maintaining high switching costs to competing platforms. Accordingly, the technology actions to be considered are: solving an essential “system” problem, facilitating external companies’ provision of add-ons, keeping intellectual property closed on the innards of your technology, maintaining strong interdependencies between platform and complements.

Establishing a business ecosystem is indeed specifying strategic options and putting these into action. Moreover, strategy implementation and especially refinement continues for the whole lifespan of the business ecosystem. It is possible to divide the strategic options into a set of core strategic options, strategic options for the promise of the ecosystem and strategic options for the management of the ecosystem through the lifespan.

The set of core strategic options are defined as the basis of the ecosystem vision and core value creation leverage. According to Iansiti and Levien (2004a), the strategy hinges on understanding the foundation of an architecture (how boundaries are drawn between technologies, products, and organizations), integration (how organizations collaborate across these boundaries) and market management (how organizations complete transactions across boundaries in the complex market dynamics). Iansiti and Levien state that these three areas can be used [254].

It is possible to contemplate on the core strategic options further especially since strategic choices are not black and white, to elaborate the choices as a set of selections and dependencies where appropriate levels are chosen. The set of selections and dependencies vary on the basis of the defined vision and intent of the ecosystem. A set of strategic options can be for instance: number of preferred species, specifying their roles, co-evolution of other ecosystems, allowable level of member diversity, a level of opportunity exploration versus leveraging clear assets, a level of preferred ecosystem growth rate and openness versus closed in the ecosystem and towards other ecosystems. Additional options can be a level of tight
cooperation between members, other governance structures, a level of sharing value versus capturing value for members in the ecosystem, and level of basing the operating leverage to own assets or external asset.

4.2.1.3 Value sharing

Ecosystem health will suffer, unless some of the created value is shared equitably in the ecosystem. Keystones usually couple value creation with value sharing, but value sharing is not simply a matter of deciding whether to share value or not, or how much value should be shared, it is a significant operating challenge. It is a question of sharing value through a massive network of business partners and the cost of sharing value with each individual business partner must be very low and preferably decrease with the size of the network.

In order to enable value sharing in the ecosystem there must be ways to share problems throughout the network, sustain value creation and balance value creation and sharing. Value sharing ways and methods vary depending on the ecosystem, however, as keystones focus on improving the overall health of the ecosystem (performance, robustness, niche creation), efficient value sharing ways generally consist of robust platforms, easy-to-use APIs, intellectual property licensing, shared operations, enabling software tools, and the like. (Iansiti and Levien, 2004a)[255].

Business ecosystem strategy is divided into three sets: core strategic choices, strategic choices implying the promise of the ecosystem, and strategic choices in management of the ecosystem. Value sharing in an ecosystem is fundamentally a promise of the ecosystem to the members of the ecosystem and customers. The promise of the ecosystem is built on the following theories: openness versus closed by Shapiro and Varian (1999), network externalities and innovation diffusion [256].

The first theory, openness versus closed, is fundamental in networked markets in the information economy. In this trade-off choice, the “open” approach
offers higher compatibility over multiple products, faster take-off of the product (ease of use by multiple members), lighter lock-in, availability of specifications, open APIs and the like. In contrast, closed choices offer compatibility within the same product family, are based on proprietary interfaces and standards, can be hard to take-off (requires market power, investments, tipping towards other solutions and high value proposal over other solutions).

Nevertheless, closed-based solutions are more easily managed due to more centralized governance and can provide fast-time-to-market solutions. The selections between openness and closed impacts shared value between industry and a company. However, totally proprietary solutions tend to be used by fewer parties and totally open solutions minimize the value for a company. Thus, intermediate approaches are frequently used.

The value compound of total value, extracted value and industry value is opened up with separate assets. For each of the assets, an appropriate openness versus closed strategy is chosen according to the desired lock-in, industry collaboration, compatibility between other systems, depending on the intention of the asset. Most commonly, the asset is related to a technology specification, API, development tool, and interfaces in hardware or software. However, if the asset is considered as any asset creating value to the ecosystem, it is actually possible to contemplate the strategic choices of openness versus closed in many perspectives.

Thus, there is a certain operating flexibility for member(s) in the ecosystem to operate and create differentiation with the asset through the open or closed interface in question. These interfaces can be categorized into three divisions: member type interfaces, technical interfaces, and interfaces in a business case level. In this value sharing definition phase, a set of strategic options for the promise of the ecosystem is chosen. This means formulating a strategy framework with the three divisions and providing operating dynamics for the ecosystem, which can be later used in managing the ecosystem.
The member type division openness is discussed by Eisenmann, et. al., (2008)[257]. According to them, a platform is open when no restrictions are placed on participation of its development, commercialization or use. Or alternatively, any requirements to conform to technical standards or paying licensing fees are applied uniformly to all potential platform users in a non-discriminatory and reasonable way. The paper highlights openness at multiple levels depending on whether participation is restricted to the demand side user, supply side user, platform provider or at a platform sponsor level. It must be emphasized that decisions to open or close platforms are crucial and entail tradeoffs between adoption and appropriability (ability to capture profits generated by an innovation (Teece, 1986)[258].

Opening can spur adoption by harnessing network effects, reducing concerns about lock-in and stimulating production of differentiated goods meeting the needs of users in different user segments. On the other hand, the reduced lock-in also lowers switching costs, thus increasing competition among platform providers. These distinctions give multiple opportunities in managing the platform and thus ecosystem with horizontal and vertical strategies.

In addition to contemplating openness, strategic options for different member type levels, separate assets and openness implications on different members should be reviewed. This is to say, dissecting assets and the impact on technical division and business case division. In the technical division, it is defined whether certain core technologies, methods or intellectual property should be kept proprietary, secret or open and available in the platform promise. Similarly options on the scope for common ways of sharing information, subject to exclusivity, co-operating in research, joint-venture, whether certain general guidelines, suggestions, practices or values are to be pursued or not.

The second theory, network externalities theory, is much more dependent upon openness versus closed strategic choices. As Shapiro and Varian and Iansiti and Levien point out, network externalities are fundamentally present in business networks and their importance. Furthermore, the significance of network
externalities lever effect was emphasized especially in the information economy, both demand and supply sides exhibit network externalities making business dynamics virile. In this ecosystem promise phase, the most significant areas of creating network externalities lever should be outlined.

For instance, the network externalities lever can be in an area of a) end-users, who create content shareable across network, b) developers who provide leading innovation to parties, c) innovative supply chain/distribution mechanism providing superior economics of scale or d) premium platform offering with versatile ways to combine and connect assets for further leveraging (local network effects). Thus, once the lever areas are found, they should be adopted and invested in. In other words, if a potential area is discerned it can be devoted to lead the cutting edge solution with strategic investments for instance by investing in tools, partnering, information sharing etc. These strategic investments should be both made to boost the network externalities lever area as well as facilitate the innovation diffusion in concern.

The third theory, of innovation diffusion, is where the main elements and factors influencing diffusion were discussed. First of all, innovation diffusion is affected by the first two theories: openness versus closed, and network externalities and vice versa. However, it might be the more straightforward to proceed in this order rather than have all the choices open and iterate between the choices. Thus, once the network externalities lever areas have been identified, innovation diffusion can be facilitated in various ways in an ecosystem. Moreover, it is possible to make strategic decisions in the innovation diffusion area. Firstly, a strategic decision whether there is a certain adopter group in the selected network lever area (e.g. innovators, early adopters, opinion leaders, change agents, certain stakeholders or members in the ecosystem) to be targeted with the innovation and its diffusion facilitation. Secondly, what communication channels should be used in the diffusion? Thirdly, what is an appropriate level of investment in facilitating the diffusion, and fourthly, whether there is a certain time target in the diffusion?
The diffusion facilitation focuses on innovation promotion in the innovation-decision process. Thus, the five steps, 1) knowledge, 2) persuasion, 3) decision, 4) implementation, and 5) conformation are facilitated in their respective order through selected communication channels. With this in mind, the efficient value sharing ways proposed by Iansiti and Levien were robust platforms, easy-to-use APIs intellectual property licensing, shared operations, enabling software tools, and the like. By summing up the innovation-decision process promotion and efficient value sharing ways the thesis proposes that in this ecosystem formation phase, the value should be shared by funneling and convoying information to the relevant stakeholders and members fast. This is to say, the diffusion is facilitated according to the desired directions in the business ecosystem structure and can be slowed down in unwanted areas if necessary.

In more concrete terms, the value can be packaged with tools, licensing and APIs to be shared and used by members in another part of the ecosystem. In addition, when the information reaches certain parts of the ecosystem faster, it itself facilitates the diffusion by reducing uncertainty towards innovation. The persuasion step in the innovation-decision process play an important role in diffusion facilitation as well. Its adoption attributes (relative advantage, compatibility, complexity, observability) should be embraced with effort. This facilitation requires deeper analysis of innovation and its suitability to members’ intentions and plans. Some of the adoption attributes can’t be facilitated much anymore, because the previous choices, for instance, openness versus closed - exclude some options for relative advantage, compatibility, and complexity.

However, much can be done to facilitate diffusion related to adoption attributes including: awareness, how-to, principles of the innovation, attitude towards innovation, information asymmetries, culture where the innovation is to be diffused, formal and informal networking, individual dissonance (conflicting messages after decision), discontinuance (promote current innovation if new innovations in the same area are emerging), and using appropriate communication channels in order to target mass audience, certain groups or individuals.
4.2.2 Analyzing Ecosystems

Ecosystem analysis is done with competitive intelligence (CI) theories. Myburgh (2004) proposes in her paper a framework for CI process consisting of the steps: asking questions, looking at the companies and industry and competitors, identifying sources, defining techniques for information gathering, evaluating and synthesizing and analyzing the information, dissemination and communication of the information and outcomes for decisionmaking [259]. Furthermore, it is proposed that different analytical methods are categorized on basis of Craig Fleischer’s and Babette Bensoussan’s FAROUT criteria, which means that the models are separated on the basis of: Future orientation, Accuracy, Resource efficiency, Objectivity, Usefulness and Timeliness. Applying this formula enables the selection of the appropriate analytical technique for the problem that must be solved and information collected. With this categorization, it is possible to conduct an analysis framework to solve questions and provide valuable information.

With respect to business ecosystems, the competitive intelligence methods describe the state of the ecosystem, compare with other ecosystems, show progress, highlight problems, successes, opportunities, competitive advantage, and provide data for monitoring the ecosystem health factors juxtapose alternatives, reduce uncertainties by showing facts, help to avoid blind spots, introduce alternative scenarios for the future in choices and the like. All in all, the CI methods and analyses provide various decision, strategy and insight support with over 100 existing analytical tools. However, what is important is to specify accurately: what are the questions to be solved, metrics to be measured and what the preferred outcome elements from the used methods are.

4.2.3 Ecosystem Parameters

In order to understand how the ecosystem is working and to follow its evolution, a set of indicative quantifiable parameters are required. In this thesis, the three sets of parameters are defined: measures, metrics, and influencing factors. The measures are based on Iansiti and Levien (2004a) effective health aspects of the
ecosystem: robustness, productivity, and niche creation [260]. The metrics are defined according to the results of the ecosystem analysis framework. This is to say, the critical data outcome is changed to measurable units. Furthermore, influencing factors are essential areas that have a major impact on the specific ecosystem operation, such as the political situation and regulation, which can be used, for instance, in risk analyses with certain probabilities.

Measures of the ecosystem parameters are:

- **Productivity** describes how innovations and raw materials are converted into products, lowered costs and functions. Also, describes where investments are most efficiently used. There are three productivity-related units of measurements: factor productivity (commonly ROIC = returns on invested capital), change in productivity over time (ROIC changes as a function of time) and delivery of innovations (e.g. time between the appearance of a technology and its distribution).

- **Robustness** is the ability to survive disruptions and unforeseen changes. A robust ecosystem provides its members a buffer against external shocks and provides some degree of predictability. Used units of measures are: survival rates (survival against recession, number of start-ups going out of business), persistence of ecosystem structure (contained; gradual changes in structure), predictability (core of the ecosystem stays unaffected after experienced shocks), limited obsolescence (e.g. capacity and installed base in use after experienced shocks) and continuity of use experience and use cases (gradual evolvement of consumer experience and their use cases, stable APIs etc.).

- **Niche creation** is the ecosystem’s ability to create new, valuable functions and foster diversity that creates value. Units of measurements are growth in firm variety (the number of new firms...
created within the ecosystem community in a certain period of time),
and growth in product and technical variety (for instance, the number
of new product options, technological building blocks, products,
businesses being created within a certain time period).

- **Metrics** of the ecosystem: parameters that vary on the basis of an
  ecosystem and defined according to the outcome of the ecosystem
  analysis framework. However, appropriate metrics are guided by the
  choice from the following categories and units of measures:

- **Member related** in terms of financials (access to capital, cost
  structures), roles (changes in operations, behavior patterns), business
  models (disruptive business logics, pricing), organization (balanced
  scorecard, personnel changes, types of organization, sizes),
  satisfaction (ecosystem evolvement, opportunities), input and output
  of products and services (utilization rates, value creation), history
  (past successes and failures in decisions and actions).

- **Structure related** in terms of species (number, changes), in channels
  (specific communications, operations in the value chain), platforms
  (APIs, tools, compatibility, standards, training, ways of use), business
  relations (methods, ways to operate, ways to share, common
  practices).

- **Competitiveness** versus other ecosystems in products or services
  (performance, quality, market shares, satisfaction, returns,
  scalability), in innovations (number of lift-up products and new
  products), in technology (number of critical assets, intellectual
  property), in personnel (expertise, availability), in manufacturing
  (capacity, processes, machinery, quality), in brands (key members’
  brand value).
• *Activity* in terms of interaction (transactions, business networking, contacts, different activity participation), turnover of members (joining/leaving members, customer number).

• *Insight* in terms of opportunities (areas of shaping, opportunities, operating leverage creation, and predictability) and risks (changes in the operating environment, level of competition, competitive disruptions and value proposals) evolution (state of the ecosystem, members’ switching costs, maturity of technologies and markets).

In addition, the thesis proposes influencing factors as measurable parameters for ecosystem analysis. The following factors are suggested but selection has to be w. r. t to their applicability to the ecosystem concerned.

Influencing factors for the ecosystem are:

• Political (political stability, acute crises, monetary policy, fiscal policy, economic situation).

• Regional (availability of material and labour, physical distances, ideologies, norms and values).

• Regulatory environment (changes in legislation posing opportunities or threats).

• Domains – the ecosystem can be separated to different domains, which Iansiti and Levien describe as groups of organizations engaged in similar activities. Thus, domains can refer to any specified separable area, whether this is related to technology, members, and methods or the like. Here, a specific domain as an influencing factor can be selected for its additional importance to the ecosystem per se. This can be, for instance, a part of the ecosystem horizontal or vertical integration in value distribution.
Later, in the case study part of the thesis, user experience domains are used, which are predefined end user value bundles as roughly expressed.

- Transforming areas – certain companies, industries, part of the ecosystems can be in a middle of transformation, which should be carefully monitored and measured differently in comparison to the rest of the ecosystem.

The above parameters concretize the most valuable information associated with a viable ecosystem. When carefully chosen, the parameters not only support decision making and strategy, but can be used as a dashboard in business ecosystem management. Building an ecosystem dashboard is proposed by Iansiti (2005) as well [261]. To sum up, it is recommended that an ecosystem dashboard that has different levels of parameterized information is built up from the initial analyses and updated during the ecosystem evolution.

4.2.4 Recreating Existing Business Ecosystems

Business ecosystems can be fundamentally created two ways, by creating a totally new business ecosystem (likely to be applied to a new industry or market too) and recreating an existing business ecosystem, which is to be applied to an existing business ecosystem environment.

One can step back to understand why the ecosystem is in this situation that it either anticipates re-creation or encourages a new value proposal for recreation. A very likely case is that the ecosystem promise, its leveraged value creation proposal, has reached a mature state, thus the growth is slowing down and naturally needs investment and renewal. In short, accumulated S-curves for products in the market the ecosystem is operating in are reaching a mature state. Other reasons can be changes in the economic environment / regulatory or customer preferences (consumption behavior), which necessitate a renewal.
Although these might not be the only reasons, there can be disruptions inside or outside the ecosystem forcing adoption and renewal, such as strong value proposals (technology, experience, and other assets), ecosystem instability (due to external or internal disruptions) or the like. Additionally, the ecosystem can become far too inflexible. Furthermore, the ecosystem can be too differentiated (aka fragmented), thus slowing down new niche creation or too unified, which according to Iansiti and Levien (2004a) poses risks for disruptions. All in all, there can be various reasons why the business ecosystem is to be recreated or why there exists opportunities for new business activities.

In recreation, the existing business ecosystem is analyzed and value for the ecosystem is both created and drawn from existing activities. Members are attracted from other ecosystems, new species are born, some species vanish and roles change. Even the business ecosystem structure can alter notably; however, the whole ecosystem as such does not perish but can, however, wither substantially.

The business ecosystem recreation starts with analyses of the existing ecosystem and its operating environment. In short, competitive intelligence methods delineate the environment, competitive landscape, reflect the landscape to the ecosystem’s current state, and provide alternative scenarios for changes and future. The process output has information, which was classified in five categories: key ecosystem parameters, key competitive assets, current roles and strategies, future insight, and tools and methods. In this early phase of the ecosystem recreation, this information is used in five phases to: 1) find a new value proposal, 2) adapt to the environment, 3) adapt to the existing ecosystem 4) adapt towards competing ecosystems and 5) adapt to future insight. The first phase corresponds to value creation (in comparison to phases in creating new business ecosystems). The second phase belong to establishing ecosystems (core strategic options) and third, fourth and fifth phases are comparable to value sharing (ecosystem promise).
4.2.4.1 Finding a new value proposal

With respect to the first phase of ecosystem recreation, *finding a new value proposal*, there is no single right way to realize a new value proposal. This is the case in the creation of a completely new business ecosystem as well. If the value proposal is totally different, the ecosystem formation can follow the ecosystem creation methods. In the best case, the new value proposal combines both old value factors by improving them and creates new value factors. This way it is possible to reach as many of the existing end-users and new end-users as well. The old value factors are likely the most valuable existing assets in the ecosystem subjected to an active competition and development. These solutions have been used for a long time and new competitive assets have been built on top of them. Moreover, as the assets are exhibiting fierce competition, the solutions and markets start to become mature and growth and profits are decreasing. Because of the maturity, many members in the current and competitive ecosystems are more open to alternative solutions and thus, new value factors.

The new value factors can be based on available solutions, emerging technologies or other innovations to be pursued. However, these can be totally new factors, which create an uncontested market called Blue Ocean, as Kim and Mauborgne (2005) state it[262]. The totally new factors make it possible to enter to an unconventional market area, which is untainted by competition. The competition is irrelevant, because the “rules of the game” are waiting to be set and value is increasingly created rather than fought over. Primarily, the new value factors are sought to explore new market space for products, but this thesis proposes similar process for seeking new value proposals for the ecosystem.

According to Kim and Mauborgne, new value factors can be found from six different fields: across alternative industries (not only direct substitutes, but alternative solutions to problems), across strategic groups (strategies of groups outside competitive groups within own industry), across chain of buyers (gain new insight from previously overlooked buyers), across complementary products and offerings (unleash complementary products’ and services’ value), in functional and
emotional appeal to buyers (markets tend to saturate with either one, challengers often find a new space), and across time perspective (find insight in trends observable today).

4.2.4.2 Adaptation to the environment

The second phase, adaptation to the environment, deals with the core strategic options in the business ecosystem recreation. At this phase, core strategic options are formulated, evaluated and selected. Information from the CI analyses (especially influencing factors) is of great help, though some information is commonly available. The core strategic options describe how the decisions between options affect future growth and ecosystems’ living opportunities.

These options are made in regional, regulatory, political, ecosystems’ governance model perspectives. Additionally, options are contemplated with respect to dynamics, possible co-evolution between other ecosystems, whether ecosystem should pursue species variety, emphasize certain domain or build/tear down boundaries between technologies.

4.2.4.3 Ecosystem promise adaptation

The previous two phases constitute the value proposal and core strategic options for ecosystem establishment that are used as an input to the next three phases: adaptation to the existing ecosystem, adaptation towards competing ecosystem and adaptation to the future insights. These three phases are the promise of the ecosystem. In order to create a new ecosystem promise and adapt it, the existing promise should be known and analyzed. The CI analyses are essential in this process - the CI process methods reverse engineer patterns of actions by filtering and selecting information to describe strategies, operations and routines.

Now, the analyzed elements of key ecosystem parameters, key competitive assets, current roles and strategies, and future insight are reflected on the new value proposal and core selections. The first outcome element key ecosystem parameters is primarily used in the ecosystem management and has
valuable information here as well. But the fifth outcome element is not taken into account here (tools and methods not applicable).

However, in reflection and comparison, questions such as the following are posed: which of the key competitive assets can be used in the new value proposal, which are to be changed, substituted or totally removed? Are the species, roles and structures appropriate for the new value proposal? What can the parameters expose from existing ecosystems strengths and weaknesses? How should the current communication channels, operations and methods be adapted to address the new value proposal? How open should the ecosystem be towards different members? What kind of products, services, platforms, and innovation is embraced? How to ensure great customer access for ecosystem members? How best to leverage network effects in the ecosystem? How the value sharing is currently arranged and how it should be changed?

Competitive ecosystem adaptation is approached with question elaboration too: how does the previous value proposal and expected new value proposal compare to competitive ecosystems? What extent is appropriate for cooperation? What assets and elements are to be kept proprietary or open?

4.2.4.4 Adaptation to future insights

Future insights adaptation contemplates linkages between existing, new and possible future promise. In order to attract more members to the ecosystem, there can be linkages and hooks to the previous ecosystems in addition to an attractive new value proposal. There are for instance, compatibilities between the ecosystem’s products, platforms, and services. Furthermore, there can be linkages in a business-case level, for example, with contracts, methods, common tools, and the like. The future insights adaptation elaborates on the current states of the ecosystem regarding switching costs and evolution. High and low switching costs affect dynamics and adoption, thus in some places those are preferred and some places not. Switching costs are involved with respect to the evolution of the ecosystem as well when new products, innovation, and other member activity is experienced. This can
open up new market spaces and opportunities for the future. If taken into consideration early enough, the ecosystem value promise can approach a new big opportunity market.

It is the alternative to new ecosystem creation, which adapts existing business ecosystems and environment. The recreation uses CI analysis information as an input for the creation of a new value proposal and formulation of strategic options. This CI analyzed information as well as the new information based on the strategic options have the most impact to the existing ecosystem, environment and competitive landscape, and are used in ecosystem management.

4.2.5 Managing Business Ecosystem

In order to have the ecosystem evolving and growing in a direction that is favorable to its members, it needs to be actively managed. Firstly, the ecosystem management principles are discussed at a general level. Secondly, the ecosystem evolution stages are described, which affects the management. Thirdly, the ecosystem descriptive data is discussed giving insight on the active management decisions. Fourthly, the ecosystem management is discussed at a more practical level and concrete examples on how to manage the ecosystem are given.

4.2.5.1 Business ecosystem management principles

It is essential to understand that ecosystem management emphasizes more an external nature of operational and innovative capabilities instead of an internal nature. Iansiti and Levien (2004a) highlight this with a notation that the ecosystem strategic management is increasingly becoming an art of managing assets that keystones do not own. However, they add that keystones pursue development of own capabilities, enhance competitiveness and defend against external threats with the management as well. A key assumption according to Iansiti and Levien is that the keystones do not pursue strategies for altruistic reasons neither taking an advantage of them. The primary aim for a keystone is to engage in continuous
improvement of the health of an ecosystem. This is a necessity for its own effectiveness and sustainable performance as well [263].

The health of an ecosystem and its related measures (productivity, robustness and niche creation) introduced by Iansiti and Levien assess the health and dynamics of a business ecosystem and provide convenience for describing the ecosystem health at a general level. In addition, the measures can be extended to a domain level, thus assessing the health of a certain group in an ecosystem.

Ecosystem’s health is promoted by increasing ecosystem’s productivity, robustness, and niche creation capabilities. Productivity is enhanced by removing species, limiting the number of species (reducing disproportion), simplifying the complex task of connecting network participants to each other (information hubs, foundations, standards), and improving the product creation of third parties in many ways (e.g. asset sharing, tools). Robustness is strengthened by investing in and integrating new innovations, and providing reliable reference points as well as interfaces for the members in the ecosystem.

Additionally, robustness is improved by increasing diversity, adaptability, and predictability, which are a remedy against shocks and disruptions. As for niche creation, investment in infrastructure and offering new innovative technologies to third party organizations to pursue growth in a variety of products, firms, and technology is normal. It is important to note that diversity per se does not map directly to a positive health measure, but the capability to increase meaningful diversity through the creation of new valuable functions for niche players. The valuable functions can be appearing in a form of new products, new APIs for developers and new businesses exposing new technology, which productize and deliver the new innovations.

4.2.5.2 Stages of business ecosystem

Moore (1996) separate business ecosystem development into four stages: pioneering, expansion, authority and renewal (or death). With respect to the stages,
different ecosystem leadership, co-operative and competitive challenges are encountered [264]. Moore point out that in the pioneering stage, the greatest leadership challenge is to create new working value chains with partners based on efficiency, new opportunities, and new paradigms. This means being better than others at defining and implementing an offering others will desire. Moreover, the leaders must be protective of their own ideas and learn everything that is possible from others.

The expansion stage is about achieving market coverage while also blocking alternative ecosystems. During this stage, the new offer is brought to a large market with supplier and partner co-operation. This is to increase supply and to achieve maximum market coverage and critical mass. The possible alternative implementations of similar ideas are defeated by the domination of the key market segments and by working with the key suppliers and important channels as Moore suggests. In this type of challenges, the innovation diffusion and openness versus closed theories are prominent.

A central challenge in the third stage according to Moore is to maintain authority and uniqueness in the maturing ecosystem. In this authority stage, it is important to maintain co-operation, contribution and encourage communitywide innovation and co-evolution when alternative ecosystems are created and ecosystem faces internal pressures. The new alternative ecosystems likely have similarities and new well-defined paradigms and technologies. Barriers to entry with a competitive ecosystem become barriers to retaliation. For instance, massive investments, proliferation of operation processes and developed expertise may create significant challenges in shaping when they become obsolescent. The internal pressures may come in a form of fighting over the direction of the ecosystem by members and partners as well as tussling over the portions and profits among members.

Moore suggests that these challenges can be addressed by providing a compelling vision for the future, which encourages supplies and customers continuously improve the ecosystem. Additionally, the maintenance of a strong
bargaining power including key customers and suppliers is among the suggested solutions in this third stage as well.

Finally, in the renewal stage, the overall challenge is to win the struggle against obsolescence, which already showed indications in the previous stage. All the business ecosystems depend on a certain range of conditions in their environment and on their superior ability to exploit those conditions in comparison to other ecosystems. Even the sturdiest and most dominant ecosystems will eventually be attacked and be, perhaps, replaced by a new ecosystem. It is important to note though that existing business ecosystems can contain billions of dollars of assets, serves millions of customers and employs hundreds of thousands of people.

It is thus, an ultimate challenge to leverage these assets, work with the innovators to bring new ideas to the existing ecosystem. Simultaneously, high switching costs should be maintained for the customers, and similarly, high barriers to entry, to prevent innovators from building alternative ecosystems. It is worth to evaluate an investment in a new and alternative ecosystem – the same money and creativity might be better invested that way in comparison to reformation, if the ecosystems are based on dramatically different approaches.

In order to shape the evolution of the ecosystem, the different phases of require continuous monitoring and analysis. The information gathered from the analysis and understanding the status of the ecosystem facilitate in managing the ecosystem.

4.2.5.3 Continuous Business Ecosystem Monitoring

As for continuous business ecosystem shaping is concerned, understanding of the current ecosystem and comparison to the competing ecosystems is required. This comprehension is gained through analyses and gives insight for possible future opportunities and forthcoming threats. Probably, it is appropriate to constantly monitor the measures (productivity, robustness and niche creation) regarding all the competing ecosystems to gain knowledge of the
comparative dynamics between ecosystems. Anyhow, other descriptive data is needed to comprehend the underlying issues especially for the ecosystem to be shaped and managed. This descriptive data is a compound of other parameters.

This other descriptive data consists of selected information associated to key members, primary customers, market changes, product and service offerings, processes, structures and activity points. The data should highlight the locations of improvement and deterioration. Additionally, it would be important to monitor the status of the most valuable assets and productized innovations in respect of their maturity. This gives indications about the lifecycles of different assets, and thus, offers more predictability to the overall maturity of the ecosystem.

Monitoring of activities and their changes give indications of the appropriateness of solutions and point out changes, for instance, in attitudes, strategies and obsolescence. Thus, this descriptive data gives a significant support for decision making to shape the ecosystem evolution. It is essential to constantly seek for locations of opportunities and problems to further improve the health of the ecosystem.

4.2.5.4 Practical Ecosystem Management

In short, practical ecosystem management consists of addressing the points of improvement, and deterioration, and sustained improvement with relation to the health of the ecosystem. First of all, the intention is not to comprehensively consider all the possible ways to execute practical management associated to business ecosystems. Instead, the thesis first gives an overview of the ecosystem management, and then gives examples of the practical ecosystem management counting on diffusion of innovations, openness versus closed and network externalities theories.

If the overall health of the ecosystem is declining relative to longer timeframe, additional investments or establishment of a new ecosystem are to be considered. However, most likely there are certain highlighted domains, items or
groups of activity points, showing improvement, deterioration or transformation. The highlighted areas are reflected on the overall value promise, and vision of the ecosystem to determine further actions.

According to Iansiti and Levien (2004a) management hinges on understanding the three foundations in a networked setting [265]. These are 1) foundation of architecture (boundaries between technologies products and organizations within the ecosystem), 2) foundation of integrations (collaboration across the boundaries and sharing capabilities), and 3) foundation of markets.

The foundation of architecture goes well beyond technology sector. Fundamentally, it serves as the connection fabric for an ecosystem with standards, platforms (product, service and operational), and frameworks by offering general solutions to common problems and opportunities. The integration provides an access to enormous amount of intellectual and physical assets within the ecosystem to be leveraged and further developed by the members. The market foundation assesses design, operations and management of markets.

Market design essentials culminate to pricing mechanisms. In many cases, the value and opportunity costs of assets are known to determine pricing strategies. The cost curve needs to be designed so that losses generated before the market reaches a point of critical mass are manageable. Successful market operations should define clear, scalable frameworks for core operations, integration, and coordination. Additionally, those should leverage the operational capabilities with relation to the participants in the ecosystem, for instance, by minimizing internal efforts in transactions.

Furthermore, in practice, there tends to become barriers and facilitators to the diffusion process within an organization, such as a business ecosystem essentially is, as well. According to Simard and Rice (2001), the barriers and facilitators related to diffusion of best practices include the diffusion process itself, but additionally organizational context (institutional and organizational environment, absorptive capacity, competency traps, identity, culture and size), and
management-related (managerial commitment, appropriateness of training and reward systems)[266].

The best practices are defined as practices, which have been shown to produce superior results, selected by a systematic process, judged as exemplary, good, or successfully demonstrated otherwise. Thus, to facilitate the diffusion, the enablers should be embraced and barriers removed to the direction it is appropriate for the ecosystem to evolve.

Another concrete way to have an impact in respect to a highlighted area in the dashboard, and thus shape the ecosystem, is to select a new level of openness. The new level of selection has can have many effects. Generally opening a platform, according to Eisenmann, et. al., (2008) can spur adoption by harnessing network effects, reducing users’ concerns about lock-in, stimulating production of differentiated goods, reduces switching costs and increases competition by making it more difficult to appropriate rents from the platform[267]. It is worth the note that in general, the openness levels tend to become more open, otherwise the backward compatibility is likely reduced as Eisenmann, et. al., presume.

4.3 VALUE CREATION AND APPROPRIATION IN INDIAN BUSINESS ECO SYSTEM

For effective value sharing in the ecosystem there must be ways to share information / problems throughout the network, sustain value creation and balance value creation and sharing. Value sharing ways and methods vary depending on the ecosystem, however, as keystones focus on improving the overall health of the ecosystem (performance, robustness, sustainability). Efficient value sharing ways generally consist of robust platforms, easy-to-use, intellectual property licensing, shared operations, enabling software tools, and the like.

The distinct features emerge from this study are: Scale attainment through cooperative principles which would have been difficult to imagine by individual
farmers. The translation of scale to bargaining efficiency is obvious. This advantage devolves to participants as value. The second is cooperatives have embedded professional management structures and processes to handle marketing complexity. This symbiosis between professionalism and cooperative has helped create powerful brands e.g. Amul and market access across India. In the Amul led cooperative, farmers get up to 80% of customer payout. This is, perhaps the highest for any agro based industry. The Amul movement has more than 3 million participants on one side and revenue stream of ~ Rs 20K crores from a slew of markets. It has nearly 50 sales offices spread all over the country, more than 5000 wholesale dealers and more than 700000 retailers. AMUL is also the largest exporter of dairy products in the country. AMUL is available today in over 40 countries of the world.

AMUL achieved a turnover of Rs.18143.46 crores as of March 2014 which is a large in terms of size of revenue. Even MNCs face challenges to achieve this. AMUL has achieved consistent 23% cumulative average growth rate over the 6 years period ending March 2014. According to the Chairman of AMUL, “In fact, during the last four years, 59% increase in milk procurement price to our farmer-members has resulted in 46% growth in our milk procurement. By continuously offering most remunerative price for milk to our dairy farmers, we have incentivized them to enhance their investment towards increasing milk production”. This clearly establishes value creation for customers as well as for producers and processors as well.

Milk and dairying is one critical dimension of India’s food security. India has constantly endeavoured to achieve self-sufficiency. According a number of international experts attribute success in dairy to Amul’s cooperative movement and the Operation Flood Program. Currently, apart from being the largest milk producing nation in the world, India is also the largest milk consuming country in the world. Milk is now the largest agricultural output in India in value terms, with annual farm-gate value of Rs. 3.4 lakh crores.
The per capita demand for milk and milk products has increased to 300g per day. However it is around 800g per day in developed countries. India’s achievement is largely due to cooperative structure and value creation across supply network to smoothening demand and supply. AMUL and NDDB have constantly appropriated value equitably across supply network to achieve status of global leadership in dairy industry as evidenced by long term sustainable growth and diversification of products and markets.

Gujarat Cooperative Milk Marketing Federation Ltd. (GCMMF) is India's largest food product marketing organisation with annual turnover (2013-14) US$ 3.0 billion. Its daily milk procurement is approx 13.18 million lit per day from 17,025 village milk cooperative societies, 17 member unions covering 31 districts, and 3.23 million milk producer members. Their processing capacity across all Member Unions is about 232 lakh litres per day. Cattle feed manufacturing capacity is around 6190 MT per day. The product range comprises milk, milk powder, health beverages, ghee, butter, cheese, Pizza cheese, Ice-cream, Paneer, chocolates, and traditional Indian sweets. It operates through one of the largest such networks in India.

The distribution reach was improved by adding 2300 new distributors between 2011 and 2014. In order to increase the efficacy of coverage in rural and semi-urban markets, AMUL ‘Hub and Spoke’ model has expanded availability of Amul products to additional 3000 smaller towns through 160 Super Stockiest. In a major technological leap, AMUL information systems network is being extended forward to seamlessly integrate all distributors with the AMUL’s SAP system.

Thus, AMUL has embarked on value creation continuously through expansion drive is to ensure maximum growth in milk procurement from its farmer members. Integral to Amul cooperative model is the fact that control of the entire value chain remains firmly in the hands of the farmers. Through supply-chain efficiency, it ensures that maximum share of consumer’s rupee flows back to the
farmers. Value-chain innovations leveraging on technology have also helped in enhancing milk production, with increasing use of milking machines at farm level as well as milk chilling plants, bulk milk coolers and automatic milk collection systems. It has taken sustained efforts to enhance productivity of milch animals through scientifically designed programmes such as Calf Rearing programme, Pure Breeding programme, Total Mixed Rations programme and Productivity Enhancement Programme.

The Amul Model of dairy development is a three-tiered structure with the dairy cooperative societies at the village level federated under a milk union at the district level and a federation of member unions at the state level. It clearly establishes more than five decades of dairy revolution through cooperatives led by AMUL and National Dairy Development Board establishes importance of appropriate value network recognizing role, responsibility, risk and reward of all players by the focal firm which has given competitive advantage to the country.

The major markets are USA, West Indies, and countries in Africa, the Gulf Region, and SAARC neighbours, Singapore, The Philippines, Thailand, Japan and China, and others such as Mauritius, Australia, Hong Kong and a few South African countries. Its bid to enter the Japanese market in 1994 did not succeed, but it plans to venture again.

Amul is an iconic brand that touches generations through creative and contextual advertisement campaigns. The power of the brand creates enormous value for the cooperative members.

In 2013, Amul was named the Most Trusted brand in the Food and Beverages sector in The Brand Trust Report, published by Trust Research Advisory, where as in the 2014 edition of The Brand Trust Report, Amul is ranked 7th in the list of India's Most Trusted Food and Beverages brands.
Titan Industries Ltd starting in 1984 has grown in size by march, 2015 to encompass 1,201 stores, with over 1.59 million sq. ft of retail space delivering a retail turnover in excess of Rs11, 770 crore. Titan attributes its rapid growth to exploration of new customer segments, introduction of innovative new products, and rapid growth of the retail network. This is backed by strong brands – both Titan and Tanishq are the most admired brands in their categories. In sum, it is seen a dominant market exploration strategy that is supported by a highly effective technology exploitation using a combination of internal and external sources. It is also seen that alongside product innovation, the company has innovated in its supply chain and manufacturing processes to meet market needs.

The second feature is the high ethical standards that have been set by Titan through integrating their supplies with artisans creating a uniquely responsible ecosystem. The linkage with an NGO viz., MYRADA adds reassurance to stakeholders. Value is created by connecting a powerful brand with a community of artisans, the augmented value then becomes available for sharing.

In the case of Coromandel’s rural retail, value creations is through proximity/ direct connect with the customer, reach across low population clusters, cash denominated sales, comprehensive product range, and reassuring product delivery (endorsed tacitly by the corporate brand). This framework is then available to MNCs, Seed producers, Cattle feed manufacturers etc, the associates save by using the established network, thus value created gets shared amongst ecosystem participants.

In the case of ITC’s e-chaupal, there are 6,500 e-Choupals in operation in 40,000 villages in 10 states, affecting around 4 million farmers. ITC plans to scale up to 20,000 e-Choupals by 2012 covering 100,000 villages in 15 states, servicing 15 million farmers. The e-chaupal initiative has augmented farm income by 20% with productivity increasing by 14 % to 29%.
In the film industry a basic script gets enlivened through cinema. While the participants may be assured contractual value in a film, subsequent success leads to value capture by the distribution and screening agents. Success inevitably augments value potential of the actors and the director.

In the case of Lijjat Papad, there are more than 45,000 member sisters with 62 branches across the country in 17 states. The venture started with Rs 80. Lijjat’s annual sales increased from Rs 6,196 in 1959 to more than Rs 7.5 billion in 2013. Remuneration is the same for everyone, and profits and losses are shared equally among the member sisters, so there is no possibility of concentration of assets and wealth. Besides papad, Lijjat has also introduced other products, such as Sasa detergent and soap. However, papad has remained as its core identity product. Members of Lijjath, called sisters earn Rs 2,500 to Rs 3,500 a month for about six hours of work every day from home. Lijjath’s becoming of a shining example as a businessmodel based on the sound but otherwise considered an impractical Gandhian concept of Sarvodaya and trusteeship is an example by itself.

CAMPCO has membership of 1.18 lakh farmers and 547 marketing societies with a total paid up share capital of 25.33 crore. In the first year of procurement, CAMPCO started procurement through 5 centres only and for the past twenty years, it has been operating through more than 50 procuring centers across the states of Kerala and Karnataka. The CAMPCO has also opened sales depots in almost all parts of the country. The sale has grown by almost 30-times in forty years of its operation. In a period of 30 years, the CAMPCO has increased the profit level 10-times. The setting-up of CAMPCO has resulted in an effective stabilization of areca nut market and has offered a highly reasonable price incentive to the areca nut-growers.

In HUL’s Shakti project, there is a conscious extension of market space in the rural area and a more appropriate marketing model has been created. Involvement of SHGs in the marketing organization has added value in three ways –
new market, relatively lower cost sales strategy and creation of a socially inclusive model.

In 2013, the Company significantly increased the Shakti network by adding over 17,000 Shakti Entrepreneurs (Shaktiammas). Project Shakti now has over 65,000 Shakti Entrepreneurs. The Shaktiammas are complemented by over 50,000 Shaktimaans, the male members of the Shaktiamma family, who distribute products on bicycles to nearby villages. Cumulatively, they cover over four million households in over 160,000 villages across India. HUL has introduce a mobile based mini ERP (Enterprise Resource Planning) solution in the Shakti network.

The Tiruppur cluster with business of Rs. 5000 crores has over 2500 knitting and stitching units, 600 dyeing/bleaching units and 400 engaged in printing works. This ecosystem has created value by bulk sourcing, cross learning, integrating across multiple steps of the value chain. This has been possible by structured value creation by different players and proper value appropriation among network partners in the business. Tirupur is known for the cluster activity and mostly each activity of garment making is being carried out be outside units say. Knitting units, Dyeing & Bleaching Units, Fabric Printing, Garmenting, and Embroidery, Compacting and Calendaring and other ancillary units.

Another significant player who contributes for value creation is Tirupur Exporters’ Association popularly known as TEA was set up in the year 1990. Currently TEA has 668 knitwear exporters as members and doing yeoman service to the exporters. These would be key exporters contributing to a substantial high share of total exports. A Tirupur export Knitwear Industrial Complex (TEKIC) has been created for manufacture of knitwear for export. Similarly, TEA LEMUIR Container terminals Private Limited has been set up to facilitate exports. Exporters in Tirupur are now completing the customs formalities in Tirupur itself and sending the goods in containers directly for shipment through all southern ports and Mumbai.
NEW TIRUPUR AREA DEVELOPMENT CORPORATION LIMITED (NTADCL) is a Public Limited Company promoted by TEA jointly with the Government of Tamil Nadu, Government of India and Infrastructure Leasing and Financial Services Limited (IL & FS), Mumbai to supply water from Cauvery River – about 55 kms. from Tirupur for industrial and domestic use not only by the people of Tirupur but also those in more than 30 villages, en route the pipeline. The massive project also envisages underground sewerage system for Tirupur, collection, treatment and disposal of sewerage and solid waste.

NIFT – TEA KNITWEAR FASHION INSTITUTE is set up to cater to the manpower needs of knitwear industry and export business in all areas of designing, manufacturing, marketing and administration. Further to attract buyers from all parts of the world to the citadel of knitwear industry, TEA and AEPC constructed a Trade Fair Complex of international standards. Experts view that there is a substantial increase in export of autumn / winter wear from Tirupur is on account of these fairs.

NETAJI APPAREL PARK is a world-class production facilities to face the competition and challenges emerging in the post quote-free regime. With state-of-art machinery and world class infrastructure created with an investment of Rs.300/-Crores the park provide direct employment to more than 15,000/-persons. The park contribution for knitwear export turnover of Tirupur is about Rs.1500/-crores per annum. The concentration of capabilities has drawn attention and support from Government. This is one of the ways of value creation. The Key Players, Management Structure, Performance Dimensions and Value Creation of Business Eco System in India are presented in Table 4.1.
<table>
<thead>
<tr>
<th>Name</th>
<th>Key Players</th>
<th>Management Structure</th>
<th>Performance Dimensions</th>
<th>Value Creation</th>
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</thead>
<tbody>
<tr>
<td>AMUL</td>
<td>Farmers, Co-operative unions (GCMMF), Cattle feed manufacturers, Mobile veterinary hospitals, CFTRI, Distributors and retailers</td>
<td>AMUL – keystone GCMMF cooperative federation Professional Management overseen by Cooperative Milk processing plants Support through outsourced veterinary services, Cattle feed manufacture/</td>
<td>Size, Scale, Scope, number of members ~ 3 million milk producer members and &gt;15,000 village societies. Sales of ~20 K Crores 80% of revenue goes to farmers “Value for many; value for money”</td>
<td>Dairying that was unprofitable was made a profitable business. Emergence of value added products such as cheese, ice creams, butter etc. Brand built across the nation</td>
</tr>
<tr>
<td>Coromandel International Ltd</td>
<td>Farmers, Fertilizer manufacturers, MNC PPC makers, Seed &amp; Cattle feed Manufacturers, Agriculture department .Local communities.</td>
<td>CIL is Keystone Contractual tie ups with MNCs N fertilizers Seed and Cattle feed manufacturers Agriculture Department Farmers Local Communities</td>
<td>Retail Sales Sales of fertilizers (26%), PPC (no.2) Sales of outsourced PPC, Seeds, Cattle feed, Sprayers Reach across States Recall and customer preferences</td>
<td>Brand and Image Proximity to farmers Platform bandwidth supports MNC’s PPC marketing. Third party Seeds, Cattle feed gain market access. Capture of channel margin. Value added services</td>
</tr>
<tr>
<td>Name</td>
<td>Key Players</td>
<td>Management Structure</td>
<td>Performance Dimensions</td>
<td>Value Creation</td>
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<tr>
<td>ITC e-choupal</td>
<td>Farmers, ITC (corporation), Information Technology solution providers, Mobile telephone companies and service providers, the meteorological department and farm input companies</td>
<td>ITC is the keystone for the e-choupal All the other players gain mileage out of the initiative of the company and win</td>
<td>Disintermediation resulting in better gains to the farmers and better prices for the company</td>
<td>Closeness to the farmer Conduit for consumer durables, goods, automotives and banking services</td>
</tr>
<tr>
<td>HUL Project Shakti</td>
<td>Shakti Ammas, Self help group women, nongovernmental organizations, banks (indirectly)</td>
<td>Hindustan Unilever Limited is the keystone</td>
<td>Expansion of markets- access to low potential, inaccessible rural markets In 2013, the Shakti network had over 65,000 Shakti Entrepreneurs. The Shaktiammas are complemented by over 50,000 Shaktimaans, the male members of the Shaktiamma family, who distribute products on bicycles to nearby villages. Cumulatively, they cover over four million households in over 160,000 villages across India. Creation of expanded distributor and customer base at zero working capital Assured earnings in the range.</td>
<td>Creation of women entrepreneurs with benefits on economic, social and entrepreneurial fronts. Women entrepreneurs reinforce brand and image through “word of mouth” Rural Penetration</td>
</tr>
<tr>
<td>Name</td>
<td>Key Players</td>
<td>Management Structure</td>
<td>Performance Dimensions</td>
<td>Value Creation</td>
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<tr>
<td>Indian Film Industry</td>
<td>Development Team, preproduction agencies, production Team, Post production team, Exhibitors, Distributors, Financiers, regulators and audiences</td>
<td>Highly Unorganized, Disputes settled out of court Central Board for Film Certification (CBFC) to certify the worthiness of a film exhibition Labor laws</td>
<td>Successful certification by CBFC Box office- revenue collections upon exhibition Distribution reach Status of participants</td>
<td>IP Via creation of entertainment. music, talk shows, CD s etc Revenue Actors’ contract value increases with every success Theater’s have assured usage and revenue</td>
</tr>
<tr>
<td>Lijjat Papad</td>
<td>Supplies, Production and Administration by individual women only Dealers and retailers on the distribution front</td>
<td>Every individual woman is a co-owner Prompt payments to the women suppliers</td>
<td>Consistency in earnings by the women members Societal recognition Annual Turnover of ~ Rs.6000 crores</td>
<td>Progression from uncooked food products to detergents and cooked food Strong Brand Cash sales hence better cash management</td>
</tr>
<tr>
<td>Name</td>
<td>Key Players</td>
<td>Management Structure</td>
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<td>Value Creation</td>
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<td>CAMPCO</td>
<td>CAMPCO as a cooperative comprising growers (both of areca nut and cocoa) and non member growers; Major manufacturers of chocolate such as AMUL, NESTLE etc. and CAMPCO with its own manufacturing unit Distribution centers owned by CAMPCO</td>
<td>CAMPCO is the keystone constituting members in the form of individuals and primary co-operatives</td>
<td>CAMPCO is the largest procurer of areca nut in the country, procurement being 15 percent of the total production. Continuous support prices provided for procurement of areca nut and cocoa. Increase in the number of members</td>
<td>Stable market for growers – mainly small and marginal farmers and absorption of price shocks. Advisory role for the growers Long history of successful performance Brand and goodwill CAMPCO</td>
</tr>
<tr>
<td>Titan Industries Limited</td>
<td>Titan shareholders, Lenders, Retailers, Designers’, Jewellers, Bullion merchants. Franchisees</td>
<td>TITAN</td>
<td>Strong marketing. High brand, Retail network, Designing capabilities Goldsmiths gain via volumes and continuous engagement, Upskilling via findings and components.</td>
<td>TSR for shareholders Share of enlarged volume and scope for goldsmiths. Designing competencies, Customers have trustworthy brands for all occasions, Emotive advertising benefits agencies and customers/ Retail offers employment</td>
</tr>
<tr>
<td>Name</td>
<td>Key Players</td>
<td>Management Structure</td>
<td>Performance Dimensions</td>
<td>Value Creation</td>
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<tr>
<td>Tirupur Cluster</td>
<td>Design consultants, ICT service providers, managing and HR consultants, accounting firms, tax consultants, training providers</td>
<td>Highly unorganized players</td>
<td>Consistent growth rate of 30 percent for over a decade and a half 5000 cr +, 2500 MSMEs Fast growing industrial city. Cluster scale advantages</td>
<td>Cottage industry, small and medium enterprise creation Employment of unskilled labor Collectivized support services.</td>
</tr>
</tbody>
</table>
4.4 EXPERT’S OPINION ABOUT VALUE APPROPRIATION/SHARING IN INDIAN BUSINESS ECOSYSTEM

The expert’s opinion about value appropriation/sharing in Indian business ecosystem was analyzed and the results are presented in Table 4.2.

Table 4.2 Expert’s Opinion about Value Appropriation/Sharing in Indian Business Ecosystem

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Value Appropriation/Sharing</th>
<th>Weighted Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The lead entity must share total profits across the network / ecosystem based on value created honoring the principle of equity and value appropriation based on value creation</td>
<td>4.14</td>
</tr>
<tr>
<td>2.</td>
<td>The lead entity in a business ecosystem / value network will balance value creation and value appropriation</td>
<td>3.68</td>
</tr>
<tr>
<td>3.</td>
<td>It is the responsibility of the lead entity to demonstrate fairness in value appropriation</td>
<td>3.72</td>
</tr>
<tr>
<td>4.</td>
<td>Market price of inputs, outputs and intermediary services reflect balance of value creation and value appropriation</td>
<td>3.76</td>
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<td>5.</td>
<td>Sustainability of a business ecosystem largely depends upon the lead entity’s actions towards fairness and innovativeness</td>
<td>4.02</td>
</tr>
</tbody>
</table>

Source: Primary Data

The experts are mostly agreed that the lead entity must share total profits across the network / ecosystem based on value created honoring the principles of equity and value appropriation. The lead entity in a business ecosystem / value network will balance value creation and value appropriation and it is the responsibility of the lead entity to demonstrate fairness in value appropriation, market price of inputs, outputs and intermediary services. This reflects the balance between value creation and value appropriation for sustainability of a business
ecosystem. Sustainability largely depends upon the lead entity's actions towards fairness and innovativeness.

The findings of this research are on par with expert’s opinion about value sharing and value appropriation of eco systems. Therefore, the results of this present study are validated.