

Drivers Act behind Forming Strategic Alliances between Large and Small Players

The Case of Small Players in the Telecommunication Industry

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(The Case of Small Players in the Telecommunication Industry)

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Abstract

Background: Strategic alliances enable businesses to gain competitive advantage by providing access to the each other's resources which can be utilized to ensure the business profitability of the firms in the alliance. Telecommunication industry is dominated by large players, such as Mobile Network Operators. In contrary, comparatively small players, such as Mobile Virtual Network Operators, are struggling to sustain themselves in the business. Although a lot of literature is present on strategic alliances and partnerships between large and small firm, however, upon study, limited literature was found particularly focusing on how small firms could be empowered to form alliances with large players in the telecommunications industry.

Goal: The aim of this study is to identify those drivers behind strategic alliance that can enhance the empowerment of small players and to investigate the business advantages of a strategic alliance for both large and small players in an alliance in telecommunication industry. Since, a successful alliance happens when there is a win-win situation for both parties in alliance; the business advantages of an alliance are important factors that drive the formation of an alliance.

Method: The study followed a Qualitative approach of research using an embedded case study method. There was multiple unit of analysis as both telecom companies and telecom regulatory bodies were analyzed.

Result & Analysis: A total of eight representatives were interviewed from Norwegian Telecom Companies and Norwegian communication authority. The analysis part showed the strength, weakness of small players and their common struggles against industry rivalry due to insufficient financial capability. Most of the small players see the regulatory authorities contributing to their sustainability in the market besides their internal resources. This section also discusses the preference of large players for forming business alliances with small players to get their services.

Findings: An important finding of this research is that innovation and financial resource is important as an internal driver for a small player to be empowered to form an alliance with

large players. A very important driver is regulations in telecom. Lastly, in a win-win alliance, all parties expect to have business advantage, particularly large players aim for profitability while small players aim for both sustainability and profitability.

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1 Introduction

Strategic alliances enable business to gain competitive advantage through access to a partner's resources, technologies, capital and people. Teaming up with others adds complementary resources and capabilities, enabling participants to grow and expand more quickly and efficiently. Large companies and fast-growing companies rely heavily on alliances to extend their technical and operational resources. On the other hand alliances enable small entities to survive in industry by achieving sustainability. (Marcia Layton, 2004). However, forming alliances with unequally empowered companies is sometimes challenging if the predictable alliance output cannot show benefit for all members. Therefore most of the time, small players are deprived as they cannot get as many opportunities to form alliances for exploring business. This research discovers the drivers behind the formation of a successful strategic alliance between large and small players in telecom, especially from the small entities' point of view, to discover how they can demonstrate their importance in an alliance without being an underdog ally.

1.1 Why Telecom Sector?

The Telecommunications sector is booming in terms of the increase of total mobile subscriptions as well as the growth of business. According to the Ericsson mobility report ¹, by the end of 2019, total mobile subscriptions (voice and internet) are expected to grow from 7.3 billion in Q3 2015 to 9.2 billion by the end of 2019. In addition, global mobile broadband subscriptions are predicted to reach 7.6 billion (80% of mobile subscription) by 2019. and will gain an increasing share of the total mobile subscriptions over time. As the number of consumers grow, so too are the number of challenges for business. It has become challenging for mobile network operators to satisfy consumers by providing new services with quality.

To cope with this growing sector, telecommunication companies' trend is to take more strategic decisions for adapting with the changing market and industry environment where competition is mainly focused on deploying new quality services. This trend governs how telecom companies try to monetize their infrastructure investments and exploding data traffic, increasing capabilities, rationalizing their product and service offerings, developing the

¹ Ericsson Mobility Report; <http://www.ericsson.com/res/docs/2015/mobility-report/ericsson-mobility-report-nov-2015.pdf>

customer experience, and expanding business by forming proper collaborations. (PWCs Strategy)

This research will focus on strategic alliance between large and small players in telecom as well as the underlying drivers. Currently, the telecom industry is facing challenges such as almost saturated revenue, consumer dissatisfaction for large players and less sustainable business for small players. It is important to find the way of overcoming current challenges in this sector through strategic decisions. Before proceeding to the objective and research question section, it is important to explore the problems and challenges that motivate this study.

1.2 Who are large and small players in this Research?

Mobile Network Operator's (MNO) who have their own licensed spectrum from regulators are defined as **large players** in this research. Owning a licensed spectrum is very expensive and MNO's have the capability to afford this. They are large players in terms of market share, revenue and growth. Telenor, a Norway based MNO, which is globally named as Telenor Global. TDC in Denmark, Vodafone in Europe and Australia are all examples of MNOs.

Players who are comparatively smaller than MNOs, such as like third party telecommunication equipment vendors, content providers, solution providers, Mobile Virtual Network Operators (MVNO) and small MNOs (like ICE.net in Norway) are defined in this research as **small players**. They may be small entities with few years' telecom business experience, small to medium firms, entrepreneurial companies etc. MVNOs use infrastructure and spectrum from the MNOs. (More elaborate definitions of MNOs and MVNOs are described in chapter-2)

1.3 Statement of Problems

1.3.1 Declining Revenue

The major problem for Mobile Network Operators is that the revenues are stagnating and the operating and capital expenditures are increasing.

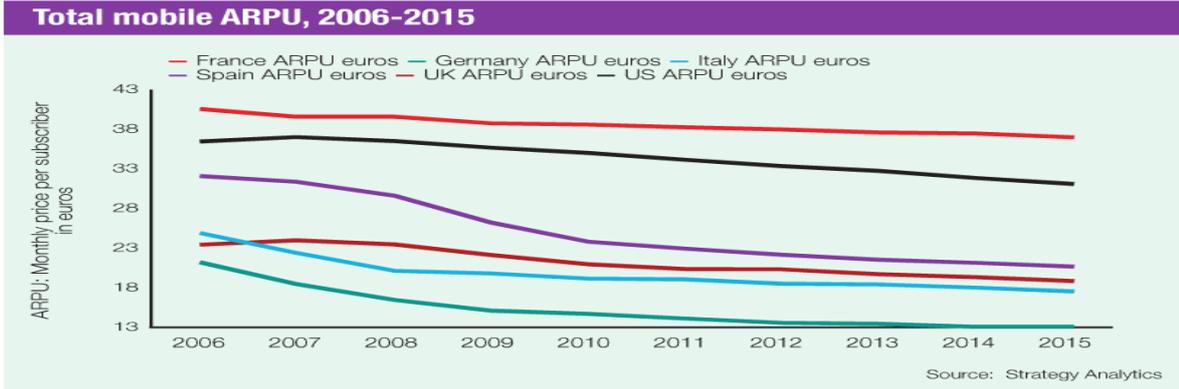


Figure 1 : Declination of ARPU

Figure -1 show the declination of Average Revenue per User (ARPU) in Europe and USA over the years.

Due to advancements in technology, mobile broadband has become very popular amongst consumers in the countries where rate of mobile penetration and internet speed is high. Therefore, the mobile-based multimedia type services (application, audio, video) have become popular and the companies based on these services who are called “over-the-top” (OTT) players (YouTube, Vber, Netflix, Facebook, Skype providers) are gaining in number and popularity. Much of the growth in overall communication volumes has come from OTT innovation in recent times. As traditional sector of earning revenue decline, Mobile Network Operators can concentrate on innovative OTT services forming alliances with small companies who develop the trendy applications and contents.

1.3.2 Consumers Satisfaction is not up to the mark

1.3.2 Consumers Satisfaction is not up to the mark

Network performance of Mobile Network Operators is the strongest factor in driving trustworthiness between users and their operators; this is one of the key strategies for revenue growth. Most of the mobile calls originate indoors (90%) where reliable connectivity can be a challenge. Indoor performance creates a big difference between the performances of the different operators. According to Ericsson, 45% of indoor users are not happy with the voice call quality and 55% of indoor users are not happy with data connectivity. (L M Ericsson, 2013). Large portion of the calls generate in indoor and almost half of the customers are not satisfied with quality, capacity and coverage. At a time, providing quality service to the users

for basic product like voice and internet service and competing in changed situation by introducing diversified value added services have become quite difficult for current MNOs.

Cloudberry Mobile, a small telecom company in Norway provides solutions to the mobile operators and their customers by improving the coverage and capacity of voice call and data connectivity whilst indoors.

Strategic alliances between MNOs and different service providers in telecom industry can make the job easier for both large and small companies; for example, according to the alliance agreement, MNOs can take the solution of voice and data service improvements from allied partners and can concentrate on introducing new value added services based on the present consumer demand.

1.3.3 Less sustainability of small players in business

Small players in the telecom industry are facing the challenge of not being sustainable in the long run. Despite of having their internal resources like innovative products, they cannot sustain in market because of lacking financial resource. After starting the operation, they are active in market for years but gradually become less empowered and stay apart from business because of insufficient resource and lower revenue not adequate for trading of the products. According to CEO of Australian Vodafone (A large MNO in Australia), small players like Mobile virtual network operators cannot be sustained in the industry for long because of their lack of prediction about network operational cost in business. (Khan, 2013). Industry rivalry also creates obstacles for small players. As a result, these entities are obliged to stop business or are acquired by larger companies.

1.4 Dealing with challenges: Forming strategy alliance between large and small players

Alliance between large and small players in the telecom industry can overcome the challenges discussed in the previous sections. It can facilitate large companies to look into diversified businesses outside of their core segment (voice and internet) and to provide satisfactory service to the users. Small players can offer their product to the users in market with less complexity and can solve their initial financial problems by alliance. Generally, alliance between equally powered companies is not uncommon but alliance or collaboration between

unequal companies is unusual in telecom. The reason is that large and established companies prefer to form collaboration with other large companies as they are more likely to achieve a win-win situation for all parties in terms of the profitability.

The common practice for MNOs is to take solutions from established vendors and service providers as nobody wants to take risk by making deals with new comers, even though small players can often offer more innovating solutions. How can small players prove their utility and importance to the established players in order to attract and form alliance or collaboration with them? Besides internal resources as internal driver, which **drivers** should be leveraged to empower the small players to achieve collaboration with the larger players?

Since the intangible internal resources of small players, such as their ideas, innovations, and new technologies, are often not enough to compete with rivals in the industry and prove their utility to large players; external bodies such as governments or regulators can come into force by imposing laws and legislations to empower them. Telecom regulators all over the world have common goals to create a level playing field for all players in the industry and to protect the consumer's rights by ensuring proper services from service providers.

This research will find out the drivers (internal and external), which act behind strategic alliance between large and small players in telecom; especially from the small player's point of view how they can attract established companies for forming alliance.

1.5 Why research has focused on small telecom players in Norway?

According to the Ericsson Mobility Report ², 50% of western European mobile subscriptions will be covered by advanced technology LTE by 2019. Norway, a country of Western Europe, has telecommunications infrastructure and is considered to be relatively advanced. Internet penetration is 95.1% (World Bank, 2015) of the population and 1.8 million households have access to high speed broadband. However, mobile phone users will not increase leading up to 2017 (4.4 million on 2011 to 4.7 million on 2017) and already 90% penetration rate has reached by Telecom operators. So, the deployment of basic telecommunication services such as voice and internet are completed for consumers by telecom operators in Norway.

² Ericsson Mobility Report; <http://www.ericsson.com/res/docs/2015/mobility-report/ericsson-mobility-report-nov-2015.pdf>

Consumers demand for content and value added services are increasing with the advancement of technology. OTT service providers like Netflix and Spotify have become a challenge to the large telecom players in Norway. Simultaneously, Mobile Network Operators need to provide better services to defend their core networking (voice and internet) and infrastructure business and to develop new applications and other services for offering to the consumers directly. This would be the toughest job for large players in Norway to manage both sides, so there is no way except forming collaboration with the small players in telecom. Additionally, the Researcher's geographic location and network impacts the scope of this study

To find the drivers behind forming strategic alliance between large and small players in telecom, it is intuitive to analyze both types of companies. This research will provide insights from the small players perspective but it is also interesting to discover why large player should come to form alliance with small players is also a concern to define the utility of the small players. Therefore, Telenor as large player is also considered to be analyzed.

The business activities of three small and small/medium type companies in Norway are considered as part of the analysis of the small companies' overall position in industry and their relation with large players. **ClouBerry Mobile** is a small telecom vendor who provides the services to develop indoor network coverage and capacity. This is the 1st vendor in Norway who is providing this solution with the device Femtocell (a small device which can improve the indoor network quality). This company has been chosen as one of the ten most innovative and new technological companies in Europe. It has signed an agreement to work with KTH Sweden, TDC in Denmark and Telenor Serbia for developing their indoor networks. **NextGenTel** is a small to medium size Telecom Company which provides the mobile voice call and mobile broadband services to customers from 2015 in the Norwegian Market. As a MVNO it rents spectrum from TeliaSonera, a large MNO that started its operation in Norway as a MVNO and later bought another Norwegian MNO NetCom. Besides mobile voice and broadband services, it has focused to developing application based services in accordance with consumers' demands. **ICE.NET** is the third largest supplier of mobile broadband services, covering more than 75% of Norwegian land acreage and 120 kilometers out from the coast. It was created in 2003 with a vision to provide broadband services across Scandinavia, as the other operators believed that much of the population had to do without mobile broadband. It is empowered in business as it has owned spectrum (450 MHz CDMA band) from the Norwegian telecom regulator and owns sufficient financial

resource to run the business. As the financial sufficiency is one of the important resources of this company, it has acquired “Network Norway” from the year 2015 and started operation as a full mobile voice and data operators like other MNOs.

Telenor Norway was considered here as part of the analysis of large players. It is one of the leading voices and data services operators in Norway with 3.215 million mobile subscriptions (Q2 2015) and total revenue is NOK 26.186 million (2014). It is the number one broadband provider in Norway. Monthly mobile ARPU is NOK 323 (Q2 2015).

Norwegian Communication Authority (Nkom) is an autonomous agency of the Ministry of Transport and Communications. Nkom supervises telecommunications service providers, manages frequencies and numbering resources, controls the competition and ensures consumers protection by issuing laws and regulations. Since regulators control the industry and ensure fair competition between players as well as ensuring the consumers’ rights, this entity is also the part of analysis in this research. (Nkom)

1.6 Objective of the study

The objective of this study is

1. To identify the drivers behind strategic alliances between large and small players in the telecom sector;
2. To discover the alliance output as business advantage for both parties in alliance.

1.7 Motivation of the Study

The motivation of this study is related to current challenges in the telecom industry that lead to form alliance between telecom players in value network. Small players are suffering from several issues like lack of financial resources, rivalry by giant competitors and not getting much scope to form alliance with large players.

This study is also much related to my professional experience and current study. As a MSc student of innovation and entrepreneurship, I personally prefer to work for the small or entrepreneurial companies finding the way for them to succeed in business. I am also involved in writing an article in journal paper exploring the business opportunity for small cell operators (the new business entity in telecommunication sector who has focus on

developing indoor network by launching a new device called Femtocell) with Dr Josef Noll, Professor, UiO and one of his PhD students.

In addition, during my working period in Bangladesh Telecommunication Regulatory Commission as an Assistant Director, I was directly and indirectly involved in drafting several legislations and directives that are involved in creating level playing field for all kind of players as well as ensuring consumer satisfaction. Though, large players also dominate the telecom business in Bangladesh as part of common scenario in the world telecom sector. As a result, laws like “significant market power” and “unified licensing” were ended in draft; never saw the light as published law. That’s why I feel the motivation to research a topic that can be useful to small players in telecom for their sustainability in business by forming strategic alliance with large players.

1.8 Research Question

From the above description the following research question is posed:

How can small players form strategic alliances with large players in telecom that brings business advantage for all parties in alliance?

“**How can small players form strategic alliances with large players in telecom**”- this indicates the drivers acting behind strategic alliance and creates opportunity for small players

“**that brings business advantage for all parties in alliance?**”- Benefit of all parties (large and small) in alliance can define the utility of small players that can be significant to the large players.

1.9 Thesis Structure

After the Introduction part the following chapters are presented as follows:

Chapter-2 describes the essential definitions and analysis of previous literature and theory to come up with the essential propositions of this research.

Chapter-3 describes the theoretical background of research methodology, research quality testing and data collection process.

Chapter-4 evaluates the propositions based on the evidence from the interview subject and other data sources. It is described how the propositions are supported by the evidence.

Chapter-5 concludes with the summary of findings and implication of future research.

2 Literature Review

The literature review section is divided into the following parts. Firstly, some relevant definitions related to research as explained. The following sections present literature on strategic alliance and also present the literature and theory as base of the propositions of this research

2.1 Definitions

MNO: MNO is Mobile Network Operator. MNO must own or control access to a radio spectrum license from a regulatory or government entity. It controls the elements of the network infrastructure necessary to provide services to subscribers over the licensed spectrum. Telenor, NetCom are the example of MNOs in Norway. ³

MVNO: A mobile virtual network operator (MVNO) is a mobile operator that does not own spectrum or have its own network infrastructure. MVNO buys voice and data packages in bulk from the MNO and sell it to their subscribers. ⁴

ARPU: “A measure of the revenue generated per user or unit. Average revenue per unit allows for the analysis of a company’s revenue generation and growth at the per-unit level, which products is high or low revenue-generators. “This term generally use in communication related business. ⁵ (Investopedia)

Femtocell: Femtocell is a small, low-power cellular base station, typically designed for use in a home or small business.

Femtocell has benefits both the enterprises and home users. It improves the indoor coverage and capacity. Coverage is improved because femtocells can fill in the gaps and eliminate loss of signal through buildings. Capacity is improved by a reduction in the number of phones attempting to use the main network cells and by the off-loading of traffic through the user's network (via the internet) to the operator's infrastructure. ⁶

³ <https://www.techopedia.com/definition/27804/mobile-network-operator-mno>

⁴ <https://www.techopedia.com/definition/26081/mobile-virtual-network-operator-mvno>

⁵ <http://www.investopedia.com/terms/a/arpv.asp>

⁶ <http://searchtelecom.techtarget.com/definition/femtocell>

Small Cell: **Small cells** are low-powered radio access nodes that operate in licensed and unlicensed spectrum that have a range of 10 meters to 1 or 2 kilometers. They are "small" compared to a mobile macrocell (Traditional network components of MNO to provide telecom services to large area), which may have a range of a few tens of kilometers. Wireless data traffic continues to grow at an unprecedented rate. To meet this demand, wireless industry has planned to deploy small cell for covering small areas. Accumulation of covering small areas it will cover the large area with a number of small cells. ⁷

Mobile Broadband: **Mobile broadband** is the marketing term for wireless Internet access through a portable modem, mobile phone, USB wireless modem, tablet or other mobile device. The first wireless Internet access became available in 1991 as part of the second generation (2G) of mobile phone technology. Higher speeds became available in 2001 and 2006 as part of the third (3G) and fourth (4G) generations. It is the most dynamic market segment, with mobile-broadband penetration globally reaching 47 per cent in 2015, a value that increased 12-fold since 2007. In 2015, 69 per cent of the global population has been covered by 3G mobile broadband, up from 45 per cent in 2011. ⁸

OTT: "In broadcasting, An over-the-top (OTT) application is any app or service that provides a product over the Internet and bypasses traditional distribution. Services that come over the top are most typically related to media and communication and are generally, if not always, lower in cost than the traditional method of delivery".⁹ The "over-the-top" (OTT) players are video, audio, and other services provider such as Netflix and Spotify that piggyback free on telecom systems. These OTT players are gaining in number and popularity, making the traditional operators' task that much more difficult. (PWCs Strategy)

3G: 3rd generation of the mobile telecommunications technology that comply ITU specification.

4G: 4th generation or LTE came end of the last decade which is growing very fast around the world.

⁷ <http://www.smallcellforum.org/about/about-small-cells/small-cell-definition/>

⁸ ITU press release 2015 ; https://www.itu.int/net/pressoffice/press_releases/2015/17.aspx

⁹ <https://www.techopedia.com/definition/29145/over-the-top-application-ott>

2.2 Strategic Alliance- Competitive advantage through Collaboration

“A strategic alliance is an agreement between firms to do business together in ways that go beyond normal company-to-company dealings, but fall short of a merger or a full partnership”. (Thomas & J.David, 2000). This explanation indicates that strategic alliance is a bit different concept from partnership or merger or acquiring by comparatively stronger entity.

A strategic alliance is an agreement between two or more partners to share knowledge or resources, which could be beneficial to all parties involved (Niren M, Shelburn, & C.Rogers, 1995). Elmuti & Yunus (2001) defines strategic alliances as a type of partnership which consists of two or more corporations or business units that work together to achieve strategically significant that are mutually beneficial.

The above description resembles strategic alliance as **Collaboration** rather than competition. Emanuela and David (Emanuela & David, 2005) also have defined that the Strategic alliances develop and propagate as formalized inter-organizational relationships. These types of joint arrangements represent new organizational formation that seeks to achieve organizational objectives better through collaboration than through competition.

Most importantly, Strategic alliance assists companies to obtain growth strategies and enter new market, reduce financial risk and share cost of resource & development and achieve **Competitive Advantage**. (Elmuti & Yunus, 2001)

The purpose of strategic alliance is to develop cooperative arrangements between two or more firms to improve the competitive position and performance by sharing resources (Elmuti & Yunus, 2001)

The term competitive advantage refers to the “ability gained through attributes and resources to perform at a higher level than others in the same industry or market” (Porter M. E., 1998). Michael Porter defined the two types of competitive advantage an organization can achieve relative to its rivals: lower cost or differentiation. This advantage developed from characteristics that allow an organization to outperform its competition, such as superior

market position, skills, or resources. According to Porter's view, strategic management should be concerned with building and sustaining competitive advantage. (Porter M. E., 1998)

2.2.1 Small players in strategic Alliance

According to Werner and Schlooser (2001), alliances reportedly improve the competitiveness of small firms by providing access to external resources, by providing synergies and by fostering rapid learning and change. (Werner H. & Schlooser, 2001). Generally, Small and medium enterprises (SMEs) are characterized by tight resources, which puts them in particular threat from increasing globalization and rapid technological change. SMEs would draw extensively on alliances to overcome threats and resource shortages and increase their viability in difficult times. However, comparatively SMEs propensity to co-operate is significantly less than that of large companies. It indicated that SMEs do not fully utilize alliances to improve their competitive position (Eisenhardt & Schoonhoven, 1996) (Werner H. & Schlooser, 2001).

According to Page Page (1998) "Alliances are particularly alluring to small businesses because they provide the tools businesses need to be competitive". Sometimes, the only way follows by Small companies that can help them to stay competitive and even survive in today's technologically advanced, ever-changing business world is to form an alliance with another company or companies (Elmuti & Yunus, 2001). Small companies "realize the mutual benefits they can derive from strategic alliances in areas such as marketing, distribution, production, research and development, and outsourcing" (Page, 1998). Therefore, this research has focused on drivers act behind strategic alliances, especially from the small players' point of view.

The alliance between two unequal empowered players needs to maintain some extra force for both parties benefit in business. Mike Nevin describes the importance of strategic alliance in his book "The Strategic Alliance Handbook: A practitioners Guide to Business to Business Collaborations" focusing on the factors that can make some alliances more successful. The struggles of alliance between unequal entities or disparate partner sizes lie in the degree of their dissimilarity in resource ownership and market position. Such partnerships are often called "Underdog Alliance". This book suggests a few tactics which can help to get rid of these underdog situations; such as developing identified business value propositions for each

company in the alliance, convincing the larger partner regarding conduction of a formal alliance audit once a year, adopting a collaborative negotiation style, identifying clear mutual needs, developing a clear understanding of partner accountability on both sides, risk sharing in the relationship, managing internal and external communication etc (Nevin, 2014).

2.3 Internal Resource as Internal driver of Strategic Alliance

Soares (2007) defines a number of internal resources related to companies' strength such as organizational structure, facilities, product innovation etc. Internal resources can be tangible and intangible in nature. This paper also indicates utilizing all possible internal resources at the initial stage of business are tough without collaboration with other players. Forming collaboration or alliances can assist companies to create more competences, which are fundamental to achieving market leadership. Core competencies are those groups of activities, skills and technologies that a firm does well. This allows the firm to add direct value to the customer, providing a clear advantage and differentiation and allowing the firm to extend itself into a new market (Soares, 2007).

According to Galende & Manual (2003) that Internal resources act as internal drivers in any business. Makos (2015) defines internal resources as financial (funding, investment opportunities, source of income), physical, human resources etc. Utilization of Internal drivers properly can enhance the innovativeness of a firm. (Galende & Manual, 2003). According to (Elmuti & Yunus, 2001), Strategic alliances can be effective ways to diffuse new technologies, to penetrate in new market to acquire knowledge from partners for achieving competitive advantage. Partners in alliance can share their ideas, innovative concept as well as the benefit of internal resources for one another. In this way jointly allied partners can achieve competitive advantage over competitors.

According to Das & Teng (1998) partners bring at least four categories of potentially important resources such as financial, technological, physical and managerial skills to an alliance. Financial and Physical resources of any company are important in making strategic alliances. Kogut says that firms may want to utilize their own resources but sometimes for insufficient infrastructure they cannot make it by own cost. At that point, firms seek projects

that can be carried out in conjunction with the resources of other firms; especially the financial and physical resources (Kogut, 1988).

From start-up to large companies, financial resources are the most important element in business. A major challenge of small and medium size companies is related to the efficient management of scarce resource such as funds and intellectual capabilities. Because of the lack of initial funding, many small and medium sized enterprises can not stand-up in industry and if they do somehow manage to enter into market, cannot compete with their large sized competitors. (Dr. Hande, 2015)

Product innovation is an important internal resource and a critical enabler in competitive business world. Current competitive pressures drive firms to introduce higher quality products faster and at lower cost than competitors (Barnett & Clark, 1998). An organization can derive more value from its product innovation effect as it can create customer value, grow market share, enter new markets and increase profitability (McDermott & Handfield, 2000) (McDermott & O'Connor, 2002). Therefore, product innovation can increase the empowerment of any company as product innovation can intensify the competitive advantage.

At present, Telecom companies have begun to follow growth through innovative digital ecosystem. Many major global telecom operators have established their own independent incubators or venture funds focused on digital innovation. Some of them opened satellite offices in the Silicon Valley region to get more access to the latest technological services and to get connected with the dynamic technological entrepreneurs. Therefore, innovative ideas and products not only creates benefits to the dominant players by introducing next-generation technological products to the consumer but also to the new players by gaining opportunity to make alliance with dominant players in telecom (PWCs Strategy).

The above-mentioned literatures convey that financial resource and product innovation are significant for companies to achieve competitive advantage and individual empowerment over competitors.

This leads us to the following proposition

Proposition 1: Internal resources (financial resources & product innovation) are important internal drivers for small players while forming strategic alliances with large players. .

2.4 External drivers of business in alliance

According to Porter M. E. (1998), external drivers are related to market forces, competitions, industry environment, customers' behaviours, regulatory impact etc. The value chain as both a concept and tool has been used for the last 30 years to understand and analyze industries. Like internal drivers, analysis of external drivers is also significant for forming strategic alliance among companies. In most cases, alliances allow partners to enter into each other's value network for providing services and technologies. (Peppard & Rylander, 2006). Porter (Porter M. , 1980) describes **value chains** as representations of industries in terms of sequences of value-adding activities. They are particularly appropriate for representing manufacturing industries in which the transformation of physical materials through a sequence of manufacturing processes is the prime feature and the major source of competitive advantage for many of the firms in these industries. Therefore, analyses of value chain and value network can express the most of the external parts in business like industry, competition and customers' behaviour etc.

2.4.1 Value Chain to Value Networks in Telecommunication: Opportunity for Small Players

Value chains connect multiple activities both within and between firms (Porter M. , 1980) but value networks connect multiple buyers and sellers at a single node. (Jeffrey L., 2009) explains how the mobile phone industry changing from value chain to value network and the emerging value network of telecom industry in current changed situation. Figure-1 presents the old value chain of telecom industry and figure-2 presents the emerging value network in

current telecom industry.

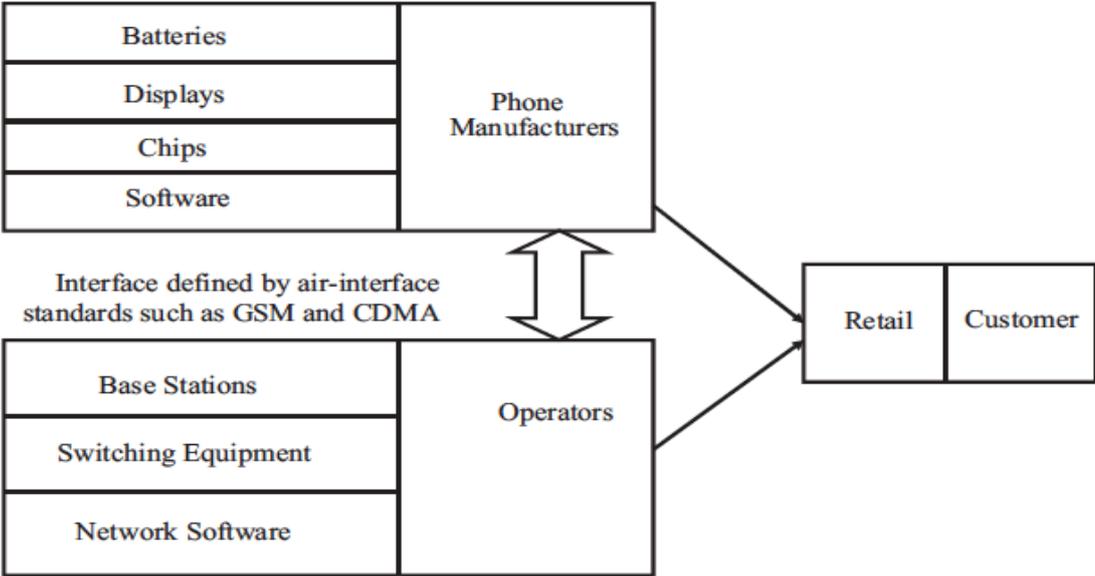


Figure 2 Value Chain of the earlier telecom industry (Jeffrey L., 2009)

This is the value chain of telecom industry in 1990s at global level when only Mobile Network operators, phone manufacturers or telecom vendor and retail customers were consisted in value chain of telecom industry. Only voice, SMS were the basic service provided by MNO.

However, the rapid growth in the mobile industry can be described well in value network rather than value chain. (Fig-2) (Peppard & Rylander, 2006)

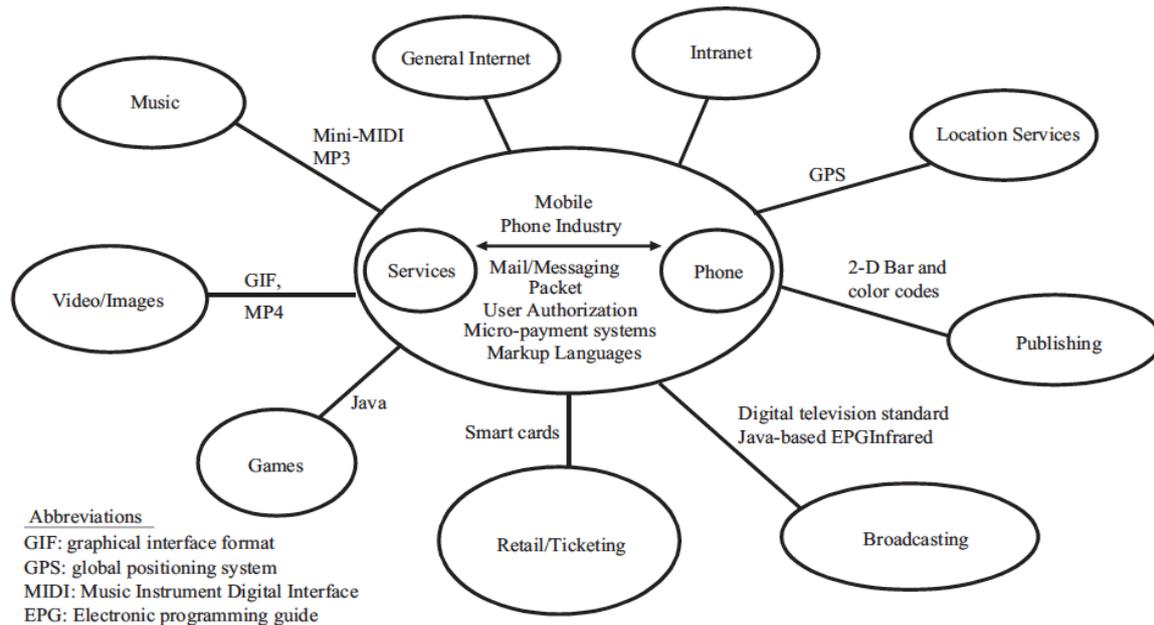


Figure 3 Emergent Value Network in current Telecom Industry (Jeffrey L., 2009)

Fig-3 shows the current value network of telecom industry where besides basic services several service providers (Internet Service Providers, multimedia, entertainment, content, Games, broadcasting etc.) are also connected in telecom industry.

The diversified telecommunication value chain creates business opportunities for comparatively small players as well as increasing **profitability** of the large players (Peppard & Rylander, 2006). This journal describes the situation of the smaller players in telecom named MVNO who rents the traditional mobile network operators' infrastructure and sells basic services (voice, internet) as well as contents to customers under the MNO's brand name or their own brand. The two MVNOs, Virgin and Tele2, purchase infrastructure from the MNOs T-mobile and Telenor respectively and operate their own businesses. This is because of the enormous transformation and improvement in telecom sectors; it is not possible for large players such as the MNOs to perform all the jobs in value network alone (Peppard & Rylander, 2006).

Peppard & Rylander (2006) explains the importance of large telecom companies forming collaboration with comparatively small but dynamic players like infrastructure providers, content providers, content aggregators, software developers and device manufacturers in the mobile ecosystem as they are already competing for position and this paper indicates that those large players that are able to understand the value of this network will be the winners. Therefore, here is the opportunity for small players to enter the value network in telecom

industry with large players.

2.4.2 Change of Consumers' behaviour and opportunity to form alliance

El-Darwiche and Roman (2010) explains about consumers' ubiquity in telecom sectors and how consumers' habit, tastes, and patterns of consumption of communications services are changing in recent days with the change of telecommunication value network. The more bandwidth and services that operators and providers of TV and other services offer in addition to existing networks, more their consumers consume and expect. (El-Darwiche & Roman, 2010)

Moreover, consumers of telecom services from business or personal would like to connect anywhere, at any time using any number of mobile and fixed technologies. It has become a challenge to mobile network operators to arrange all diversified value added services for consumers besides arranging the basic services like voice and Internet properly. (El-Darwiche & Roman, 2010)

Similarly, Ericsson Consumer Lab's annual report (<http://www.ericsson.com>, 2014) also shows that consumers want technology and connectivity to be integrated into all aspects of daily life in anywhere and also their preference in good quality network coverage and capacity. Mckinsey's research (Ewan, Eric, & Kevin, 2014) conducted by leaders in telecom, media and technology sector, found out the continuous changed behavior of consumers like device shifting, focused on content (multimedia, application services), communication shifting (from voice to data centric), priority over good capacity and coverage of network indoor and outdoor each year in both developed and emerging market around the globe. Are large telecoms players are prepared to handle this new situation? The researchers from Mckinsey suggest to make business strategy more robust to reflect consumer diversity and to accomplish this in successful manner needs collaboration with companies in value network. As a result small innovative players with updated solution can make alliance with large players towards having benefit for each other.

2.4.3 Regulatory Impact on Telecom Business

.Control of industry by Regulators and Government are the external drivers of business (Porter M. E., 1998). Why do we need regulations in the telecom industry? The need for regulation in telecom sector varies depending on the conditions of the marketplace. The widely accepted regulatory objectives are described in the book “Telecommunications Regulatory Handbook” – “Promote universal access to basic telecommunication services; foster competitive markets to promote; where competitive markets do not exist or fail, prevent abuses of market power such as excessive pricing and anti-competitive behavior by dominant firms; create a favorable climate to promote investment to expand telecommunications networks; promote public confidence in telecommunications markets through transparent regulatory and licensing processes; protect consumer rights, including privacy rights; promote increased telecommunications connectivity for all uses through efficient interconnection arrangements; optimize use of scarce resources, such as the radio spectrum, numbers and rights of way.” (Intven, Oliver, & Sepulveda, 2000)

International Telecommunication Union (ITU) also explains the same way in its “Telecommunications Regulations Handbook” about the goal of regulation to create competitive environment in global telecom industry. (Telecommunication Regulation handbook, 2011)

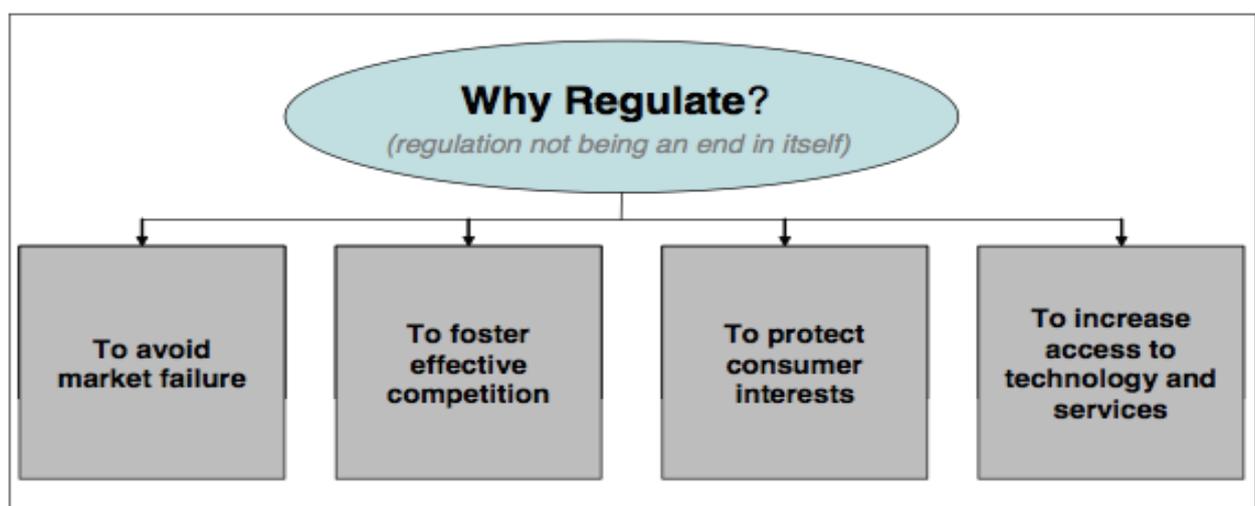


Figure 4 Goals of Regulation; Source (Telecommunications Regulation Handbook, 2011)

Figure-4 shows the regulator’s goal to foster the fair competition, create level playing field for all competitors as well as protect the consumer right in telecom sector. Moreover, almost

all of the regulators' in different countries have the same goal to facilitate industry player and consumers.

The Norwegian Communication Authority, who acts as regulator of telecom sector in Norway, has imposed regulations that oblige Mobile Network Operators to share their infrastructure with other small operators (example: MVNOs) in telecom and also oblige them to set a limit in price. There are regulations and directives imposed by Nkom to create the effective competition and also to protect consumers' interest.

2.4.3.1 Regulations for the empowerment of Small Players:

However, the telecom regulatory bodies have not developed regulations in accordance with the current changed industry (explosion of consumer demand, growing data usage, and faster 4G networks enable even more data services); not many regulations were found that would create empowerment of comparatively small players in industry. One of few is the Swedish Regulatory body that has thought to impose new type of regulation. Swedish Regulator PTS opens 1800 MHz mobile spectrum for license exemption. This regulation imposed by regulators for giving opportunity to all telecom players whoever wants to use spectrum to meet-up the consumer's rising need for broadband connection, good indoor and outdoor network coverage as well as ensuring quality service (Nilson M. , 2012).

According to the statement from Roger C Dermen, chief of Wireless Communication Bureau, USA, regulatory contribution is needed for ensuring empowerment of the less dominating telecom operators in market. He emphasized the empowerment of small telecom companies in wireless sector and also mentioned about enormous challenges those new entrants' face. Challenges are raising funds to compete in spectrum auction organized by telecom regulator, finding a revenue stream to support business expansion, or developing a business model based on market needs rather than regulatory mandates. When existing top companies serve most of the customers in USA, the communication regulator FCC (Federal Communications Commission) should come forward by imposing legislation that can empower small companies in market. He indicated the change of current telecom regulation in USA for small enterprise. The small business entrepreneur must exercise independent decision-making authority. (Dermen, 2014).

Hence, it can be seen that examining value networks is important as it directs large companies to form alliance with other companies in value network. Ubiquity of consumers' needs oblige players in the industry to think how these growing demands can be solved in an economic way by collaborating with others. Regulators' contribution by imposing legislation in accordance with the current environment in telecom industry is significant for small players to be empowered in business, the way they can attract large players showing their utility. Can these drivers empower small players in making strategic alliances with large players? Which one of these can be most important external drivers? A deeper pursuit of these questions can define the scope of the study.

Therefore the above analysis can provide the conceptual background of second proposition.

Proposition-2: External drivers (value network, consumers and regulators) are important for small players while forming alliance with large players in telecom

2.5 Business Advantage from strategic alliance

Strategic alliances are voluntary cooperative inter-firm agreements aimed at achieving competitive advantage for the partners (Dash & Bing-Sheng, 2000). According to Elmuti & Yunus (2001), expected benefits are essential when a company enters into strategy alliances arrangements with a comprehensive plan outlining detailed expectations and requirements. Mutual gain as business advantage from alliance is the main goal that ensures the achievement of competitive advantage; balancing the operations, risks and rewards; exploring new opportunities together, attaining profitability and sustainability. (Elmuti & Yunus, 2001) (Elmuti & Yunus, 2001)

Although this research's goal is to identify the drivers that can create empowerment for small players in making alliance with large players, when considering the business advantages from an alliance, it will be described and analyzed from the large players' point of view also. "How can large players benefit from forming alliances with small players?" – This is also an important part of research to find the answer of main research question.

2.5.1 Business growth and entering new market

Business growth and entering new market are the important advantages of strategic alliance for allies' parties (Coopers & Lybrand, 1997). Sometimes it is tough for companies to establish new markets one by one. Therefore forming an alliance with an existing company in marketplace can make the business path smoother for the new entrant company. (Elmuti & Yunus, 2001).

Craig Wigginton, U.S. Telecommunications leader, Vice Chairman of Deloitte & Touche LLP, speaks about the biggest challenge of telecommunication industry. This is related to the consumers' high demand to the good coverage network and high capacity broadband connectivity. However, this challenge directs the growth opportunity of the sector as telecom players can expand their business by entering diversified sectors of new market as part of their growth strategies. The ongoing expansion of the mobile ecosystem, coupled with demand for high-bandwidth applications and services keeping pressure on the industry to increase the availability and quality of broadband connectivity. With this expansion of telecom ecosystem, new business models are emerging among both traditional established players and the new players. This kind of growth naturally leads to form collaboration among companies as part of their strategic management. (Craig Wigginton, 2014)

Cullen, Johnson & Sakano (1995) have carried out an exploratory study among Japanese companies and international companies to find the performance of alliance and joint ventures. They found the benefit of strategic relationship is **profitability** from an economic point of view (Cullen, Johnson, & Sakano, 1995). This profitability relates to obtaining new technology with the cheapest cost as not all companies can provide the technology by own effort. So teaming up with another company who has the technology or who can improve partners' resource is important to reduce cost. Reducing financial cost and entering in new market is the outcome of alliance as profitability for both small and large players.

Who benefits more in an alliance between two unequally powered companies or to whom alliance output is more meaningful? Study says that smaller companies benefit most from alliances with market leaders because such organizations can create new opportunities, offer vast resources and position them for further growth. Small companies can overcome their limited marketing budget and little industry clout by forming alliance with company who has already a "name" in the market. (Marcia Layton, 2004)

It is too complicated and expensive to develop expertise, product development and market access at the beginning of operation by small players. For survival in the industry they need to form alliances. As a matter of survival, alliance assist smaller companies to overcome primary obstacles and to show competency to the existing market players. This in turn leads to sustainability in business for small companies. (Marcia Layton, 2004)

All of the literatures discussed above lead to the third proposition in this research

Propositions 3: The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

2.6 Theoretical Framework

2.6.1 Resource Based Theory

The reason behind examining the relationship between internal drivers in alliance and resource-based theory is, internal drivers are related to organizational strength and weakness. The resource-based view stresses the internal aspect of a firm. Barney says in his article (Barney J. , 1991) that competitive advantage of firm can define more accurately by its internal resources. He focused on the maximization of long run profit through using and developing firm resources. This means that what a firm possesses would determine what it accomplishes. Resource Based Theory also indicates that a firm should pay more attention to its resource rather than its competitive environment.

There are generally four categories of resources that a firm may possess: financial capital, physical capital, human capital and organizational capital (Barney J. , 1991). Financial capital is the money from retained earnings, equity holders, bondholders and banks that firms have access to. Physical capital includes the firm's raw materials, land, equipment and buildings and other physical assets. Human capital is the expertise and intelligence of a firm's individual employees. Finally, the organizational capital of a firm comes from the combination of individuals in an organized way.

There are two assumptions that are fundamental to Barney's resource-based view: (1) resources are distributed heterogeneously across firms, and (2) these resources cannot be

transferred from firm to firm without cost. This article has found out the link between firm resources and competitive advantage and directs four empirical indicators of the potential of firm resources to generate sustained competitive advantage- value, rareness, imitability and substitutability. (Barney J. , 1991). When resources cannot be transferred without cost then it creates value to the resource owning company. So, the more a firm's resources are categorized by imperfect mobility, imperfect imitability, and imperfect substitutability, the more likely the firm will get involved in strategic alliances (Das & Bing-Sheng, 2000). From this concept VRIO (The question of value, the question of rarity, the question of imitability the question of organization) and VRIN (Valuable, Rare, In-imitable, Non-substitutable) model are formed and these are part of Resource based view for analyzing the competitive advantage of firm.

According to Kogut (1998), alliances form based on firm resources such as knowledge and technology. He found out the reasons behind a firm's willingness to form alliance are either to acquire the other's organizational technique, or to maintain one's own technique while benefiting from another one's resources. Therefore performance of alliance is mutually beneficial for partners (Kogut, 1988).

Therefore, resource base view can be theoretical view of proposition-1 and Proposition03

Proposition 1: Internal resources (financial resources & product innovation) are important internal drivers for small players while forming strategic alliances with large players.

Proposition 3: The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

2.6.2 Six Forces Model: Analysis of the external drivers and strategic alliance in business

“Porter five forces analysis is a framework that attempts to analyze the level of competition within an industry and business strategy development. “

Porter's five forces are threat of new entrant, threat of substitute products, bargaining power of buyers, bargaining power of suppliers, competitive rivalry. These forces can explain industry environment as a part of external analysis of business. However, there is no clear

indication how to industry players form alliance to each other. To overcome this drawback of five forces model, the concept of “complementors” came into force as sixth force in mid-1990 to explain the reasoning behind strategic alliances. “**Complementors** are businesses that directly sell a product (or products) or service (or services) that complement the product or service of another company by adding value to mutual customers; for example, Intel and Microsoft (Pentium processors and Windows), or Microsoft and McAfee (Microsoft Windows & McAfee anti-virus).¹⁰ The Six Forces model is used in this research to analyze the external drivers (value network, customers and regulators) of forming strategic alliance between large and small players in telecom. Six forces model includes –

“**Competition** - assessment of the direct competitors in a given market;

New Entrants - assessment in the potential competitors and barriers to entry in a given market;

End Users/ Buyers - assessment regarding the bargaining power of buyers that includes considering the cost of switching

Suppliers - assessment regarding the bargaining power of suppliers

Substitutes - assessment regarding the availability of alternatives

Complementary Products - assessment of the impact of related products and services within a given market “¹¹

The model is used to recognize a firm’s strategic position by examining the forces that effect the industry. It is a framework that helps companies identify risks and estimate the best strategy to move forward towards increasing profitability and competitiveness. Forming alliance can be one strategic approach from these six forces.

The above discussion provides a theoretical background for proposition-2

Proposition-2: External drivers (value network, consumers and regulators) are important for small players while forming alliance with large players in telecom.

¹⁰ <http://www.investopedia.com/terms/s/six-forces-model.asp>

¹¹ six forces model; https://en.wikipedia.org/wiki/Six_forces_model

3 Research Methodology

The study's design and data collection methods were guided by research question, so let us revisit it.

Research Question

How can small players form strategic alliance with large players in telecom that brings business advantage for all parties in alliance?

3.1 Research Design

It is a case-study research. The Research question for this study was selected based on the conducted preliminary research and personal motivation. Taking into account my background and significance of strategic alliances for high-technology companies, Telecommunications sector has been chosen as a focus of this research. As the research methodology was case study with deductive approach, the next step was to formulate the propositions. Prior to formulate proposition, relevant literature and theory was analyzed for the logical base of each proposition. Yin (K.Yin, 2009) suggests that each proposition directs attention to something that should be examined within the scope of the study. Moreover, research propositions in accordance with research question reflected upon the primary data collection.

The analysis from previous literatures was focused to find out the important internal and external drivers behind forming strategic alliance between large and small players and to find out the alliance benefit for both players. Secondary research shows that most of the alliances are formed between almost equally powered players. Collaboration or alliance between large and small players is formed less frequently. I collected data from three small telecom companies and a large MNO in Norway. Mainly, the research is focused on small players and their role in forming such strategic alliances. However, to address the research question fully and ensure that the topic is covered from both perspectives – those of small and big companies, the study includes one large MNO – Telenor Norway. The telecom regulators' view was also the important concern of this research to discover the rules and regulation imposed by regulator that can empower small operators. So, Nkom was also in the unit of analysis of this study. The units of analysis are:

-New entrant telecom vendor (Cloudberry Mobile)

1. Mobile Virtual Network Operator (NextGenTel)
2. New entrant MNO. (Ice.Net)
3. Large MNO (Telenor Norway)
4. Telecom Regulator (Norwegian Communication Authority (Nkom))

3.2 Why Case study:

The case study was chosen because of the “How” impact on research question. Robert Yin (K.Yin, 2009) defined case study research as: “A case is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. In business research case study design often involves an in-depth analysis of an individual, a group of individuals, an organization or a particular sector. In short, the case study provides in-depth analysis of a specific problem (Wilson, 2010). This research is mainly focused on the current scenario of telecom sector regarding strategic alliances between unequally empowered companies. Especially I have analyzed less dominating players’ point of view. It was entirely an in-depth analysis of specific problems that was mentioned in the Chapter-1.

3.3 Type of Case Study:

According to Wilson (Wilson, 2010), Case study research can be divided on single and multiple case studies. The former involves research that examines a single case, while the later analyzes several cases. Case study research can also be categorized on the basis of analysis- holistic (single unit of analysis) or embedded (multiple units of analysis).

According to above described theory, this study can be classified as an embedded case study where the research is focused on only telecom sector with multiple unit of analysis- four different types of telecom players and government regulatory body of telecom.

	Narrow	Broad
Narrow	Single Case designs (Holistic analysis)	Multiple Case designs (Holistic analysis)
Broad	Single Case designs (Embedded analysis)	Multiple Case designs (Embedded analysis)

Table 1 Case Study Design (K.Yin, 2009)

This study is **cross-sectional** (Data is collected at a single point in time. As a result, research can be completed over a relatively short period due to the time-limited nature of a master’s thesis. The details of a recommended follow-up longitudinal are given in the conclusion.

The primary source of collecting data was interviewing with the three small companies and with a large Mobile Network Operator. The **semi-structured interview** was followed. The interview question was selected in accordance with research question and propositions. The interview period was more like open discussion for freely given answers and at the end it was found that all quests were covered. Furthermore, transcribe words were sent to the interviewees to crosscheck their answers ensured the data reliability. As a qualitative study, data reliability and validity is of particular concern. These two elements are the element of testing the quality of research. (Wilson, 2010)

3.4 Testing the quality of Research

Reliability concerns the extent to which a measurement of a phenomenon provides stable and consistent results. (Wilson, 2010)

3.4.1 Data Reliability

Data reliability ensures the consistency of a measured result. To improve the data reliability of case study research Yin (K.Yin, 2009) suggested the following three principles which were addressed by this research

1. Use multiple source of evidence: A major strength of case study data collection is the opportunity it gives to use many different sources of evidence. The primary unit of analysis

was telecommunication companies who are promising and formed by skilled, expat individuals with profound experience in telecom sector. Eight interviews from four companies were conducted to increase the reliability of the data. All the interviewees were experienced and key persons of the organizations, which could ensure the reliability of data.

2. Create a Case Study database: After taking interview for collecting primary data, a formal, presentable database was developed. The main target of making this database is to make it easy for other investigators to review the evidence directly.

3. Maintain a chain of evidence: The interviews were recorded with the permission of interviewees. The recorded conversations were transcribed into written note right immediate after interview. The interview questions and guides are found in the appendix. Due to privacy concern, the interview transcripts are not published here.

3.4.2 Data Validity

Validity is related to the topics that researchers are measuring or intend to measure. It refers to the relationship between a construct and its indicators (Wilson, 2010). A study can have both internal and external validity.

External validity is the extent to which the findings from study can be generalized to other cases or settings. Therefore, this quality testing approach is not suitable in this research. (Wilson, 2010)

Internal validity is defined as “establish correct operational measure for the concepts being studied”. Construct validity, part of internal validity is valid to the extent that it measures what it is supposed to measure. In this case study, the primary indicators were the interview questions that were formulated in accordance with research question and propositions, followed by literature study. Ensuring internal validity in a case study can be difficult to the number of variables (K.Yin, 2009).

Yin suggests the way for improving validity in qualitative research by data triangulation: finding multiple sources, which support a given finding. The primary data of this research was not only collected from the telecom companies but also collected from government body. It was done to obtain the information about the regulations that they impose for ensuring fare

competition in market. In addition, data from the existing web pages of all interviewee companies collected to make result and analysis part more accurate.

In addition to data triangulation, Mays and Pope (2000) recommend a number of additional measures to improve data validity when conducting qualitative research. These were followed as much as possible:

1. **Clear exposition of data collection and analysis:** This will follow in the following section in Result and data analysis.

2. **Reflexivity.** This is defined as sensitivity to the ways in which the researcher and the research process have shaped the collected data. Any personal and intellectual biases may influence the data collection. For this study, care was taken to ask neutral and open-ended interview questions that would allow the interviewees to expound freely upon the given subject. If needed, follow-on questions were used for clarification of points already volunteered by the interviewee.

3. **Attention to negative cases:** The contradict element in the data were also considered and analysed carefully to ensure the validity of the findings.

3. **Fair dealing.** This requires employing various perspectives and data sources so that one viewpoint does not dominate a situation's truth narrative. To maintain the quality of this research, the interview was depth, lasted for at least one hour and was conducted with different actors from telecom sectors like operators, vendor and regulators.

3.4.3 Data Collection

Data was collected in two way- Primary and Secondary.

The source of primary data collection was semi-structured interviews with key persons/ decision makers of companies in telecom sector. According to research objective, the primary focus was small players rather than large telecom MNOs in Norway. The data was collected from three small telecom companies and from one large MNO in Norway. According to research proposition (to get to know about regulatory approach as part of external driver in alliance), Norwegian Communications Authority (Nkom) was also under consideration to collect data. I talked with important officials of every company and high decision makers of Regulatory authority.

It took 11 days to manage the interview schedules and to conduct the interviews. In total, eight interviews were taken from the companies and Nkom.

To compare the legislation issued by Norway for creating level playing field for all players; regulatory body of Netherland and Sweden were observed by going through their rules for electronic communications and market as part of a secondary research.

4 Results & Analysis

4.1 Results

First, this chapter will provide an overview of the “raw” data collected from the interviews. An analysis of these results is presented in the subsequent Analysis part.

4.1.1 Interview Data

In total, eight interviews were conducted from four different companies in telecom sector and from the telecom regulator in Norway. Interview questions were asked in accordance to the interview guide, designed to answer the research question in a logical way. Under a single case, multiple units like both telecom players (MNOs, MVNOs and Vendor) and telecom regulatory authority were analysed in this research. The unit of analysis are shown in a pictorial way below-

Unit of Analysis

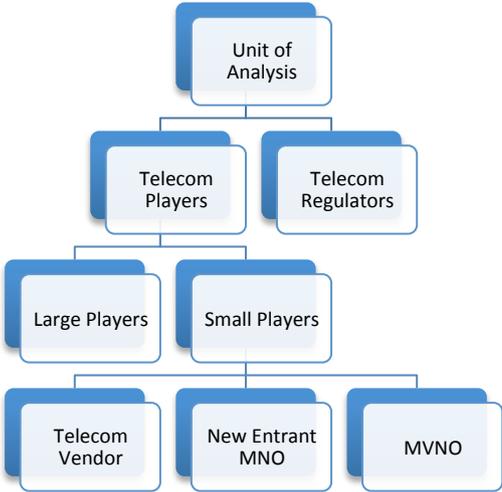


Figure 5 : Multiple Unit of Analysis 1

Figure-5 shows the two units of analysis- Telecom Players and Telecom Regulators. First unit has 2 sub units: small players and large player. In the group, small to medium players, we

find the telecommunication equipment vendor, MVNO and a new entrant MNO in the Norwegian market. The larger player unit comprises one market dominating MNO.

A separate set of guiding questions was followed for both the telecom players and the regulators while conducting the semi-structured interviews with personals of each group. The questions are almost similar for the telecom companies with slight difference based on the individual's market position and operations. The details of these guides will be found in the appendix. In this section, the aggregated results from each unit are presented.

The Table-2 shows the interviewees from first Unit-1:

Company Name	Interviewee Position	Established year
Cloudberry Mobile	CEO & CTO	2012
NexGentel As	Director, Product & Projects	2003
Ice.net	CEO	2003
Telenor Norway	Business Specialist	1977

[Table 2 Interviewees of Smaller Players in Telecom](#)

According to interview and secondary data from website, companies' description along with their operations is discussed below. The motivation behind choosing the first three companies is that these are comparatively smaller players than the large MNO. They are like new entrant in the market with an innovative product, idea in the emergent telecom industry. In addition, large MNO like Telenor was also in choice as part of the analysis of large player's segment. Though, the main analysis has been focused on the interest of small players in telecom finding the way they would be empowered, the large MNO Telenor was also included to represent the large player's view regarding strategic alliance.

4.1.2 Details of Interviewee Companies

Cloudberry Mobile

Cloudberry Mobile is a service provider of indoor mobile coverage and capacity for mobile operators (MNOs) and their customers like landowners, enterprises, public services and

consumers. At present, customers and consumers demand high quality solution. The company was formed in 2012 with the purpose of improving indoor mobile network coverage. In 2013 Cloudberry entered into a **strategic agreement** with Cisco to use their small cell technology¹²¹³. In exchange of one macro cell, setting up a few small cells can improve the network in congested area like office buildings and densely populated area.

The Cloudberry Mobile team consists of professionals with experience in the Scandinavian mobile industry. They are experienced in working with large operators in telecom industry and in building and operating small cells and mobile services. This experience led them to form a new company to provide to the consumer good capacity and coverage of network in areas where the large MNOs don't.

NextGenTel

NextGenTel and **Telio**, were two companies that merged in 1st January 2015 and came into force as NextGenTel. Before merging they run their operation under the umbrella of the NextGenTel brand. It operates telecom business in Norway, Denmark, Switzerland and Netherlands. **NextGenTel** used to provide fixed and mobile Internet communication services to consumers and business enterprises in the Norwegian market. The range of services covered –access to independent broadband, internet, Voice Over Internet Protocol (VOIP), mobile and TV. **Telio** was one of the pioneers in the Norwegian VoIP market with rapid growth after the introduction of VoIP services in 2004. The company was listed in Oslo Stock exchange in June 2006. 76 percent of company revenues were generated in Norway.

Currently, after merging as a single company, **NextGenTel** is providing the same what two performed. The main activities of NextGenTel are described in Figure-6 by pictorial presentation.

¹² <http://cloudberrymobile.com/en/about-us/the-company>

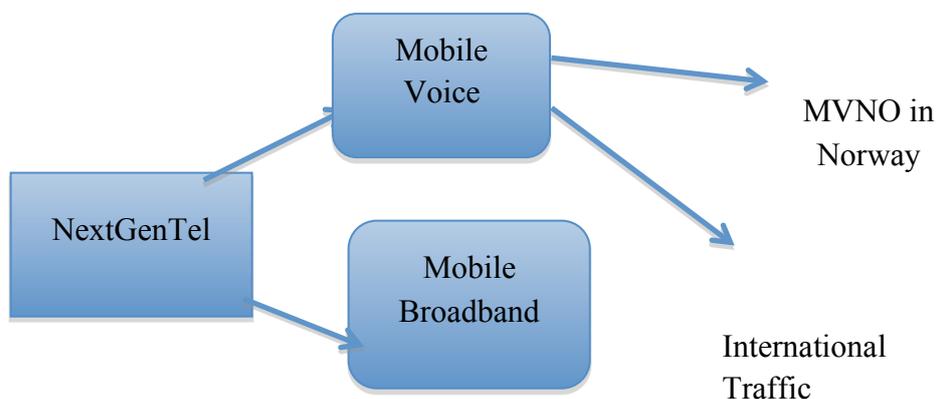


Figure 6 Activities of NextGenTel

NextGenTel has focused on the Mobile broadband and Mobile voice call in Norway and roaming mobile service internationally. The company also provides VoIP telephone services to the office and residential areas. However in current times, VoIP market is globally declining. Therefore their main focus is on Mobile services especially in international traffic for the users who are abroad and want to use roaming SIM to connect. The company has not its own licensed access to network and it uses the access network infrastructure of TeliaSonera. (TeliaSonera is a big player in Sweden and Finland. It started its operation in Norway as a virtual operator, later it acquired lot of market share and bought Netcom on 2006. It also bought the virtual network operator “Chess Communication” on 2008. (TeliaSonera)) Therefore, in this perspective of renting infrastructure from large MNO, NextGenTel can be referred to as a MVNO. In addition to the basic telecom services, NextGenTel also develops mobile application based services in accordance to the current market demand.

Ice.net

Ice.net started their operations in Norway as a licensed mobile broadband operator. It is the sister organization of Net1 which performs business in Norway, Sweden and Denmark. Their target is to provide broadband internet services all over Norway not only in central areas but also in rural areas. It was established in 2003 with a vision to provide broadband services across Scandinavia. Currently, this company has a coverage rate of 75 percent in Norway up to 12 mile off the coast. The company delivers a modern broadband connection quality service to customers all over Norway, with focus on the populations that previously had poor or limited network access.

In December 2014, ICE acquired free spectrum and started operating as a licensed Mobile Broadband Network Operator in Norway. This license was the step that let the company reach the target of spreading mobile Internet all over Norway.

Gradually, they expanded the area of service and have earned profits, which enabled them to acquire the mobile network operator Network Norway in mid-2015. Together with the infrastructure of “Network Norway”, Ice.net has started mobile voice service along with previous broadband service as a complete MNO like Telenor and NetCom.

Telenor Norway

Telenor’s wholly owned mobile operation in Norway is names as Telenor Norway. It is Norway’s leading telecommunications operator. Telenor provides fixed and mobile telephony, broadband and data communication services for residential and business customers, as well as a broad range of wholesale services to comparatively smaller players like less dominating MNOs and MVNOs. They provide major contributions to research and innovation in Norway. Small innovative companies work with Telenor Norway by providing product and solution support.

Regulators

We are interested in studying the role of the regulatory body in the telecom industry, as mentioned in proposition-2. The regulatory body in Norway is the National Communication Authority, known as Nkom. They are responsible for ensuring fair competition in market. The interviewees from Nkom is listed in following Table-

Name	Department	Position
Bjørn Erik Eskedal	Network Department	Assistant Director
Randi Heirung	Frequency Management Department	Senior Advisor
Kenneth Olsen	Service Markets Department	Chief Advisor

Table 3 Interviewee from Nkom

The topic of these interviewes were the regulation, directives, laws issued or published by Nkom that can create opportunity for less dominating operators as well as a level playing field

for all players. Most of the answers from them were covered by the regulations of “The Electronic Communications Act” and “Decision on designation undertakings with significant market power and imposing specific obligations “, these will be analysed in the next section.

4.2 Analysis

In this chapter, the results of the study will be analyzed, by how they connect to each proposition. The evidential support, for or against each proposition, is weighed and considered. Therefore, let us briefly review the research question and proposition before proceeding to analysis.

Research Question:

How can small players form strategic alliances with large players in telecom that brings business advantage for all parties in alliance?

Propositions:

1. Internal resources (financial resources & product innovation) are important internal drivers for small players while forming strategic alliances with large players.
2. External drivers (value network, consumers and regulators) are important for small players while forming alliance with large players in telecom
3. The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

4.2.1 Internal Resource to achieve competitive advantage

When an organization can properly utilize its internal resources, it can achieve competitive advantage in business that is significant for empowerment of the organization. Competitive advantage is a business concept describing attributes that allows an organism to outperform its competitors (Porter M. , 1980).

Resource Based Theory analyses the internal resources of an organization to identify the strength and weakness. In this research examining the internal resources is a useful parameter to identify the drivers of strategic alliance between large and small players in telecommunication sector.

4.2.1.1 Company Analysis based on Resource Based View

The internal resources of all three small companies have been analyzed here to discover their strength and weakness. The analysis of large players point of view shows which internal resources of small players attract them to form alliance or collaboration with them (small players). According to Resource based view (RBV) the more a firm's resources are defined by imperfect mobility, imperfect imitability, and imperfect substitutability more it's product becomes valuable (Barney J. B., 1995) (Rumelt, 1984). The data are analyzed according to VRIN model: Valuable, Rare, Inimitable and Non-substitutable.

Valuable: The product must be a source of greater value in terms of relative costs and benefits than similar resources in competing firms. (Barney J. , 1991)

The product of **Cloudberry Mobile** can improve indoor coverage and capacity that leads to increase customer satisfaction by improving voice quality. According to interviewees of this company the quality of broadband connections in Europe is good and European enterprises are increasingly deploying mobile broadband all over. The small cells solutions is a good solution for consumers and for the smaller enterprises who are not satisfied with current service. They also mentioned that approximately 30% of UK and 20% Norwegian users are not satisfied with the services from current MNOs. MNOs own pretty good Macro network but this is 30/40 years old. Deploying new technology like "Femtocell" can satisfy more customers.

NextGenTel is a Virtual Network Operator and their focus on market is mobile voice and mobile broadband (presented in figure-4.2). In addition they have VoIP services though this VoIP market is declining in all over the world, as consumers prefer to have mobile devices rather than having fixed VoIP telephone. To reach more customers they are offering very low tariffs compared to the other service providers. The previous VoIP subscribers (21,000 in Norway, according to interviewee) have now turned to mobile subscribers, and due to the low cost they have not changed brand.

In addition to providing voice and data services, this company also provides mobile application based services named **unified communication services** for the business client. With the emerging development of telecommunication sector, mobile application based services has become very demandable and trendy to the consumers. It can help customers to operate several applications in the same platform. Currently, NextGenTel is investing more in innovation. They are planning to establish their own intelligent business node product development. This helps the company to create more **product innovation** towards achieving competitive advantage over competitors.

Ice.net was started in Norway as a licensed mobile and fixed broadband service provider. They did not launch mobile voice services at that starting period. However, they covered the remote coastal and rural area with their network for providing broadband services where the large players like Telenor and Netcom still had not reached. Gradually they expanded their business from broadband operators to fully service Mobile Network Operator by owing another company “Network Norway”. Due to a substantial investment and initial funding from their sister brand Net1 they could operate with empowerment and gained competitive advantage.

Rarity, In-imitability and Non-substitutability

Rareness implies that the resource must be rare in the sense that it is uncommon relative to demand for its use or what it produces (Barney J. , 1991). If only one firm controls a valuable resource it would be a source of a competitive advantage for that firm (Barney J. , 1991). This advantage could be sustainable if competitors are not able to **imitate** this strategic asset perfectly (Barney J. , 1986). Despite of having non-imitable, rare and valuable resources, one firm can loose it’s competitive advantage if competitors are able to counter the firm’s value-creating strategy with a **substitute** (Barney J. , 1986).

None of the companies in this case study research offers service that is scarce in market in a large extent. Though few of those have something uncommon like **Cloudberry Mobile** is the only one provider in Norway, which provides service in small cell technology. This company can experience the first mover advantage. However, any large or small telecom vendor can

come into force with this type of service anytime in market. In terms of in-imitability and non-substitutability, there is no product or service till now in this case study that can be claimed as imperfectly imitable and imperfectly substitutable.

In **NextGenTel** case, it is clear that MVNO business is nothing new in market. The only rarity might be their comparatively lower tariff in mobile voice call and Internet packages. The CTO mentioned about their research activities to introduce more innovative and diversified mobile application based product near future. Product innovation strategy can ensure the rarity, in-imitability and non-substitutability in some extent if the product becomes technologically demandable or if it is patentable. “Today’s Consumers believe in diversifying services and they don’t worry about the service provider’s name. They think of coverage, network and new application. Once in a time, when only Telenor exists in monopoly market, consumers of that period also grew up with that monopoly mind-set. The situation has changed and only innovation can ensure the non-imitability of product by competitors ”. ____ Said the Director of Product & Projects at NextGenTel.

For **Ice.net**, the rarity can be analysed based on their broadband expansion to remote areas. Their capability is to reach more customers with better service (high speed internet) to the areas where major operators still have not reached. However, the Internet service is not inimitable and non-substitutable; lot of service providers are doing the same and large MNO like Telenor has resources to reach the remote area.

The representative from **Telenor Norway** was questioned about which resource and capability of small players make a market dominant player interested to make collaboration, and what they consider to be the most important value in small companies with regards to collaboration. The reply was product diversification, innovation and solution. As a powerful MNO in the industry, Telenor does not need financial support from the small telecom companies; what they consider is the innovativeness of the product offered by those small vendors. The interviewee mentioned about two small telecom vendors (Uruguay based company “Leib ICT” ¹⁴ and Canada based company Mobileum ¹⁵) with whom Telenor is operator-vendor contract. Both of these two companies have focused on the innovative solution with quality product at a reasonable price. 99 patented innovations of the company Mobileum proves it’s eagerness to product innovation.

¹⁴ <http://www.leibict.com/index.html>

¹⁵ <http://www.mobileum.com/about.php>

The interviewee from Telenor Norway also mentioned that when they consider expanding their market in the home country or abroad, most of the times they make alliance with the equally empowered telecom players in terms of market share, financial resource and market dominance.

4.2.1.2 Common scarce internal resource for small players

Most of the interviewees from comparatively small telecom players expressed lack of financial resources as the biggest hurdle in running business operation. This creates hindrance in initial operation, launching new product, market expansion, reaching target customer. They also mentioned that every vendor and buyer evaluate profit and look for established partners to make alliance. All of these hindrances make new comers' position weak in compare with competitors. Large players work on the principle that everything are not invented,. They observe the market and most of the time they can manufacture the product that was originally the small player's idea. Despite of having innovative ideas, the small companies struggle more to move their ideas to business.

Based on above analysis - The small players like Cloudberry mobile's competitive advantage is their first mover advantage. However that is not enough to achieve competitive advantage, as they are not financially capable to move forward with their product. NextGenTel as a small to medium telecom virtual network operators empower themselves by focusing on innovation. Ice.net is good example how a strong financial resource increases a company's capability. Because of initial funding and investment, Ice was able to win on spectrum auction organized by Nkom. Within very short time, Ice.net has expanded its area of operation from mobile and fixed broadband operator to full MNO. From Telenor perspective, the most demandable thing is the product innovation.

Therefore the above discussion guide us to the 1st proposition-

Internal resources (financial resources & product innovation) are important internal drivers for small players while forming strategic alliances with large players.

Internal resource can assist small operators to find their strength in negotiation with large operators while making alliance. But, this is not the only indicator that can define the drivers

in strategic alliance. According to (Wernerfelt, 1984), internal analysis be coupled with the external analysis in order for the firm to develop a much more sound strategy. Therefore, in next section, I will analysis the external driver of strategic alliance and the business advantage of both (large and comparatively small) parties in accordance with the interview data and theory.

4.2.2 Analysis of External Drivers: Value Network, Consumers, Regulators

Alliances between different players in the industry are a part of their business strategy towards gaining competitive advantage. Six Forces model (Competition, New Entrants, Consumers/End users, Suppliers, Substitutes and Complementary Products) supports alliance as a strategic position of firm's in a particular market place.

4.2.2.1 Analysis of Value Network and “Six Forces Model”

Analysis of value chain within firm and value network within industry by players is a significant step prior to form alliance in telecom; specially for small players as they need to know in which way they can enter into the large player's value network for providing services (Peppard & Rylander, 2006). The traditional value chain of Mobile Network Operator are presented below:



Figure 7 : Traditional Value Chain of Mobile Network Operator (Peppard & Rylander, 2006)

Currently, Mobile operators have capabilities to perform all of the steps in above figure under own organizational roof. However, the ability to offer innovative products to customers and end users may be limited by the capacity of core network or by the need to avoid using of same equipment in several purposes for several departments. This is why, MNOs fragments the work, giving access to MVNO for using their infrastructure and for some extent takes service from vendors and other service providers. (Peppard & Rylander, 2006)

Telenor Norway utilize services from small innovative companies as well as having their own infrastructure and technical service from large players like Huawei Technologies, Ericsson. Therefore, small vendors like Cloudberry Mobile can have opportunity working as a small cell solution provider of Telenor Norway. NextGenTel is a MVNO, but it can be a content provider (Mobile based application) with their innovative product to large player like Telenor Norway. However, for small players it is challenging to get connect with large players because there are many **substitute** products in the industry. Entering the market with small innovative solutions in telecom sector is not as hard as entering the market as a full MNO. A MNO needs to acquire spectrum, which is very costly. Acquiring a licence as a mobile network is also demanding. With an innovative idea, some expat partners and initial funding, an entrepreneurial telecom company can however enter the market. The **Entry barrier** is low for small players, while higher for the MNOs due to the costly process of gaining spectrum.

.The power of **Suppliers** depends on what they are producing based on customers' need, how many suppliers are already in market with same solution and costs. Regarding incumbent **Suppliers** in the telecom industry, the most important challenge, according to Cloudberry, is exclusivity contracts from powerful suppliers, raising switching costs for the customers. That's why current MNOs are kind of bound to the supplier for taking service. So, small vendors like Cloudberry Mobile cannot get access to enter MNOs' value network as a Network Equipment supplier (1st step of Figure- 4.) Vendor. However, in the case when many suppliers have the same solution an operators can have contracts with several suppliers; this An example is MVNO that buys equipment and network support from several vendors (TDC in Denmark, Xconnect) in different countries.

Competition can take place within value network in the industry in terms of price discounting (cost leadership strategy), introduction of new services/ products. (innovation strategy), improvement of service quality(customer-orientation strategy) etc. High competition between rivals can stifle an industry's profitability. According to an interviewee from the small segments, competition environment is not healthy for small players in the current telecom industry, as it creates hindrance to small players entering into value networks of large players. **Rivalry among players:** MNOs use to take service from large vendors/ service providers in telecom because of their brand value. This is a practice seen worldwide. According to the CEO of Cloudberry Mobile that the biggest vendors in telecom industry like Huawei, Ericsson, Alcatel-Lucent have long term service agreement with dominating MNOs like Telenor and

Netcom. These large and powerful vendors try to create obstacles for new players. MNOs are also happy with this set-up as they have the services from established vendors in an agreed price.

Consumers or End users are not loyal because of the low switching cost; they move in different MVNOs and they change the brand whenever they feel a new one is cheaper or provide new services. It is expensive for MVNOs when customers change the mobile SIM (Subscriber Identity Module) more often. This is the reason, NextGenTel, while operating as MVNO in Norway offers low price mobile voice and data connection to compete with MNOs. Currently they also have focused to implement mobile application based services as part to attract more young end users. “In Norway, NextGenTel has 100,000 subscribers from MVNO, mobile broadband and VoIP businesses. As current VoIP market is declining we have focused on other diversified over the top services in telecom sector to reach more customers.” Said the Director of Product & Projects at NextGenTel

Complementors as the sixth force explain the reasoning behind strategic alliances. It is known as the impact of related products and services already in the market. From analysis of telecom industry, it is evident that large players show their interest to build alliance with companies who have future possibility in industry. What they have with small players is nothing but service agreement when they outsourced service.

Service Outsourcing to avoid alliance: Large operators and vendors always set the companies' financial budget to cut down the cost. To cut costs both vendor and operator involve third party when support is needed. Huawei Technologies in Europe follows this approach to expand in market. In this way, large players avoid alliance and developing new products in-house; the only cost in business for them is marketing and billing. Therefore, small equipment vendor like Cloudberry mobile struggle to sustain long in business. Even though if a new company can sustain for few years, they are not able to expand the business in wide manner.

There are some internal and external factors those are not assisting small innovative companies to stand up. Steps from Regulatory body could change the situation. Also the mutual business advantage for both parties is important in making alliance. This will be discussed in later section, after discussing struggles faced by the small operators.

4.2.2.2 Frustration of small players

Innovations are neglected: This is a challenge described by many of the smaller companies. The CEO of Cloudberry mentioned about the practice in i“On the Innovation side, so much is happening but when we follow the timeline, the innovation goes on, and see how these operators are utilizing this new innovation. It is found that there is a big gap between innovation and its implemented timeline. So innovation is not reflected to the operations of major players. I think, it’s pretty obvious, that the operators are actually stopping innovation, are stopping small companies. Because they are not accepting or starting to use those products and services that are being developed by small players. Because they are concerned in keeping control, keeping market share and leading position. They are defending themselves and one of the ways they are defending themselves stopping new initiatives.”

MVNOs are dying: MVNOs concept came to market actually to give chance to entity that has not enough money to acquire spectrum license for starting telecom business like a MNO. Instead they can come into agreement with MNOs to rent their spectrum. Nowadays, this business has no future in Europe except if they change focus of the business from basic telecom service (voice and internet) to diversified mobile application based product and services. According to the interviewees of a small telecom vendor “MVNOs are almost dying as the margins are getting smaller and smaller and the market is completely controlled in wholesale level by MNOs. Even dominating MNOs have their own MVNO to capture more customers by the using the existing brand name. Telenor has 60%-70% market share in MVNOs so it means they have controlled over pricing and services and they decide everything that is going to happen. Telenor is regulated in a sense that they are the key market player so the regulatory board actually defines the prices they can take.”

Moreover, Small players have to face enormous struggles in market despite of having innovative idea and proficient manpower. Since the resources they own are not enough to establish compatibility and empowerment for them in industry; regulators as an external drivers should come into force to create more opportunities also to ensure level playing field in business.

4.2.3 Regulatory Aspect as driver of Strategic Alliance

4.2.3.1 Opinion of Interviewee companies about Telecom Regulator in Norway

The goal of Telecom regulator is to creating level playing fields to establish effective competition, helping to grow market by issuing new licenses and authorizing services, increasing network access and interconnection between telecom players. Nkom plays role to establish these goals in Norwegian telecom market. To understand their efforts to facilitate the survival of the less dominating player both small companies and Nkom were interviewed. Following discussion is small players' opinion about regulator-

Questions about Regulator's Performance: Most of the interviewees of smaller companies feel that current telecom regulation is not in accordance with market need. They claim that there is a big gap between what the regulators are doing for the end-users and what they are doing for the industry. In Norway, Regulators are not working together with industry to ensure fair competition and to form alliance between unequally empowered companies. The regulations are not reflecting the way that can make current market more effective, innovative and competitive. Regulators are more into theoretical approach for developing legislations, directives. These regulations have not been revised much since their issuing period.

Regulatory aspect of free spectrum: In Sweden and Netherland Telecom Regulators have opened a free spectrum in the range 1800 MHz, to all telecom operators for creating fair competition. The less empowered and smaller companies (Cloudberry Mobile, NextGenTel) would have preferred the same practice in Norway, however the large players would not. As ICE.NET is becoming stronger in terms of their financial power and expanded market, they are also more negative to free spectrum, like the dominant player Telenor. The interviewee companies (Small) feel that the way regulators handle the frequency is in very rigid situation where innovation is not taking place. If regulators would impose a regulation for using a specific range of frequency by all players in market without any fee then that would open door to all players in market as well as would enhance the empowerment of small players. Therefore, Nkom as regulator could impose regulations as same as other European countries to create opportunities for all kind of players.

Price discrimination:

MVNOs rent or buy infrastructures and services from MNOs to serve their own users. There are different types of MVNOs in market and their activities differ in accordance with their types. Nkom has regulation that obliges MNOs to share their infrastructure with MVNO. Some MVNOs purchase wholesale mobile voice and data services from MNOs and resell to end-users. According to the experience of the interviewee companies, MNOs set different prices for their own sale and selling to MVNOs. As a result, MVNOs face price discrimination and can not reach more consumers in market. Therefore, Nkom should take a move to eradicate this discrimination by proper implementation of the existing regulations.

The interview experience proves that comparatively small players are not much satisfied with the performance of Nkom. Let's see What Nkom has said about the issued regulation act for less dominating players' empowerment.

4.2.3.2 Regulator's Opinion regarding fare competition

The interviewees from telecom regulator segment were asked about the regulations issued by Nkom for ensuring fare competition to all players in telecom market and also about their activities for empowering new entrant or small player in market.

The following section is written based on the interviewee experience with regulators and also based on the secondary research analyzing the regulations issued by Nkom. (Nkom)

“The regulatory objective is to ensure that all providers of services compete on the same terms. In some subsidiary markets, it is necessary to provide stimulation so that small operators can develop their competitiveness.” - said Kenneth Olsen, Chief Advisor, Service Markets Department, Nkom. They were asked about regulatory move to achieve their objectives. They specifically mentioned about the Electronic Communication Act and SMP Obligations (Significant Market Power) issued by Nkom for establishing fare competition;

1. Decision on designating undertakings with Significant Market Power (SMP) and imposing specific obligations in the market for access and call origination on public mobile telephone networks (Shortly named as “SMP Obligations”).
2. The Electronic Communication Act (Ecom), 2003

SMP Obligations: On 23 January 2006, the Norwegian Post and Telecommunications

Authority (NPT) (currently named as Nkom) issued a decision to designate Telenor ASA as a provider with significant market power (SMP) in the wholesale market for access and call origination on public mobile telephone networks. Since NPT has identified a number of potential competition problems within the market for access and call origination on public mobile telephone networks at that time. Telenor used to deny the proposal by other small operators who wants to get access to their infrastructure. This denial of access was one of the main obstacles created by large operators in telecom market. Another issues like delaying in decision-making, discrimination on price and setting excessive pricing were common behavior by dominant operators at early 2000. (Nkom-SMP). In this regard, Telenor was declared as SMP for eradicating the competition problems associated with single market dominance.

The Electronic Communication Act (Ecom)

“The purpose of the Act is to secure good, reasonably priced and future-oriented electronic communications services for the users throughout the country through efficient use of society’s resources by facilitating sustainable competition, as well as fostering industrial development and innovation.” (Nkom-Laws & Regulations)

Ecom and SMP Regulations: Ecom Act is the base of SMPA obligations. According to section-4 of the Act, Nkom may order a provider with significant market power to meet any reasonable request to enter into or amend an agreement on access to electronic communications networks and services. (Nkom-Laws & Regulations)

The objective of declaring SMP is to facilitate long-term, infrastructure-based competition in telecom market to the greatest degree possible. Besides issuing **SMP** regulations, Nkom also encourages competition in order to ensure that users throughout the country have access to good quality, affordable and future-oriented mobile services, which is one of the objectives of the **Ecom** Regulations.

In order to achieve the goal of Ecom Act, Regulators ensure the sufficient input factors at wholesale level at the right price. That’s why Telenor must meet all reasonable requests of other operators in terms of access; call origination on its mobile network, national roaming¹⁶,

¹⁶ National roaming refers to an agreement among operators to use each other’s networks to provide services in geographic areas where they have no coverage. Source: <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/3242>

co-location¹⁷ and access for mobile virtual network operators (MVNOs).

According to Ecom Act, a SMP declared company would not discriminate the companies who need access to its network. (Nkom-Laws & Regulations). The core focus of Ecom Act towards ensuring fair competition in telecom industry is described in following section-

a. Non-discrimination. An obligation was imposed on Telenor not to discriminate with regard to price or any other terms for access to national roaming, MVNO agreements and co-location. This means a large operator will not make any discrimination to other external operation with its own operation.

b. Structural and Account separation: An obligation was imposed on Telenor to devise an accounting separation system between the network operations and the internal service provider operations of its mobile business in Norway. The accounting separation shall form a basis for monitoring compliance with the prohibition of price discrimination against MVNO.

c. Price and Account control: This obligation is to control the situation when Telenor set unbalanced price for MVNOs and national roaming partners. The authority will monitor the price as it is in accordance with the regulation and also SMP operator is bound to maintained database of all account.

4.2.3.3 Gap between Theoretical Laws and Practice

Ecom act is the controlling process for Telenor during agreement with small player MVNO and also in national roaming agreement with other telecom operators. Interviewees of small players has some critic regarding Pricing issue as Telenor set different price for their own sale and for external sale to MVNOs. Despite of these laws and regulations, still discrimination exists and industry is not approachable to the smaller players.

Nkom officials were also asked about spectrum management regulations and the reply resembled that the way Nkom issuing frequency is common like other regulators of different countries. Frequency allocation process varies on services offered by operators and service providers. Nkom arranges auction to provide license spectrum for operating Mobile network and provides frequency approval for operating broadcasting media television, radio, satellite television, maritime equipment and provides free spectrum to Wi-Fi service provider. There is no regulation for offering license free spectrum to all players in telecom like few other

¹⁷ A **colocation centre** is a type of data centre where equipment, space, and bandwidth are available for rental to retail customers. Source:

neighboring countries Netherland, Sweden. This free spectrum was a common demand from the interviewees of smaller players segment.

4.2.3.4 International Best Practices Regulations in terms of free spectrum

The Swedish Post and Telecom Authority shortly named as PTS opened a small slot of paired spectrum for license free use starting on Oct 1st 2012. The step was taken for meeting up the market demand and to create opportunity for small companies. Later, same initiative has taken in UK and Netherlands followed by Sweden. PTS expects new business in shopping malls, office campus areas, consumer installations, mobile-to-mobile applications, and in research and development. The main target of opening up this expensive spectrum free as the small and less dominant players would be empowered under their own brand (Nilson M. , 2012).

This practice like declaring free spectrum in 3G or LTE band can create opportunity for the players who are in market to provide good indoor coverage for telecom voice services, who are virtual network operators (MVNOs) and who are comparatively smaller MNOs in industry. This common platform opportunity would empower these small players by exploring new sector and earning revenue. From the interviewee companies ClouBerry Mobile and NextGenTel urge for this free spectrum regulation Norway by Regulators for creating opportunity as they would flourish their innovativeness smoothly.

All the analysis leads us to Proposition-2

Proposition 2: External drivers (value network, consumers and regulators) are important for small players while forming alliance with large players in telecom.

4.2.4 Business advantage from allies partner in strategic alliance

A firm's ability to earn a rate of profit in excess of its cost of capital depends upon two factors: the attractiveness of the industry in which it is located, and its establishment of competitive advantage over rivals (Michael, 1999). According to resource-based view, a firm can achieve competitive advantage when resources are heterogeneously distributed and cannot be transferred without cost. (Barney J. , 1991) When resource cannot be transferred without expense, there is a possibility for industry players to form alliance where they have

interest. Therefore if companies in alliance have resources that are valuable, rare, inimitable and non-substitutable, they can share their resources for mutual benefit.

The strategic alliances studied in this research indicates a win-win position for all parties in the alliances in terms of their capabilities, better than if they had chosen a merger or acquisition strategy. Here, the business advantage means the interest that can help one company to increase profitability through collaboration with other. Most importantly when the alliance takes place between a large and a small player. As the large players are already set in market, so the challenge is for the small players to prove how they can create value to the bigger.

The interview data also reflects upon this dynamism between large and small players in telecom market. Examination of the small players' strength, weakness in internally and externally directed the researcher to analyse this mutual benefit in alliance. This will be the analysis of third proposition in this research-

The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

4.2.4.1 Exploring the business advantage from alliance

Cost Efficiency: Interviewees from the small company segment were asked about the interest of large players forming alliance with them. Most of them had the same answer: that big operators invest in small companies in order to follow the development of the innovative product and see if they can utilize something in future. Large operators are concerned about economy rather than innovation. Hence, they outsource innovative products from comparatively small players. "20 years back, all the big operators had a R&D (Research & Development) department, innovative groups in organization. Telenor Norway has 300 people at Kjeller Innovation and their only job was to create new and innovative solution. When the Chief Financial Operator (CFO) needed to deliver economic result with less expense in budget almost 3000 researchers were sacked from R&D department."- Said CEO of Cloudberry Mobile. It indicates that large operators are cutting the innovation budget to show profit with less expense. Still most of the countries from South Asia (Bangladesh, India, Pakistan) have not started to upgrade telecommunications technology 3G and 4G. So, this

part of the world is yet not that eager for OTT services, but they still focus on basic voice and Internet services. Telenor as a large MNO prefers to expand business in those countries. This is economical for Telenor, as they are earning lot of profit with their same experience from home country Norway. So, innovations have become rigid for large players.

In this scenario, if Telenor and other large MNOs make alliance with small companies, they can acquire more resource that must enable all parties to introduce **value**-creating strategy by either outperforming its competitors or reduce its own weakness. MNOS can share some workload to small players and small players can assist MNO to reach more customer segment by their (small players) innovative solution.

Otherwise, it's hard to recover the \$386 billion loose from Voice and Internet services in telecom sector up to 2018, which has started from the year 2012. Because market will earn more from the VoIP application based services like Skype, WhatsApp and others. (Heinrich, 2014). According to Ovum, consumer use of Over the Top (OTT) VoIP services will grow at a compounded annual rate of 20% between 2012 and 2018 to reach 1.7 trillion minutes. (Heinrich, 2014). Therefore, alliance between large and small players is needed to balance the consumers demand with technological advancement satisfy more consumers. It can increase profitability for both parties in alliance.

Managing innovation in changed market:

The growth in global demand (Over the top VoIP) is driven by a number of factors including improvements in the availability of service, high-speed broadband connection, the growing capability and affordability of wireless devices such as smartphones and tablets, and continued dominance of social media. “The impact seen today of OTT VoIP services on the traditional revenue streams of telecoms is just the tip of the iceberg”, says Sandy Shen, a research director for Gartner based in Shanghai. (Heinrich, 2014). Therefore, making alliance with small players can support MNOs to satisfy customer by good network coverage. **Cloudberry Mobile** supports MNOS by providing network-improving equipment without CAPEX and OPEX. CAPEX means capital expenditure; a company to acquire or upgrade physical resources such as Network Equipment uses this expense. OPEX is operational Expenditure needs to operate the physical resources. ¹⁸So, Operators can have economic

¹⁸ <http://www.investopedia.com/terms/c/capitalexpenditure.asp>

benefit, as they do need to invest for buying equipment as well as no operational cost. **NextGenTel** has focused on mobile application based business service in addition to their MVNO business. As small players can support MNOs to reach more customers by providing good network coverage and innovative services, so MNOs can increase profitability.

The common struggles for small players are their less sustainability in business what is depicted from interview experience with small players of this case. Some of the companies are planning to stop operation as an individual entity or to merge by other companies because of not getting much customer from Norwegian telecom market. According to their view, Norwegian Telecom industry is self sustaining and not supportive for the small players. In contrary to the Norwegian market, **Cloudberry Mobile** has global demand so they are in alliance with other MNOs in Serbia, Sweden and Denmark. After providing test service to Telenor Serbia from June 15 to August, 2014, Cloudberry Mobile got very positive feedback and Telenor Serbia extended the contact with them for having small cell service. More the small players would develop innovative solution more they would get empowerment in business. This can increase their sustainability in business.

The above discussion leads to the proposition-3

The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

5 Conclusion & Recommendation

The goal of this study was to examine the drivers work behind forming strategic alliance between unequally powered players in telecom sector and to discover the business advantage for both parties in alliance that can attract larger players to form alliances with small players. In this regard, the research question was selected- “How can small players form strategic alliance with large players in telecom that brings business advantage for all parties in alliance?” I attempted to answer this question by making case study of comparatively small players and a large MNO in telecom sector. A number of propositions were posited and subsequently explored by examining the information collected during the study. These findings can be summarized as follows:

5.1 Findings

Proposition 1: Internal resources (financial resource & product innovation) are important internal drivers for small players while forming strategic alliances with large players.

Findings: Primary data from Interviewee companies shows that every interviewee believes that organizational skill, financial strength, innovation, R&D (research and development) capabilities to introduce new service are the important internal resources for achieving competitive advantage in business. Specially product innovation can attract more customers and end users that can ensure a stable position for small companies. In addition to product innovation every small company has feelings that lack of financial resources is the main weakness for their business. Small companies can overcome this weakness by reaching more customers in market and forming alliance with established players. Ice.net owned license spectrum from Nkom because of their initial adequate resources. Despite of being a new entrant MNO in industry, they are expanding their coverage area very fast from city to remote places in Norway. They owned another MNO named “ Network Norway” at the mid of year 2015 and started operation as a complete MNO by providing mobile, internet and telecom services as an equal competitor of Telenor and Netcom in Norway.

Contradiction between theory and practical experience from Interviewee Companies:

According to Resource based theory Value is for finding how valuable the product to the local firm (Barney J. , 1991). As an equipment vendor, Cloudberry Mobile provides the services that can improve indoor network capacity and coverage by Femtocell device to MNOS and their customers. Theoretically, the product should seem valuable to the MNOs in Norway like MNOs in Serbia, Denmark as it can create huge value from customers to end-users. In addition, Cloudberry Mobile should have advantage as a first mover. However, in practice, company has not achieved any significant position in Norway. There, this is one of the contradictions in theory and the practical situation.

Proposition 2: External drivers (value network, consumers and regulators) are important for small players while forming alliance with large players in telecom.

Findings: Rivalry created by established telecom vendors is one of the biggest problems for small players to connect with major MNOs. The dominating vendors control the negotiation process in forming alliance because of their strong market power. So, small players like Cloudberry Mobile cannot enter into the value network of MNOs. MNOs also prefer to form business contract with established vendors as they are already set in market and reliable. Even the technology and innovation are in support to small players; they cannot utilize these resources in efficient manner because of lack of their financial resources and control by market players.

Consumers drive the industry with their enormous demand of technology and small players can increase competitive advantage by introducing innovative product to meet up the consumers' demand. By which, they can show their utility to the MNOs to enter into their value network by forming alliance. That's why; NextGenTel is doing lot of researches for introducing diversified services in market to reach target customers.

Regulator can create important impact for the empowerment of small players by issuing new regulation in compatible with emerging telecom market. Current contribution of regulators is a bit backward in accordance with the telecom market from 2005 to 2010. Small players are not satisfied with regulators' activities and they prefer free spectrum regulation by Nkom for providing indoor mobile coverage as same as the regulation issued by the regulators of Sweden, Netherland. When both small and large operators can compete in a same level in

some extent, then a level playing field can establish for all are in competition. Otherwise, only financial resource and innovation can't act for their (small players) empowerment in industry. They may get contract or agreement for providing services to large customers with their internal resources but for forming a win-win alliance regulatory steps must need. Therefore, it can be said that Nkom should opens up radio spectrum as license free to create business opportunity for all players whoever wants.

Contradiction in different unit of analysis:

One of the struggles facing by MVNOs are described in analysis section is that the MNOs do not maintain the same price for internal sale (for own sale) and outer sale (sales to MVNO) in wholesale contract with MVNOs. So, small players in Norway are discriminated by established MNO in terms of price. However, It was found by analyzing regulations that Ecom Act and SMP regulations are issued for eradicating discrimination towards ensuring equal opportunities for all players. Telenor is bound not to discriminate with regard to price or any other terms for access for national roaming. Therefore, what interviewees from small players' segment claimed and what regulators expressed are not similar.

Proposition 3: The business advantage of a strategic alliance for a small player may be profitability and sustainability while the business advantage of a strategic alliance for a large player may be profitability.

Findings: Both large and small players can be benefitted through alliance or collaboration. Specifically, large players can utilize the product innovation of small players that would help them to identify innovative segment in market and satisfy subscribers providing new services. In addition, small players will have their sustainability and profitability in market by expanding business.

The benefit of collaboration was analyzed briefly in "Results and Analysis" part based on the current need of both large and small players in industry. Significant contradiction between theory and data was not found in this part.

A pictorial presentation of most important factors from the findings of three propositions:



Figure 8 : Most important factors from the findings of three proposition

The above figure is the findings of this research in a pictorial way, which shows the most important drivers for forming alliance between large and small players in Telecom. Product innovation and Financial resource are the drivers for internal analysis, Regulatory steps are essential for the empowerment of small players and the alliance output is mutually beneficial to both small and large players in terms of profitability and sustainability.

5.2 Future Research Option

I would like to work more next part of this research assuming a regulatory situation where Nkom would open small slot of paired radio spectrum as license free. When the radio spectrum will be free, that will be free for every operator then how this changed situation would be managed by MNOS. There is the scope of future researches is as follows-

5.2.1 Femtocell base Business Model of Small Cell Technology Operators

In the telecommunications, a **Femtocell** is a small, low-power cellular base station, typically designed for use in a home or small business. Most of the wireless data traffic is generated from indoor or local area locations like shopping malls, arenas, railway stations, trains, subways, hotels and office buildings (Wikipedia-Femtocell). Cloudberry Mobile, a interviewee company in this research, is a start-up company that provides small cell to consumers and enterprises focused on providing better indoor coverage in Norway. When spectrum will be open by regulators, these types of companies may not need to rent spectrum from MNOs in all situations what they are doing now. At that situation, it would be a win-win strategic alliance between large MNOs and small operators (Small Cell Operators, MVNOs etc.) in telecom. Even in a reverse situation MNOs could rent small players' network, radio

spectrum. MNOs also would give authority to small players building femtobased network for their customers through a collaborative business model.

Business Model generally describes how a company makes money by analysing the value proposition, value architecture, and value network and value finance. These main four dimensions form the business model of any sector focused on specific product. Prior to forming collaboration these four dimensions should examine. The most important dimension is value network (Economic Consideration-Value Finance), which will be described in following section.

5.2.2 Economic Consideration in Telecom Business Model

(Al-Debei, El-Haddadeh, & R. Avison, 2008) considers value finance as one of the main dimensions of Business model, which depicts information related to costing, pricing methods, and revenue structure. As business model is a statement of how a firm will make money and sustain its profit stream over time, therefore economic consideration will be the most concerned segment in this future research-

1.Operators (MNOs) are expected to reduce their Capital and Operational Expenditures (CAPEX and OPEX), since a large amount of traffic can be offloaded from the macro (MNOs traditional network) to the femto network. Similarly, smaller operators will deploy the Femtocell by their own so they have to calculate the investment cost (CAPEX) and operational cost to determine their expense in this regard.

Recommendation-1: Cost analysis for both large MNOs and small cell operators in telecom should be considered in analysis.

Revenue stream in business model describes how money generates in business, revenue model and the value customers are willing to pay. In that future probable collaboration, MNOs have to find out their profit by reducing the capital and operational expenditure for indoor coverage and earning revenue from new segment like application based service and Small operators' have to explore the revenue opportunity by expanding business.

Recommendation-2: Increasing of ARPU comparing with per user cost should be identified from the tariff, profit and cost in this collaborative business model.

Appendix

Interview Questions to Telecom Players (Small Innovative service provider, Small to medium Size MVNO)

1. What is your main goal with this company and the position in market?
2. What is the competitive advantage of your services over competitors?
3. What is your experience regarding collaboration with other players in telecom?
4. How do you feel about major struggles in making alliance with large operators?
5. What is your opinion about large players' tendency making contract with established vendors in telecom?
6. Based on the competitive advantage, how alliance with your company can assist large players in terms of their profitability?
7. What level of industry rivalry is your company facing and how company is planning to overcome the rivalry?
8. Is it easy for any telecom players to come up with the same idea like your company in market?
9. How many competing product similar to your product in market?
10. What is the biggest struggle in running business?
11. What do you value the Telecom Regulators' role in Norway for creating level playing field?
12. Based on current change technology, what type of opportunity can come to small cell operators in future? (Specific to Company-A)
13. As a MVNO, what type of business relationship do you have MNOs? (Specific to Company-B)

14. As a new licensed mobile network in Norway, in which market segment you have most focus to compete with other gigantic MNOs like Telenor, Netcom etc? (Specific to Company C)

15. Do you have business alliance with telecom players outside Norway?

16. Few European Countries' Regulators have opened the radio spectrum for all players in Telecom; what is your opinion regarding this issue in Nkom (Norwegian Communication Authority)

17. Why small but innovative players are out of market despite of having diversified idea?

18. Why MVNOs are almost dying? How do MVNOs can sustain in completion? (To company C)

Interview questions to Nkom Officials:

1. What regulations and directives have been issued by Nkom to provide level playing field for all players in Norway?

2. What is Nkom's approach to regulate the market dominating players in telecom to control their monopolistic behavior?

3. How Nkom controls the price set by MNOs for providing national roaming to other players?

4. Like Swedish and Netherland Telecom Regulator, has Nkom any plan to declare few range of radio spectrum fre for all players

Interview Questions To Telenor

1. What do you consider while taking service from small or entrepreneurial service providers?

2. Which capability of entrepreneurial companies attracts a MNO to form collaboration?

3. What is the common challenge for MNOs in recent time?

4. What you are doing for small players in telecom market based on Nkom obligations?

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