



Critical Success Factors of Mobile Virtual Network Operators

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ABSTRACT

"Mobile Virtual Network Operator";(MVNO) is a provider of wireless communications services who doesn't own the wireless network infrastructure. MVNO provide services on the "Mobile Network Operator's";(MNO)'s infrastructure. An MVNO enters into a business agreement with a mobile network operator (MNO) to utilize its unused capacity and provides various services to obtain its portion of market. An MVNO join in an agreement/contract with a mobile network operator (MNO) enabling its unused capacity to provide various services and gain its portion of market. An MVNO may use its own customer service, billing support systems, marketing and sales personnel or it may employ the services of a "mobile virtual network enabler"(MVNE). The Goal of this research/article is to identify and prioritize the "Critical Success Factors" (CSF*) of Mobile Virtual Network Operator (MVNO) in Iran. To touch this goal; most famous MVNO's and their critical success factors from all over the world are main pattern of our viewpoint. For data gathering point of view in this research I have created a questionnaires' with 40 questions, and have used online questionnaire tool in Google website named "Google Drive". For implementing this research; As a sample of statistical society, I have been selected 93/125 senior expertise and managers of different departments of Rightel "The first Iranian 3G Mobile Operator" based on Cochran's formulas. The research's variables are Brand, Distribution System, Innovation, Financial status, Quality of service, Network generation and proper price and tariff as CSF's for implementing MVNO's. In this statistics research questionnaire, Cronbach's α (alpha) is a coefficient of internal consistency and reliability. It is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees. Cronbach's Alpha which is .91 of all of the questionnaire in this research. For validity of questionnaire I asked some of senior managers and university PhD level instructors for analyzing the results of this research we have used one sample T-test method and for more reliability, used 2nd grade sentence test as well. The result of this research was the all mentioned variables are identified as CSF of MVNO's and ranking of CSF's are: 1- Quality of service, 2- Innovation, 3- proper price and tariff, 4- Distribution System, 5- Network generation, 6- Brand, 7- Financial status.

Keyword:

- ✓ Success Factors,
- ✓ Mobile Virtual Network Operator
- ✓ Mobile Network
- ✓ Operators.

*CSF :Critical Success Factors: Critical success factor is the term for an element that is necessary for an organization or project to achieve its mission. It is a critical factor or activity required for ensuring the success of a company or an organization.

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INTRODUCTION

The aim of this study is to implement the research methods of descriptive and classification survey and given effect in the Company's Rightel. The population is about 124 personnel of Rightel that is considered by using Cochran formula from sample size (33) is taken out.

Methodology

Data were collected through questionnaires five-point Likert-type self-made option, which contains 40 questions that is used by software, GoogleDrive. The research variables are "brand", "distribution system", "Innovation", "financial", "quality of service", "Network generation" and "price and property tariffs". Questionnaire's Allowable confirm by experts and senior Rightel's managers and its reliability was estimated 0.91 through Cronbach's alpha for the total Questionnaire. In order to analyze the results of this research t-test was used, as well as to ensure the results of the study, the test was also used binomial. In this study it was found that Research variables affect as the key success factors in setting up mobile virtual network operators in Iran.

The degree of importance and priority as follows:

Service quality, innovation, price and tariff appropriate, distribution system, network generation, brand, financial strength.

Problem Statement Research:

Mobile Network Virtual Operator (MVNO) is a kind of mobile operator that it doesn't have physical features to send voice and data. This type of operator (MVNO) contract with an operator (Mobile Network Operator) (MNO), which has physical features, to transmit voice and data to buy wholesale and then offers these services with their own brand name.

There are many Intelligence ways that a service provider could find new bazaar to catch its portion of market. Researching, Evaluation and marketing so providing and suggesting new services which are applicable and solution to help customers do their work in simplest form. For example USSD codes that generates for Banks and new VAS services which have advantages for both customers and service providers.

There are many parameters for a virtual operator would have the technical and financial success that are basis of Discussion of the project. The reason that researches are most about foreigner's MVNOs is, Iranian Haven't had

enough experience as a MVNO provider until now. Today's mobile operators, generate variety of services offered to its subscribers that welcoming their users is the development of a market for operators and service providers in this area and Subscribers are surprised every day with new titles.

The main objective

Modeled after successful virtual mobile network operators in the world and determining key indicators of success in order to design Launch and development mobile virtual network operator successful is the main objective of this study. As you see in graph No. 1 all critical key factors including distribution system, Brand, Innovation, Financial Power, Quality of service, Network generation, Price and Tariffs are prioritized.

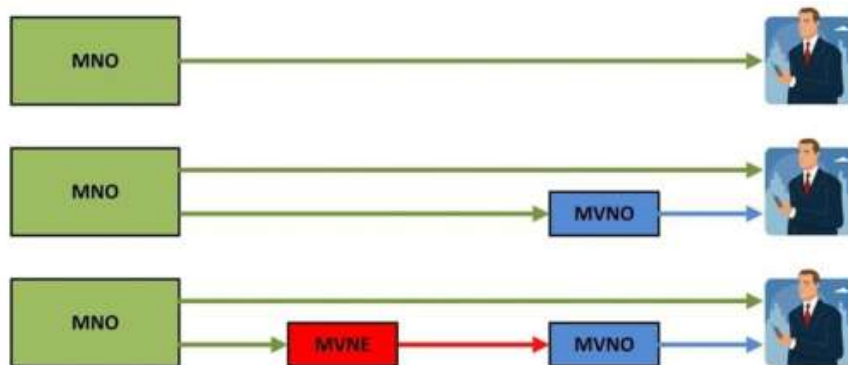
Mobile virtual network operator

Mobile Virtual network operator has several definitions. International Telecommunication Union (ITU) defines that MVNO is an operator that provides various Services on the mobile infrastructure without bandwidth at its disposal.

In many cases MVNO work out as a provider of mobile services or provide value added services (VAS). The type and scope of MVNO may be distinct in different countries. In UK a MVNO is an organization which does not have radio frequency but they have SIM card and switch. A MVNO for offering its full services normally rents networks from mobile network operators (MNO's) under a commercial contract. In most of the countries, MVNO's has been activated because of creating a competitive environment as they can offer different services with lower costs and maximum productivity from the network.

For this reason, in the most of the country's MVNO's are introduced as Enhanced Service Provider (ESI). Some of advantages of MVNO's are:

- Increasing number of services provided so that subscribers can select them
- Optimizing the usage of network capacity and reducing the costs
- Offering different and new services in order to compete in the market
- Optimum pricing policy for competition in the market
- Competition between MNO's to have better network infrastructure for attract MVNO's partnership.

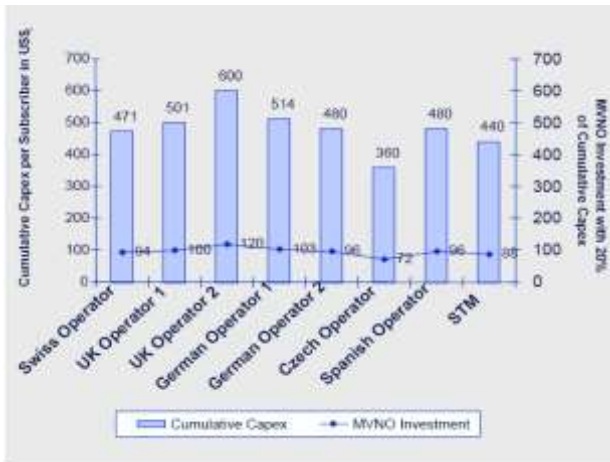


MNO, No. 2 : Relationship between MVNO

As you can see in picture no.2 MNO's offer their SIM cards to subscribers and MVNOs/MVNEs can associate in

providing services by using MNOs infrastructure. MVNO's

usually use own MSC* and HLR†/AuC‡ in their mobile network. MVNO's are similar to service providers but they have some different. MVNO's have their own SIM cards and working for his own business but a service provider doesn't have any SIM card. MVNO's has different types based on how much they have access to the MNO's network. CAPEX§ of an MVNO is almost 20% of CAPEX of a MNO. Chart 1 shows different countries CAPEX for MNOs and MVNOs.



MNO Capex No.3 : MVNO,

Changes in communication rules which has been done in European Union causes lots of Business for MVNOs. For example, they have divided all telecom operators to Services and Network operators. The main goal of this definitions is that Network operators fairly dedicate their capacities to service providers and make a competitive environment for all service providers. But we have to notice that for activating MVNOs it is needed proper rules between MNOs and MVNOs.

In different countries there are different rules, for instance in Italy they were not allowed initially but later because of they understand how much important they are, same as in UK. In some of countries which have high level of mobile penetration, activation of MVNOs can be a very suitable solution for offering different services. The most important issues relating with MVNOs are license rules and cooperation rules between MNO's and MVNOs. There are almost 600 active MVNOs worldwide right now. Netherlands, UK, Denmark, Finland, Belgium, Australia, and United States are countries which have most of MVNOs in the world.

Scope of services of MVNE**s are so wide and different and it depends on level of outsourcing the services by MVNOs. Some of advantages of using MVNEs are:

- √ decreasing initial investments of market entrance costs of MVNOs
- √ decreasing the time of delivery services to subscribers by MVNOs
- √ decreasing the period of confirming in Mobile business

- √ decreasing the Risk of investments and increasing the reliability
- √ Transferring knowledge and experiences to MVNOs
- √ preparing a situation for more focus on marketing instead of operation

As you can see in shape No. 2 MVNEs normally acting as a bridge between MNOs and MVNOs. Some of famous MVNEs are Arvato Mobile, Fixius, Martin, Dawes, Virtuser, Wyless.

A MVNO with a MNO in order to access to Network normally signs a commercial contract and then sell it to their subscribers with its own price. A MVNO may use its own Customer Care Service and Billing system and marketing instead of using MNO's facilities.

In different markets according to their area requirements they may use MVNOs. In some regions establishing a MVNO is according of local regulators rules. Regulators issue some operation for operators and MVNOs to determine their authority and limitations. Consideration this laws there are separated privacy to increase portion of market in specified relation borders. There is a close competition among MVNOs and MVNEs to provide wide range of new applicable mobile services with most quality and proper price.

In the other side MNOs response to all market opportunities for increasing their incomes by using their free capacities. Hereby MNOs believe they can compensate their inaccessibility costs.

For some of initiative markets of MVNOs for example in Scandinavia countries, regulatory have created more competition in the markets by introducing MVNOs. Regulatory believes MVNO Model is one of the most important factor in case of time and very cost effective for telecom companies for entering to the market and for sure increasing more competition in the market which is customers oriented. MVNOs in Scandinavia countries have more than 10% of market share. This high level of efficiency is possible because, nature of MVNO business Model. A MVNO does not need a very high amount of investment on Network infrastructure and doesn't need long-term activities for Radio Network expansions. Most of MNOs believes that MVNOs as a business unit in a large area can develop their selling model and even with their own brand (in Full NVNO). First successful MVNO named Virgin Mobile was in UK which was established in 1999. Virgin Mobile was successful in United State also so that initially registered as US Virgin Mobile which finally a MNO named Sprint Nextel has bought it 483 million US dollars. First MVNO was established in Denmark by Tele2 and was gradually expanded in other European countries. This model was created by cooperation between Tele2 in Sweden and Telia so that Telia initially failed in 3G operator license but replaces it with success in creating MVNO.

MVNO in International market

Till 2012 almost 634 active MVNOs was created which was established with 503 companies worldwide. Because some of mentioned companies has been establishes several MVNOs. Graph No. 2 shows distributions of MVNOs worldwide.

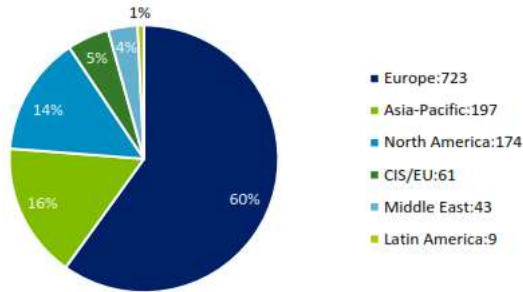
*Mobile Switching Center

† Home Location Register (HLR)

‡ Authentication Center (AuC)

§ CAPEX=Capital Expenditure

**Mobile Virtual Network Enabler



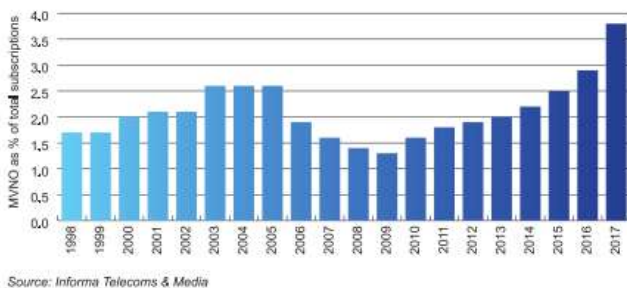
No.4

The biggest multinational MVNO is Lyca mobile which is active in 17 countries worldwide. PLINTRON which is biggest multinational MVNE^{††} is supporter of Lyca Mobile. PLINTRON will be expanded their services to 31 countries in 2016. The target market of MVNOs are subscribers and companies. Most of MVNOs have customer oriented attitude and rely on their own niche markets. Most of subscribers receiving 3 or 4 times of services as comparing with MNOs. MVNOs not only offering basic services such as Voice and SMS but they offer more than 120 Mobile Broadband services.

MVNO market share worldwide

As you can see in the graph No.3, trend of MVNO market share from 1.6 in 1999 will be more than 4 percent in 2017.

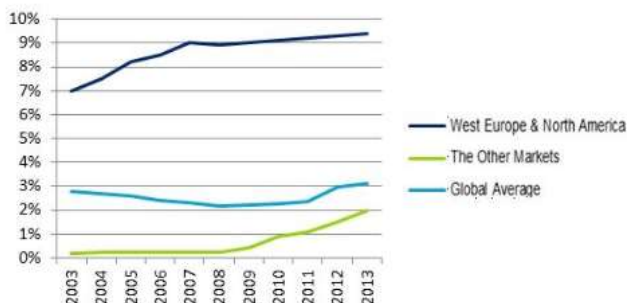
MVNO subscriptions as percentage of global markets



No.5

As you can see in Graph No. 6 Global MVNO market share in different Area worldwide. As you can see in West Europe & North America market share is more than 9 percent in 2013^{††}.

Chart 2 : Global MVNO Market Share

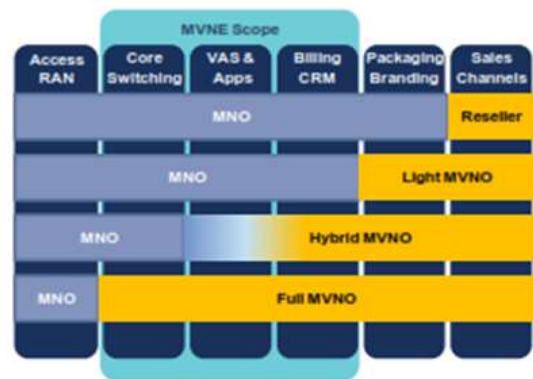


No. 6

MVNO Types

As you can see in shape No. 5 according to service level MVNOs have different types. Some of them just reseller of

Mobile services and others as light, Hybrid and Full MVNO.



No. 7

Light MVNO : this type of MVNO is as distributor. In this type MVNO just responsible for marketing and it has no SIM card and it is for MNO.

FULL MVNO : this type of MVNO has own MSC^{†††} and IN^{***} for supporting their VAS^{†††} services. In this case MVNO use their host MNO Radio Network and offers high level of services with its Brand and Billing System. In this case they can compete with other operators in price and different services.

Conclusion

In this research we have investigated about critical success factors for MVNOs which can be used for offering a new business model. As a new management approach all Mobile Operators in a very close and critical competition have to use MVNOs as a proper tool for increasing their service level to their subscribers. For setting up a successful MVNO we have to pay attention to all key factors to have a better result in the market.

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†† MVNE: Mobile Virtual Network Enabler

†† www.mvnworldcongress.com

§§ Mobile Switching Center

*** Intelligent Network

††† Value Added Service

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