

Scope and Challenges for Vehicle Tracking Service Business in Bangladesh

ARTICLE
SAMSMRITI – The SAMS Journal
ISSN 0976-304X

Vol. 12(2), Jul-Dec 2018
& Vol. 13(1), Jan – Jun 2019
pp. 55-61



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Abstract:

Vehicle Tracking Service (VTS) market in Bangladesh could be around TK 280 million by 2020. However, there are many challenges in operating such business in Bangladesh including regulatory, sourcing and market development related difficulties. This research predominantly utilized qualitative research method such as semi-structured interviews to conduct a feasibility study of the VTS market in Bangladesh. In addition, secondary data including academic literature, policy documents and industry circulated dissemination materials were also analyzed. At present there are more than 20 organizations that have acquired license from Bangladesh Telecommunication Regulatory Commission (BTRC) to run VTS operations. The findings of this research suggest that the industry is still in the inception stage of industry lifecycle and there are three main factors that can fuel a significant market expansion which includes: increased digitization; continuation of recent trends in increased vehicle purchase and inevitability of reducing vehicle related crime rate.

Key Words: Distribution; Feasibility study; Service marketing channel; Sourcing market analysis; Vehicle tracking service

1. Introduction

Bangladesh is one of the most densely populated countries in the world and undeniably the main problem faced by the road public transport system in big cities is the limited number of public vehicles and lack in public vehicle scheduling information. As a result, the passengers get dissatisfied with the public transport system and become encouraged to buy private vehicles. Consequently, the sale of private cars witnessed a significant rise over the last few years (The Independent, 2017). A total of 21,959 new private passenger cars have been

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registered with Bangladesh Road Transport Authority (BRTA) in 2017 that means over 1830 cars hit the streets every day (BRTA, 2018). The security of these vehicles is the primary concern for all vehicle owners. It becomes necessary to track vehicle when it goes on road. Emerging technologies in communication have a substantial influence on our daily lifestyle of which transportation is no exception (Bagloee et. al., 2016). Global Positioning System (GPS) technologies for locating vehicles have become popular globally. Since vehicle tracking (VT) offers continuous monitoring of a vehicle, this system enables the owner to track his/her vehicle through web or mobile. The vehicle tracking service (VTS) allows to set rules against uncontrolled driving such as 'speed violations' and 'harsh braking' and helps to implement discipline against the drivers thus reduces the possibilities of rough and dangerous driving and unauthorized vehicle use (Wang and Loui, 2009; Khan, 2016). VTS also enables owner to set go or no go area for vehicle and any violation will be reported through alerts. In case of an emergency, the driver or the passenger can press the Panic Button to alert the vehicle owner.

GPS based systems are widely used in current business environment to track resources including vehicles and employees who travel to multiple locations during each work day. Since GPS devices are often integrated into global systems for mobile communication (GSM) network, the locations can be recorded real-time from cell phones (Wang and Loui, 2009). From both the practitioner and the research community perspective, the use of technology in the transportation processes has brought growing interest in recent years to ensure safety and maximize profit (Perego et. al., 2011).

Despite the fact that VTS offers various benefits, it is still in the inception stage of industry lifecycle. In Bangladesh there are about 26 companies who have received license from BTRC to provide VTS related services (BTRC, 2018a); however, the total numbers of VTS users are very limited. There are only two VTS companies that are operating for more than 6 years. This article, transferring knowledge from primary and secondary data, provides insights of the potentials and limitations of VTS business in Bangladesh.

2. Methodology

As explained in the previous sections VTS sector is at its inception phase in Bangladesh. But, the socio-economic conditions indicate that the sector can enjoy rapid growth. However, there is very little academic or industry research on the issues. Considering the situation, this study conducted research on the business environment and market potential of VTS services in Bangladesh.

Exploratory research was deemed as suitable due to the lack of existing academic work on the issue. It should be mentioned that exploratory research is usually conducted for a problem that has not been studied clearly before (Zikmund, 2013). Typically, exploratory research consists of the following methods: secondary research and qualitative data collection. This research analyzed secondary data such as government regulations, related statistics and service offerings of existing VTS service providers. In addition, semi-structured interviews of relevant stakeholders were conducted to generate qualitative data. Table 1 provides further details of the semi-structured interviews.

Table 1 : Regulatory information

Stakeholders	No. of interviews	Role
VTS service professional	6	Mid management, customer executives
BTRC official	1	Joint secretary level
Existing VTS customer	4	Individual customer, logistics service provider

3. Result and Discussion

This section provides the results of the exploratory research and in addition discusses and interprets the findings. The discussion includes assessment of the regulatory environment, actors in the sector, service gap and market potential for the VTS sector in Bangladesh.

3.1 Regulatory Environment of VTS Sector in Bangladesh

To analyze the VTS market environment, it is important to understand the business environment of this sector. Business environment can be defined as the combination of internal and external factors that influence a company's operating situation (Teece, 2010). There are many external factors that can influence a VTS provider in Bangladesh of which the regulatory issues are critical. GPS vehicle tracking system can be imported under the Bangladesh Customer Tariff defined by Article 85. The necessary tariff of such import and code is provided in Table 2. It should be noted that overall cost including the duty and after sales tax is 17% which would be ultimately passed on to the end customer; hence increasing the retail product and service price.

Table 2: Regulatory information (Bangladesh Customs, 2018)

Code	Item	Duty	After sales tax
85269110000-10-000	GPS vehicle tracking system	2%	15%

The VTS service provider must obtain license from Bangladesh Telecommunication Regulation Commission (BTRC). BTRC issues license under section 36 of Bangladesh Telecommunication Act 2001. Prerequisite for such application and other relevant details is provided in Table 3. An important fact to note is that license duration is for 6 years and licensee must share 1% of the gross revenue with BTRC. The service provider also must source wireless data transmission facility from a cellular mobile operator. This results in further cost increase if the VTS service provider is not a cellular mobile operator. In summary, the regulatory environment of the VTS sector cannot be termed as very investment friendly.

Table 3: Government fees and taxes (BTRC, 2018)

Requirement	Application form fee	License acquisition fee	Annual license fee	Gross Revenue Sharing	License duration
Ability to source wireless data transmission facility from a licensed cellular mobile and BWA operator	TK 5000	TK 300,000	TK 200,000	1%	6 Years

3.2 VTS Service Providers in Bangladesh

In Bangladesh there are about 26 companies who have received license from BTRC to provide VTS related services (BTRC, 2018a). VTS equipments are mostly imported from China; however, some businesses assemble equipment with parts being imported. Software needed is brought from third party and/or developed in-house. In addition, there are some individuals/small shops that sell VTS equipments and services without license. VTS service providing organizations can be categorized as follows:

Mobile Phone Operators: Most of the mobile phone operators are providing VTS service; this includes Grameen Phone and Airtel (now Robi). As mentioned while analyzing the regulatory environment, VTS service providers' need to source wireless data transmission service from licensed cellular mobile phone operators. The situation puts the mobile phone operators in an advantageous position to market VTS service at lower cost. The mobile operators providing VTS service procures the devices from mainly China and has local partners for installation, repair and maintenance.

Automobile supply/ distributions companies: Automotive assemblers such as Nitol has partnered with Bangla Link which is a cellular mobile operator to assemble VTS equipment and provide package service to customers.

Electronics assemblers: Some electronics manufacturers have added VTS equipment as part of their portfolio. In such scenario parts are imported from China. One such enterprise is Onnorokom Electronics which has its own in-house software department and also takes help from other specialized software partners.

Security service providers: Some of security service providers also have obtained VTS license and customers for these firms are mainly internal.

Non-licensed sellers: These sellers of VTS operate without a license or permission. These are small retailers or shops that import VTS equipments and use personal use mobile sim cards for data transmission.

3.3 VTS Service Gaps

An analysis of the VTS related services available in Bangladesh was conducted and the results are provided in Figure 1. The list is based on a brief primary analysis of the market. It should be mentioned that the warranty period of equipment is between 1 to 3 years for all sellers. The service packages of various VTS firms vary from basic GPS tracking, power disconnection, voice monitoring to engine reports etc. All service providers charge a onetime fee for the equipment and a monthly charge for the service. However, there is no binding contract between the service provider and consumer which means the latter can stop using the service anytime. Some service providers charge consumers on a pay as you go basis for the usage cost. Figure 2 provides details of prices charged by some of the VTS providers in Bangladesh. However, considering the socio-cultural need of the country and the availability of technology this research has identified two features that should be part of the service packages of major VTS firms; namely integrated vehicle monitoring and real-time fuel monitoring.

Fig 1: VTS services offered

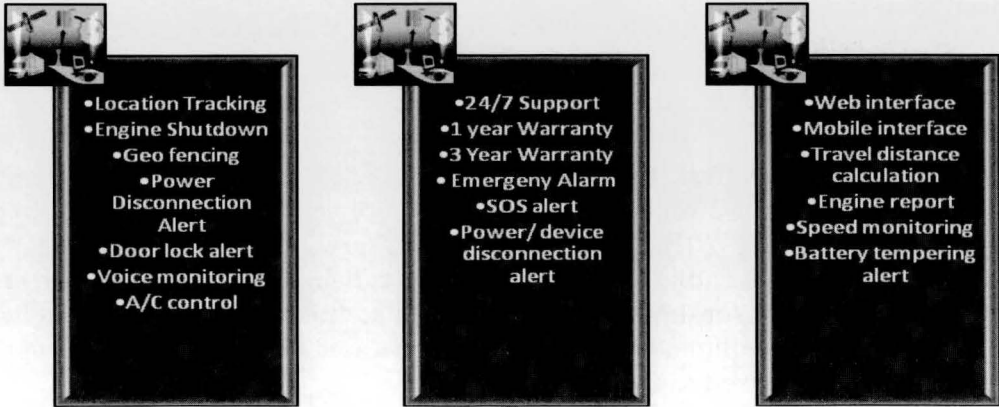
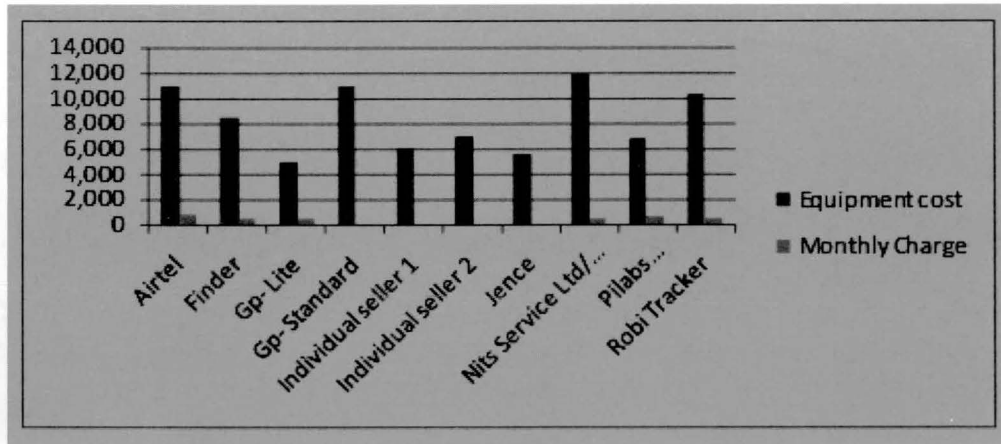


Fig 2: VTS services charges



Lack of integrated vehicle management (IVM) system: At present none of the service providers truly provides IVM system. IVM refers to the adaptability of systems to assess the current or future state of the member system health and integrate that picture of system health within a framework of available resources and operational demand.

Real time fuel monitoring: In Bangladesh most vehicles (both individual and commercial purpose) are operated by paid drivers. Hence, there is a major worry among vehicle owners regarding stealing of fuel by the drivers. It should be mentioned that at present most of the vehicles run both on fuel such as petrol, octane, diesel and compressed natural gas (CNG). Hence, there is a significant interest among vehicle owners (commercial and private) to monitor fuel/gas real time. It should be mentioned that none of the VTS providers provide any real time fuel /gas monitoring service at present. However, two organizations namely NITS Services/ Banglalink and Pilabs Bangladesh/ Onnorokom Electronics are working on integrating such services to their existing offerings.

3.4 VTS Market Potential

Bangladesh has a significant VTS market potential; there are only two VTS companies that are operating more than six years. The industry is still in the inception stage of industry lifecycle. As part of this research, the authors conducted various semi-structured interviews with numerous stakeholders in the industry. It was revealed from these interviews that there are three main factors that can fuel a significant market growth namely, increased digitization, increase in vehicle purchase and car theft and security issues.

Increase in vehicle purchase: All the interviewees noted that there is steady growth of vehicle purchases in Bangladesh. It is expected that the trend will continue in the coming years. The subjective judgment of interviewees is also supported by available statistics on vehicle registration. Till 2017, total 3,300,106 vehicles were registered with an average growth of 15% per year (BRTA, 2018). The interviewees further suggested that even 1% market penetration for VTS service products could result into a huge market in Bangladesh.

Car theft and security issues: Over the last few years, the country has seen a spate of car theft and other related criminal activities (Bangladesh Police, 2018). Most of the interviewees concurred that there is nervousness among the vehicle owners in particular logistics service providers regarding the safety of their vehicle. The situation could influence more vehicle owners to acquire VTS services.

Increased digitization: Internet access and speed has always been a thorn and a drawback for Bangladesh. Situation has improved significantly with implementation of submarine fiber optic connectivity complimenting the Very-small-aperture terminal (VSAT) mediums resulting in an increase in high speed mobile data coverage. In summary the last decade has seen significant investment in digitations (ICT Ministry, 2018). Several ICT related laws have been passed in last couple of years and the T/ITES sector is valued at USD 650 million. This trend of digitization in Bangladesh is expected to be beneficial for the betterment of the VTS sector.

This research estimated the potential market size of the VTS market in the future; in 2020, the potential market size of VTS in Bangladesh is roughly estimated to be TK 281 million. To make the estimate, the growth of the vehicle registration was considered: during 2016 to 2019 the growth is approximately 15%. It is assumed that 1% of the vehicles can be installed with VTS by 2020. The equipment cost, and potential yearly charge is averaged to be Tk 8000/year and TK 7200 respectively (Table 4). Equation 1 is used to develop the estimate.

VTS Market (start of 2020) = Number of vehicle (at end of 2019) * 1%* (Equipment Cost * Charge) = TK 281 million

Table 4: Vehicle growth and assumptions

Year	No. of vehicles	Assumption	No of vehicles with VTS	Assumption
2016	10,59,403	15% growth as present		1% vehicles installing VTS
2017	12,18,313		12,183	
2018	14,01,060		14,010	
2019	16,11,219		16,112	

4. Conclusion and Managerial Implications

This research has investigated the potential market and the current business environment of VTS sector in Bangladesh. The research which was exploratory in nature reveals that Bangladesh is a promising market for VTS with a potential market size of TK 281 million by 2020. The government's increased focus on digitization combined with high growth of vehicle purchase and apprehension among car owners regarding security are likely to fuel the growth. However, regulatory policies by BTRC can be a hindrance with high rate of taxation and duties. VTS providers also must recalibrate their existing service offering by adding integrated vehicle monitoring and real-time fuel monitoring system which would further draw customers in large numbers. In addition, as the VTS market grows, it is likely that more firms would start assembling and manufacturing VTS equipment which would be a boost to the local manufacturing sector.

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