IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS TO THE MANAGEMENT OF ADVENTURE TRAVEL INDUSTRY: A CASE STUDY

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Thesis submitted in partial fulfilment of the requirements for the degree Master of Business Administration – Information Technology

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Declaration of the candidate & Supervisor

I declare that this is my own work and this thesis/dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Dr. Amal Sheahn Perera: Date:

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Abstract

The Travel and tourism industry has started adopting information technology widely than ever. It expands applications of information technology across the whole supply chain and it is important to study the impact of software systems use for their business since most of the travel companies are unable to afford a colossal amount from their budget for the development of information technology resources due to several reasons. The main objectives of this research are to find out the critical success factors that affect the implementation of vertically integrated software systems and finding out the business impacts of it. This research is based on qualitative case study methodology for Intrepid group which is the world's largest small group adventure travel company. This research uses a conceptual framework which covers key success factors affecting the implementation of vertically integrated software system and management of adventure travel industry as the main components. Data was collected from senior positions of Intrepid Group through face to face interviews by using semi structured questions.

The result of this study indicates that management activities of adventure travel industry are affected by all factors identified in the literature review. The study also found that integrating multiple specialized systems with the core system is the most suitable system development approach for the adventure travel industry rather than developing all functionalities on top of the core system from scratch. The result also shows that the business nature of the industry (such as being a 24x7 globally operated company) is significantly dependent on using a vertically integrated software system for its operations.

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Abbreviation	Description
SCM	Supply chain Management
TSCM	Tourism supply chain management
CRM	Customer relationship management
ERP	Enterprise resource planning
DMC	Destination Management Company
ECMS	Enterprise Content Management System
API	Application Program Interface
KPI	Key performance indicator
FIT	Fully independent traveler
AWS	Amazon Web Servers
GMSL	General Manager Sri Lanka
CIO	Chief Information Officer
MTOSL	Manager Travel Operations Sri Lanka
LBSS	Lead Business System Specialist
MTSL	Manager Technology Sri Lanka.
MDMC	Manager DMC Sri Lanka
SEO	Search Engine Optimization
ROI	Return on investment
BST	Business Support Team
POS	Point of Sales
ESB	Enterprise System Bus
NPS	Net Promoter Scores

1. CHAPTER ONE - INTRODUCION

Chapter Overview

This is the introductory chapter of this thesis and it mainly contains the research background, research problem, area of the research and research objectives. Also, this chapter discusses in brief about the adventure travel industry and the Intrepid Group which is the subjected institution for this case study.

1.1 Research area and Background

Adventure travel is a type of tourism, involving exploration or travel with perceived (and possibly actual) risk, and potentially requiring specialized skills and physical exertion. Adventure tourism has grown in recent decades, as tourists seek different kinds of vacations, but measurement of market size and growth is hampered by the lack of a clear operational definition.

There are a few big "small group adventure" travel companies operating across the world, Such as Intrepid Group which is a multinational large-scale company with many trip brands operating across 19 countries and organized trips for almost all the continents of the world. Intrepid takes over 350,000 clients every year from 50 different source markets. They operate adventure holidays in over 100 different countries, their turnover exceeds US$400 million and they have over 2000 dedicated staff members to make it all happen.

The main business of Intrepid is organizing small group adventure travel trips which could be accessible to interested customers. They usually run the business through travel agents of various parts of the world and there are two types of agents; one type of agents will sell the adventure travel products directly to the end customers known as "selling agents". The other type of agents will buy a particular trip product from a selling agent and will sell to the end customer on behalf of a "selling agent" known as "buying agents". The two types of agents are bound with a contractual obligation and the selling agent will pay a commission to the buying agent for each customer who has been sold a trip product.

The end customers have different alternatives of booking a particular trip

1) Visit the brand website and do an online booking

2) Call or visit a buying agent and reserve a place. The buying agent will do an online booking through the agent web portal provided

3) By email

4) By Phone

The adventure travel company has a series of responsibilities such as providing accommodation, mainland transportation, flight inclusive transportation, ensure a hassle free trip or check the validity of insurance cover obtained by passengers, check various compatibilities within the tour boundaries such as local laws, customs etc.

The company needs to manage DMCs (Destination management companies) or known as "operators" who actually run the trips. DMCs can be an entity which belongs to the company or it could be an external company which is out of control from the adventure travel company environment. DMCs are responsible for managing trip elements such as buses, taxies, hotel accommodation, insurance, and meals.

DMCs (operators) needs to be supplied these trip elements by outside vendors and the cost of supplied elements will be invoiced to determine the price of products. Based on fluctuations in these elements' prices, the company may have to reevaluate prices from time to time. For example, an accommodation (rooms) element of a particular trip can be varied due to season and off-season period of the year (e.g.: Summer and Winter)

With regards to the sales of trips again, there are a special type of agents who sell Intrepid trips on their websites. They are called travel partners. Unlike in the case of buying agents, customers visit Intrepid partner's websites and will place bookings for Intrepid trips. The corresponding booking will be redirected to Intrepid's booking system through the public API which has been provided to them by Intrepid. For each such booking, Intrepid pays a commission for the partner. Keeping in mind that these partners will sell not only Intrepid trips but their competitors' trips too.

Intrepid uses an in-house developed software application called "Starship" as their main business system. It has been developed on Microsoft .net platform. Based on client-server architecture, you can access server-side business logic and processes by your client instance at your PC.

For supplier elements availability and price management for supplied elements, Intrepid practices an internal web portal called “Elements”. It facilitates to keep track on elements supplies for each departure and facilitate for pricing of each element with or without discounts. Also, it allows running promotions for different trips based on price seasons or promotions defined by the marketing team. These availabilities and pricing will be reflected on Starship once changes are published from Elements.

Also, Intrepid has online websites for directing client bookings, which are eventually connected to the Starship server side through a web service. These websites are categorized into different levels such as user portals and agent portals where interested passengers can book trips directly with our booking engine while agents sell our products to the customers by logging into the “agent web portal” provided by the company. At the same time, Intrepid has provided an “API” for bigger travel partners like Gebeco and Viator, where they have their own IT systems and they have the ability to consume a web service.

Furthermore, Intrepid recently diverted all their customer contacts to “Salesforce” which is a popular CRM system, As a result Intrepid is confident that they will be able to serve customers better than before with more customer-oriented information such as customer loyalty and prospective deals. Also moving forward, they are planning to use CRM as a marketing tool, which they believe will bring a huge impact to the business since they can do customer focused marketing campaigns more effectively than before

Intrepid Group owns multiple brands (multiple companies acquired by the group).So not only their own Intrepid products but they also operate other products which have different product styles from Intrepid products. Figure 1.1 shows some of Intrepid’s brands and operational entities.

Figure 1:1 Intrepid Brands and Operational Entities

Therefore, the company needs to manage following entities.

- Customers
- Selling agents and buying agents within their scope of business
- DMC operations
- Element suppliers
- Travel partners

Figure 1.2 will simplify the business process described above.

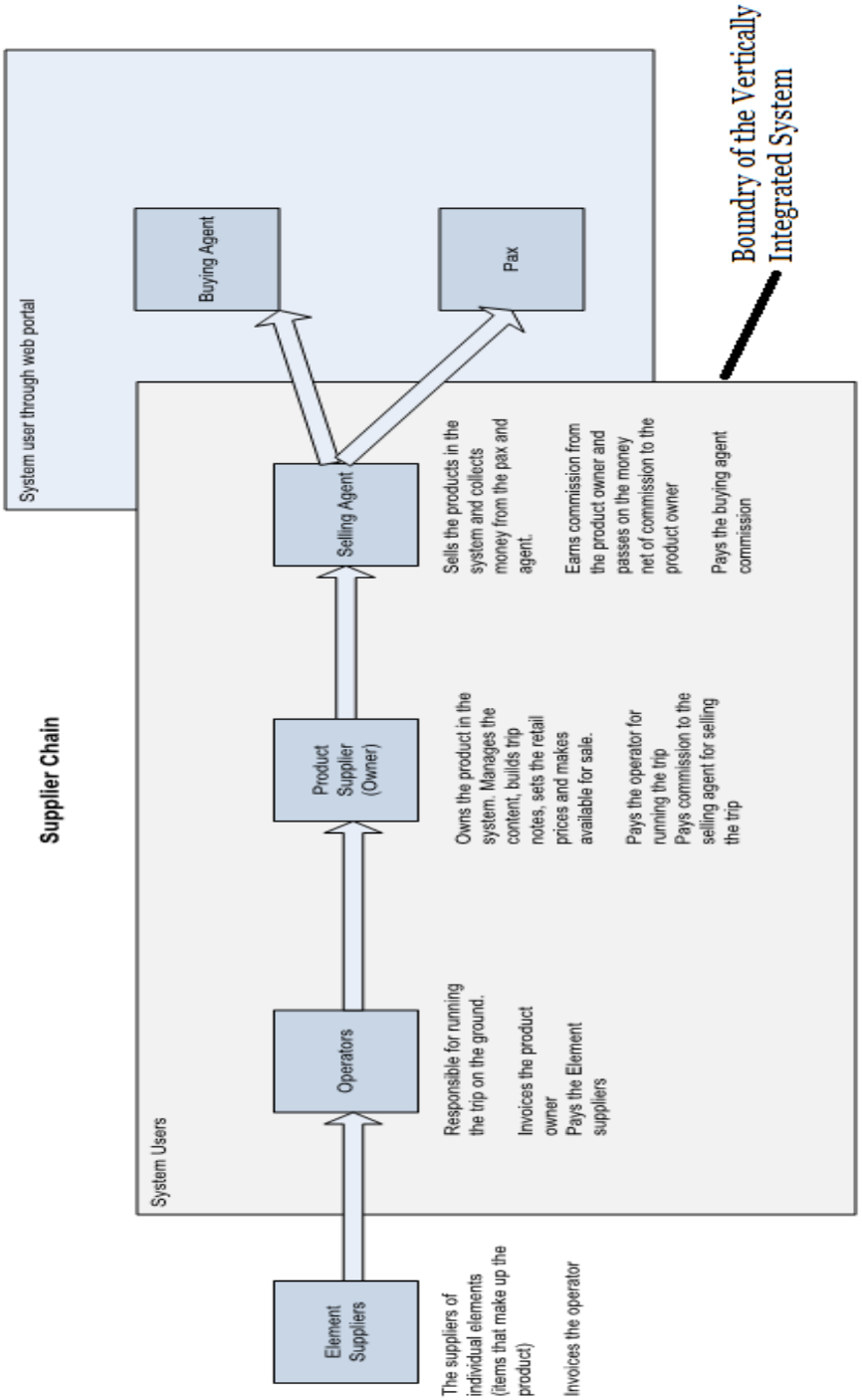

Figure 1:2 Business process and key entities of adventure travel industry

For each entity, the company needs financial information separately to calculate the sales, profit and also to do sales forecasting and other information. Also, they might need to focus on loyal customers for offering them special discounts, benefits etc.

Managing operations related to adventure travel industry is not an easy task. Specifically, without any involvement of a proper information system, it could be a burdensome exercise to attend to customer needs, agent management, supplier management and trip management. In a way, the software system should be able to integrate its supply chain partners and distinguish their business activities. In order to manage all these aspects, the need for a vertically integrated software system arises. You may already use any traditional software system or software application packages available in the market such as Accounting software, spreadsheet applications, CRM etc. But will it be sufficient to manage a broad and globally spread industry like adventure travel? Especially when business keeps in a continuous growth? And when the context of business has to deal with a lot of vertically integrated partners? If not do we need a fully integrated specially designed software system for that? Will it solve our problems or do we need a more advance solution going beyond it? These are the questions that I hope to find answers by doing this study.

1.2 Research problem

1) Is management activities of an adventure travel company significantly affected by the vertically integrated software system(s)?

1.3 Research objectives

- Find out critical success factors that have affected the implementation of vertically integrated software systems in adventure travel industry.
- Find out the suitable system implementation approach for small group Adventure Travel industry.
- Find out the business impact of vertically integrated software systems.

1.4 Research Questions

1) What are the key success factors that affect the success of a vertically integrated software system in adventure travel industry?
    a. Is Implementation of a single vertically integrated software system or integration of specialized software systems designed for a specialized purpose, more effective for a better supply chain management?

1.5 Motivation and Justifications

A recent study done by George Washington University partnering with Adventure Travel Trade Association (ATTA) shows that at the end of 2013 adventure travel industry has recorded a 65% of the growth since 2009.So it is vital to conduct a study on such a rapidly growing industry for the betterment of business operations and to increase the customer and stakeholders' satisfaction

Since the adventure travel industry has grown fast, use of information technology application has increased profoundly for the smooth run of operations. For instance, Intrepid uses the following desktop/web applications for their daily operations.

- Starship business application (bookings/reports/invoicing)
- Elements web portal (supplier elements)
- Brand websites for Intrepid/Geckos/Peregrine/UA brands (bookings)
- Agent Portal (bookings)
- Salesforce CRM (customer information)
- Navision System (finance management)
- Hybris (publishing products)
- HRIS portal (HR management)
- Leaders portal (obtain trip details for tour leaders)
- Document portal (used by sales team to save and view sales/customer care reports)

Intrepid spent a significant amount of money on developing information systems, purchasing licenses for third party systems, IT infrastructure etc. They maintain a software development team in-house. So, it is important to assess the impact of those systems on the business.

Not only Intrepid, but a few major players similar to Intrepid are using their own IT systems. At the same time, some of the travel partners like Tour Radar is using their own IT System and they have the ability to consume an API or web service provided by Intrepid or similar capacity companies.

Therefore, they have to see answers for questions such as “what is the right approach for system development?” “Is system integration or single system development approach the best?”

2. CHAPTER TWO – LITERTURE REVIEW

Chapter Overview

This chapter includes brief descriptions of adventure travel industry, adventure travel supply chain, supply chain and integrated software systems and types of integrated software systems. The discussion is based on the empirical researches done in relevant areas.

2.1 Adventure Travel Industry

People like to experience something better but different from what others have experienced related to a particular goods and service, the same is applicable to the travel and tourism industry. In early days people tended to enjoy a relaxing outing with their families; but when the industry matured people were searching for different experiences in the travel industry and as a result, there is a rising demand created for adventure travel.

According to (Sung, Morrison & O'Leary, 1996) Adventure travel is a mix of following components

- Activity
- Motivation
- Risk
- Performance
- Experience
- Environment

All six components are considered to be highly important in adventure travel. Among those activities, experience and environment are the most important components that should be used to define and differentiate adventure travel industry from the typical travel and tour industry

Adventure travel is involved in a lot of supply chain activities identified as similar to elements in a typical supply chain such as supplier, manufacturer, distributor, and consumer. In some cases, the end supplier and end customer may not be visible as it stretches further into different dimensions.

There are some specific value chain components identified related to tourism supply chains. You may find minimal literatures related to tourism supply chain such as Kaukal *et al*. (2000). It is noted that a typical tourism value chain consists of four components: tourism supplier, tour operator, travel agent and customer, and they are in a single link chain. We can apply this model to Adventure tourism as well. Figure 2.1 shows the tourism value chain.

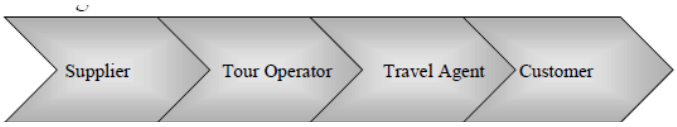

Figure 2:1 the tourism value chain

Source: An approach to enable interoperability in electronic tourism markets. Kaukal *et al*. (2000)

According to (White,1995) who did a study on eco-tourism market on North America found that out of all tourists in his research population, 77% of tourists had been on a trip involved in nature, outdoor adventure and learning about other cultures .As per the definition on adventure travel, experience and environment are the two key elements which can be used for distinguishing the adventure travel industry from the general tours and travel industry; for instance we can consider eco-tourism is a type of adventure tourism

Furthermore, this study found that the education level of eco-tourists is higher than other general experience travelers. Except a very few they all are willing to travel as small groups. There are seasonal and off seasonal travels and many prefer to travel during the season. This will create price varieties between seasonal and off seasonal trips. 75% of travelers prefer on trips where the duration is less than two weeks

There is a demand for specific adventure tourism activities/subdomains such as mountain based adventure tourism which involves mostly hiking, climbing, snow rafting and trekking. The risk associated with such activities is likely to diminish as knowledge, experience and technical capacity (communication technology and tracking devices) increase (Beedie & Hudson, 2003)

2.1.1 What makes Adventure travel distinguished?

As described above, adventure tourism is a distinct experience from other modes of tourism,(William & Soutar, 2009) found some interesting relationships stated below by their own research

- Functional value
  This includes well organized, done well feeling of the traveler
- Value for money
  Traveler thinks the trip is worth the money he spent
- Emotional value
  Such as excitement, happiness/enjoyment etc.
- Social value
  This is about social recognition he has gained from the tour, feel acceptable to others
- Novelty value
  Satisfied curiosity, feel adventurous
- Satisfaction
  Was exactly what the traveler needed and felt like it was a wise choice
- Intentions
  The traveler will recommend this trip to another potential traveler. Also, he will go on a different tour again

In this study, they ended up observing the following:

A. There is a strong relationship between novelty value and satisfaction which eventually leads to future intentions (satisfaction). Tour operators should always have looked at on new developments in order to meet customer satisfaction

B. The value provided by the tour operator is the key to customer satisfaction and eventually, it leads to fulfill customer intentions

2.1.2 Risk associated with adventure tourism

Generally, tourism relies on customers who have a bulk income to spend other than their main income. This behavior needs to be kept in mind always when you are making plans for the tourism industry, because a slight economic downfall across the globe or across a region can cause a lot of damage to the industry. One of the first things people would eliminate as a result of such situations is secondary expenses like tourism/leisure and holidays. Therefore there is always a risk for tourism from the economic perspective.

Adventure tourism is associated with a number of known risks. Some of the risks are due to external factors and others are due to the nature of the industry. (Dolnicar, 2005) did a study for Australia on this matter and found a few risk categories which could affect the adventure tourism industry.

- Political Risk: Terrorism, Political instability, War / Military Conflict, Visa Rejection

- Environmental risk: Natural disasters, landslides

- Health risk: lack of access to health care, life-threatening diseases, lack of access to clean food and water

- Planning risk: unreliable airline, inexperienced operator, not assured flight home

- Property risk: theft, loss of luggage

A good tour operator could mitigate health, planning and property risks but it would be difficult to intervene on political or environmental risks (weather forecast may help) since those are uncontrollable factors for a tour operator.

2.2 ICT and tourism

Information and communication technology has brought travel and tourism industry into a new dimension. Nowadays the industry is more customer-centric than any era due to the impact of ICT. (Buhalis & O'Connor, 2005) said consumer-centric technologies will drive organizations into profitability through a network of partners. It can elaborate further using the Figure 2.2 diagram.

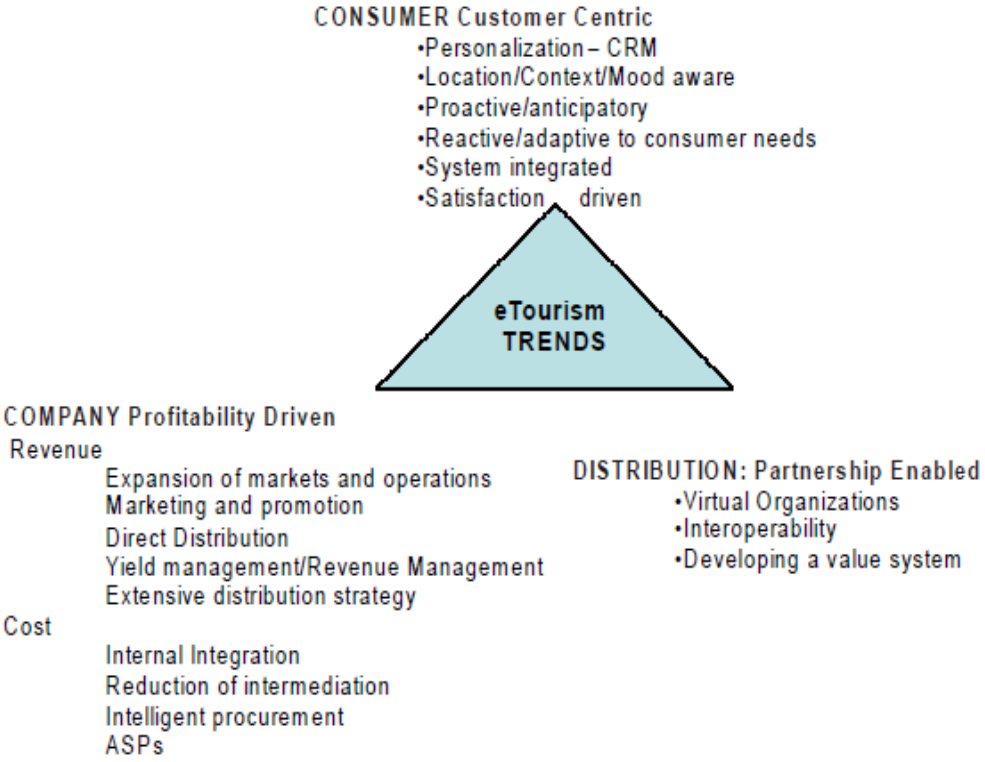

Figure 2:2 e Tourism trends

Source: Information Communication Technology Revolutionizing Tourism (Buhalis & O'Connor, 2005)

(Buhalis & Zoge, 2007) did a study on how the Internet is affecting Porter's five forces model and how it has shaped the tourism industry. They found out that all five forces intensify higher when business is online compared to offline and ultimately it creates a better bargaining environment for customers and creates better transparency for all interested parties including supply chain partners

2.3 Supply Chain Management and Travel /Tourism Industry

When we apply supply chain management concepts to the tourism industry, a new type of supply chain management is created. We would like to call it TSCM (Tourism Supply Chain Management). The definition of Tourism Supply Chain (TSC) can be described by the following paragraph (Shang & Zong, 2009).

"A network of tourism organizations supplying different components of tourism products/services such as flights and accommodation for the distribution and marketing of the final tourism products at a specific tourism destination, and involves a wide range of participants in both the private and public sectors."

The success of a supply chain management process in the tourism industry can be determined by the level of tourist satisfaction (Țigu & Calaretu, 2013). Supply chain operations are vital to providing quality and environmentally friendly service to customers. Most tour operators now focus on sustainability issues of their supply chain such as environmental issues, human and animal rights and working conditions not only for their employees but for widening its scope to their suppliers and distributors also. For example, Intrepid Group has implemented policies on Carbon offset limit and ban of elephant rides during their tours. But the main issue of applying the sustainable supply chain management model to the tourism is, it is a part of the quality equation. However, this can be overcome by increased communication between sustainability and quality in order to increased market awareness (Font-et-al, 2008).

TSCM has faced critical issues. (Shang & Zong, 2009) has identified and listed them as below

1) Demand Management

Demand management includes demand forecasting, marketing and sales forecasting based on the projected demand and the service/production capacity

2) Two party relationship

Relationships with parties who are stakeholders in tourism such as suppliers, distributors, competitors, government and other parties.

3) Supply management

Buyer-supplier relationship in a supply chain

4) Inventory management

This is crucial based on the supply chain category you are in. Basically, there are two categories called push supply chain and pull supply chain

In push supply chain you will depend on historical data and demand forecasting, while end-user demand-based inventory management is determined by pull supply chains.

5) Product development

This is aimed to offer the right product at the right time in order to satisfy customer needs

6) TSC coordination

It is a process of Coordinating and communicating with different players of the industry who provide different service products such as accommodation, transportation etc. and help business to deliver the final tourism product.

7) Information Technology

Since customers cannot experience a tourism product before it is actually consumed, Information technology can be used to experience the perceived quality of tourist products before it is actually consumed. Development of the World Wide Web and internet have drastically improved the ability to experience the perceived quality of tourist products.

It can be used to improve business operations and advance supply chain management as well.

In modern businesses, we can identify

Vertically integrated product sellers; produce all component and services in-house.

Vertically integrated solution sellers (system integrators); sell solutions integrating one or more products supplied by external product suppliers.

Adventure travel is a kind of a solution for a problem where they sell solutions by integrating few products together (e.g. transport, accommodation, flights, food etc.), where products may not be necessary to be built in-house. Therefore we can consider an adventure travel company as a vertically integrated solution seller (system integrator). However, there is no supportive evidence that modern-day firms are moving from single vertically integrated product selling to system integrators but a more complex pattern of the organizational form are emerging which use both type of systems (Davies, Brady & Hobday, 2007).

2.4 Supply Chain Management and Integrated Software Systems

What is a vertically integrated information system?

A vertically integrated information system is any software application that supports a specific business process and targets different groups consisting of "relatively" a smaller number of users with the specific skill set and job responsibilities within an organization. Some of the common types of Enterprise applications can be listed as follows:

- Enterprise Resource Planning (ERP)
- Customer Relationship Management (CRM)
- Supply Chain Management Software (SCM)
- Enterprise Content Management Software (ECMS)

Vertical applications are often customized to meet the needs of industry-specific users. Vertical apps are also more complicated to use than horizontal apps, and because they need to integrate with other systems used in the organization, they may require IT assistance and deployment.

According to its definition, an ERP system can also consider as a vertically integrated software system

Characteristics of vertically integrated software systems

According to (Calisir & Calisir, 2004) the following characteristics of a vertically integrated system (ERP) will be influenced to the end user satisfaction of the system

Perceived usefulness - Perceived usefulness is affected by perceived ease of use and system capability of the particular integrated software system (ERP). Also, it is affected by user guidance

- Learnability - Learnability is affected by user guidance
- According to (Holsapple & Sena, 2003) the major decision support characteristics of a vertically integrated system are as follows
- Repository to facilitate interactions
- Repository to define, document, regulate actions
- Private knowledge repositories
- Public, shared repositories
- Customized request styles
- Flexibility in timing of requests
- Selects/deliver for unanticipated needs
- Derives via calculation, analysis, reasoning
- Customized result styles
- Facilitate communication within organization
- Facilitate communication across organizational boundaries
- Structure, regulate tasks—individual
- Structure, regulate tasks—joint
- Structure, regulate tasks—interrelated
- Structure, regulate tasks – trans-organizational

In adventure travel industry, vertical integration is not necessarily happening always but it is a hypothetical concept for their business model. There are vertical integrations as well as contractual obligations in a supply chain, whereas obligational contracting is an ongoing cooperative relationship with another channel member which is bounded by a legal agreement (Elram, 1991). In adventure travel industry also these models could be applicable but most importantly those need to apply for the industry as a virtual model and not necessarily a physical model.

This virtual vertical integration concept compelled to integrate its supply chain partners into one single system as a business system requirement. The best solution is

creating a hypothetical single system that will facilitate the vertical integration. The need for vertically integrated software system arises due to this type of virtual integration.

From another perspective, a vertically integrated system is a kind of system integration of different supply chain partners. In the broadest sense, system integration can be defined as the capability which enables all external and internal interested entities to a particular to define and combine all necessary inputs for a system and agree on a path of future system development (Hobday, Davies & Prencipe, 2005).

(Power, 2005) states that effective application of information technology to supply chain integration will reduce the level of complexity. He further elaborates the types of complexities as detail and dynamic complexities where detail complexity exists when there are many variables needs to be managed. Dynamic complexity exists where cause and effect are separated and difficult to associate, in both time and space.

According to (Gunasekaran & Ngai,2004) it is impossible to achieve for effective supply chain without an integrated information system, as the suppliers are from all over the world. They further state the need for an integrated information system to integrate internal and external activities of an organization.

As an alternative to a vertically integrated system for a business, we can integrate several information systems together in order to achieve the same objectives. The information system integration is positively affected to the organizational performance partially, such as financial performance and market performance except for the flexibility of the system and business process which is essential for dynamically changing business environments (Chapman & Kihn, 2009).

Also being flexible is one of the key attributes of a supply chain based information system. (Gunasekaran & Ngai, 2004) stated that a commercial enterprise information system needs to maintain flexibility in order to accommodate the individual organizational characteristics. This is something we lack in the integration of different information systems over a single vertically integrated enterprise system (Chapman & Kihn, 2009).Adding to this, (Akkermans, Bogerd, Yucesan & Wassenhove, 2003) illustrate that mass customization is a key benefit we can get

from ERP, which is a kind of vertically integrated enterprise software system that goes beyond the capabilities of a typical in-house developed enterprise business software system.

Integration of multiple systems together may not be convenient for the end user, since its user interface designs and other common functional features can differ from system to system. Users are generally comfortable with a single system which uses the same UI design and same common functional features like reporting, insert and update of data etc.

To achieve vertical integration we can use two types of software systems

- Build a single vertically integrated system

This refers to developing a customized business application or using an ERP with customized modules according to the business needs.

- Integrate multiple information systems used for different purposes

This is in a situation that your organizations may use different information technology apps and tools from a different perspective to manage your supply chain. For example, you may use CRM to manage customers, an ERP type mini business application for internal operations, and a web portal for interact with travel agents.

At the end, you want to integrate this multiple platforms together linking them as data inputs or information outputs of each of the system.

2.5 Types of Integrated Software Systems

2.5.1 CRM

What is CRM?

CRM stands for Customer Relationship Management. According to various similar definitions available for CRM, it is a strategy for managing all your company's relationships and interactions with customers and potential (future) customers. Technically, it consolidates all customer related information and documents to a single CRM database and allows the business to manage its customers more efficiently and effectively.

There are a few advantages a business can gain by using a CRM. One is you will be able to maintain a single, centralized and non-duplicate customer base which essentially leads you to save the existing customer base even after your sales team members leave you (Hendricks, Singhal, & Stratman, 2007)

CRM has also brought the power of understanding customer needs individually, which is something businesses had even in very primitive marketplaces but had lost its track once mass production era was started.

CRM also helps to link your front office (Sales & marketing, Customer service) with your back office (finance, HR and Logistics) through various customer contact points such as email, fax, internet, call center, advertisement, telemarketing etc.

What are the factors affecting the successful implementation of a CRM system?

For a successful implementation of a CRM in a company, you need the knowledge of technology as well as customer focus business process re-engineering. Failing to fulfill either requirement would fail the entire CRM implementation (Chen & Popovich, 2003)

According to (Croteau & Li, 2003) following are the factors affecting the successful implementation of CRM system

a) Process fit

Process fit is about designing the CRM system with a correct understanding of CRM process which involves processes like customer interaction, personalization, sales channel, and after sales service.

b) Customer information quality

Customer information quality is the output produced by the CRM system as perceived by the system users. However, the customer information is not merely the data about customers. It should be built the insights about customer needs and market behaviours and should empower business to take necessary decisions in ever-changing market environments.

Customer information quality can be measured by the followings:

- Integrity of customer information

- Usefulness of customer information
- Support of scoring and segmentation information
- Forecasting the customers purchasing power

c) System support

System support itself measures its performance. It is measured by using the characteristics of the system such as reliability, response time of the system, data accuracy, System flexibility and ease of use

According to (Alshawi, Missi, & Irani, 2011) there are "factor groups" which influence the successful implementation of a CRM System. Those groups are:

a) Organizational

Organizational factors stand for the factors that are related to structural, operational, human, and managerial sides of the business including Staff ICT skills, Managerial ICT skills, Organization size, Internal barriers, Support, Funding, Strategy, Business objectives, Customer response/attitude, Government, Competitive pressure, External barriers, and Suppliers

b) Technical

Technical factors refer to factors related to the soft and hard aspects of ICT such as infrastructure, software selection criteria, implementation and integration cost, complexity etc.

c) Data quality

Data quality factors refer to the factors that relate directly to the concept of data quality and how it is being conducted in the context of CRM adoption including evaluation of the data quality tools & processes, evaluation of the quality of customer data, customer data infrastructure, customer data type’s classification and customer data sources classification

2.5.2 ERP

What is ERP?

ERP stands for Enterprise Resource Planning even though its fully qualified name does not stand much for what it is capable. However, ERP is a complex business

process management software which manages a lot of processes related to human resource, technology and services.

According to (Umble, Haft, & Umble, 2003) following critical success factors affect the successful implementation of an ERP system

a) Clear understanding of strategic goals

This should answer the question why the organization needs to implement ERP in order to achieve their long-term goals. Goals must be clear and scope should be defined precisely.

b) Commitment by the top management

This is critical because top management is usually involved in setting the company's long-term goals and they are the authorized people for changing or redesigning the business process if needed.

c) Excellent project management

This is very important to avoid exceeding the budget allocated to ERP implementation which is usually a substantial amount of the company's overall budget and maybe it is too difficult to afford to allocate extra funds immediately. This requires clear definition of objectives with development of both a work plan and a resource plan alone with a traceable project progress mechanism.

d) Organizational change management

ERP is not only a process of implementing a software, it also needs to restructure company processes and positions in order to be compatible with ERP's input and output to align with the company's goals and objectives. Employees may resist and deny embracing such changes as part of natural human behavior. To overcome such situations, it is important to have a good organizational change management system

e) A great implementation team

The ERP implementation team needs constantly to communicate with the management but they should be empowered to make their own decisions when necessary.

f) Data accuracy

For the availability of correct data through ERP, educated users are necessary to enter correct data into the system. And also, proper validation procedures should take place to avoid input garbage data. At the same time, you will have to force every employee to engage with the ERP instead of the old system and the best way of doing that is to completely eliminate the old system.

g) Extensive education and training

This might be the most widely recognized critical success factor. The user training preferably should start even before the implementation. Also the budget needs to be allocated for proper user training. Historical data proves that allocating 10-15% of the user training budget out of the total ERP budget would give 80% of chance implementation success.

h) Focused performance measures

This is about assessing the impact of the ERP to the overall business. This might include the gross profit margin, on-time deliveries, customer order-to-ship time, inventory performance, vendor performance etc.

Furthermore, the system implementation should tie with compensations. Otherwise the required motivation will not last and hence a slow moving, out of budget and out of timeframe project will likely be the result.

i) Multi-site issues

Multi-site issues happen when the company has a few or more remote sites (geographically) if it is too risky and difficult to implement ERP once in all sites. You can select a pilot site and implement it. Upon success and the lessons learned from the pilot site, you can continue implementing the ERP in other sites as well. It is better to note that company cultures may differ from site to site (ex: two countries) even though the ERP is centralized and common across the company.

2.5.3 Enterprise Content management software (ECM)

Enterprise content management systems involved in technologies capture, manage, store, preserve and deliver content and documents related to organizational processes. It mostly focuses on Business to Employee (B2E) workflows. Some of the commonly known ECMs are Microsoft Share Point and Oracle Content Management

According to (Paivarinta & Munkvold, 2005) the following objectives are expected to be achieved by a successful implementation of an enterprise content management system.

a) Improved internal and external collaboration.
b) Value-added or new customer services and products involving digital content.
c) Reliability and quality of information contents.
d) Modern and professional image of the enterprise in the eyes of its stakeholders.
e) Efficiency, effectiveness, and flexibility of knowledge work and business processes, including reuse of previously created content, metadata, templates, and navigation aids.
f) Meaningful knowledge work, involving easier and less tedious human routines for content management.
g) Organizational memory recording the practice, history, and transactions of the enterprise.
h) Direct cost savings in information processing operations and facilities.
i) Satisfying external regulations and standards.
j) Directly or indirectly governing the enterprise's information management.

2.5.4 Supply chain management software

Supply chain management software (SCMS) is the software tool or module used in executing supply chain transactions, managing supplier relationships and controlling associated business processes

It commonly includes:

- Customer requirement processing
- Purchase order processing
- Inventory management
- Goods received and Warehouse management

- Supplier Management/Sourcing

2.6 Factors Identified

From the above literature review, we have identified the following factors /variables related to the vertically integrated systems which may impact significantly on the management of adventure travel industry.

- Flexibility of customization
- Data quality/data accuracy
- Customer focus
- Risk and Nature of the Adventure Travel Industry

Also with the Industry experience and as a close observer the following factor can also be affected significantly for the management of adventure travel industry.

- Ability to integrate the system with other travel partners

3. CHAPTER THEREE – RESEARCH METHODOLOGY

Chapter Overview

This chapter consists of three sections including the sections which explain the theories related to qualitative research methodology by quoting phrases from different authors.

The main objective of this chapter is to discuss the research methodology followed by this research (Section 3.3) with conceptual framework used (Section 3.2) .Under these sections, the methodology used for this research and justification of the methodology selection will be discussed

3.1 Research Design

This research is a case study based research for Intrepid Group (Pvt) Ltd. Since there are a few major players operating as worldwide operational companies and a very few who use IT Systems heavily, the case study research model would be ideal for this type of research so that you can study the scope deeply focusing on real problems of the company.

The preliminary literature survey has been done to identify factors affecting vertically integrated systems for management of adventure travel industry and also one factor is identified by observations and pre-survey conducted with several key positions of the company

3.1.1 Literature Survey

A Literature survey has been done to identify factors affecting the success of vertically integrated software systems for adventure travel industry. Apart from those, one factor has been identified by pre-interviews conducted and observations made.

- **Flexibility of customization**

This is about system flexibility to support new features or new business requirements easily. Under these system customizations, integration with other systems will be taken into consideration

- **Data quality/data accuracy**

This factor is about data quality and accuracy which enter through the system. Under this factor, user awareness, how system enforce enter quality data and how

management enforces system users to enter quality and accurate data will be discussed.

- **Customer-centric and maintain duplicate free customer base**

This factor will be focused on how well systems are supporting customer management which eventually help to obtain greater customer satisfaction.

- **Risk and Nature of the Adventure Travel Industry**

This is about the nature of adventure travel industry. It focuses on business models used in selling and operating trips, market size, supply chain activities etc.

- **Ability to integrate the system with travel partners**

This factor is about IT system integrations with other travel partners. Under this, reasons for integration, methods used to integrate with various types of partners and pros and cons of such integrations will be discussed

3.1.2 Data collection

Data collection will be done by in-depth Individual Interviews based on semi-structured questionnaires and open-ended questions

There are several methods to collect qualitative data. Some of them are described in the section 3.1.2.1 below.

3.1.2.1 Data collection methods

Questionnaire: A questionnaire is prepared and provided to the potential participants. This is a more common data collection method in quantitative research methodology.

Individual interview: An individual interview is a conversation between two people that has a structure and a purpose. It is designed to show the interviewer's knowledge of the research topic.

In most of the interviews**, a** limited number of participants have been selected by the interviewer since the interviewer believes that the selected participants have in-depth knowledge assuming that.

1) they have firsthand experience on the subject you study

2) they have particular knowledge or expertise regarding the group under study

Focus group discussions: A focus group discussion is an organized discussion between 6 to 8 people. Focus group discussions provide participants with a space to discuss a particular topic, where people are allowed to agree or disagree with each other

Observation: In the context of qualitative research, direct observations provide the opportunity of absorbing and noting details, actions, or subtleties of the field environment. Not all qualitative data collection approaches require direct interaction with people. Observation is a technique that can be used when data cannot be collected through other ways, or those collected through other means are of limited value or are difficult to validate.

Out of the above methods, the most suitable method to collect data for this research is “Individual interview” method since I have selected a set of people from Intrepid Group based on parameters such as their experience in the group, role and expertise and domain knowledge.

3.1.2.2 Interview as a Qualitative data collection method

Interviewing can, at one extreme, be structured, with questions prepared and presented to each interviewee in an identical way using a strict predetermined order. At the other extreme, interviews can be completely unstructured, like a free-flowing conversation. Qualitative researchers usually employ "semi-structured" interviews which involve a number of open-ended questions based on the topic areas that the researcher wants to cover

There are several types of interviews. The author has to select one kind of interviewing method considering the type of technology which is available and the convenience of the individual the author is interviewing, and how comfortable the author feels talking to people. There are four methods of interviews; (a) Face to face interview, (b) Phone interviews including Skype or Viber calls, (c) Email interviews and (d) Chat/messaging interviews.

3.1.3 Qualitative Analysis

Interview-based qualitative data collection produces a large amount of data. So the first step of data analysis should be the reduction of data through coding and categorization. The purpose of coding is reducing and rearranging your data and integrate into form theory. Codes are labels given to units of texts which are later grouped and turned into categories. Coding is an iterative process as one has to return to data repeatedly to increase the understanding of data.

According to (Lacey & Luff, 2009) analysis of qualitative data usually goes through some or all of the following stages

1. Familiarization with the data through review, reading, listening etc
2. Transcription of tape-recorded material
3. Organization and indexing of data for easy retrieval and identification
4. Filtering of sensitive data.
5. Coding (may be called indexing).
6. Identification of themes
7. Re-coding
8. Development of provisional categories
9. Exploration of relationships between categories
10. Refinement of themes and categories
11. Development of theory and incorporation of pre-existing knowledge
12. Testing of theory against the data
13. Report writing, including excerpts from original data if appropriate

Coding units - coding begins with selecting coding units, words, sentences, paragraphs and themes and those are the examples of coding units. The smallest coding unit is “words”. The largest unit of analysis is “themes”. When you are using themes as a coding unit, you are looking for the expression of an idea.

Categorization – categorization is the process of organizing, arranging and classifying coding units. In a situation where no theory is available you must generate codes and categories inductively from data. This is what has been called as **grounded theory**.

3.1.3.1 Qualitative Data Analysis Methods

Analyzing data is the key to obtain the better result from a qualitative research since qualitative analysis intends to transform the data into findings.

According to Patton (2002), no formula exists for that transformation but guidance is abundant. It is important to realize that such guidelines are not applicable as rules. Applying guidelines require judgment and creativity. Therefore, prior to selecting an appropriate guideline, an effort is made to understand the applicability of the prominent qualitative data analysis methods. Qualitative data analysis methods are capable of providing a guideline to condense the bulk of the data into analyzable units by creating categories with and from the data itself (Coffey and Atkinson, 1996). Listed below are some qualitative data analysis methods:

1) Content Analysis.
2) Framework Analysis.
3) Open Coding.
4) Grounded theory/Constant Comparative
5) Logical Analysis.
6) Qualitative Comparative Analysis.
7) Analytic Induction.

Let's look at two of the popular methods use to analyze text based data in qualitative researches.

What is content analysis?

Content analysis is a procedure for categorization of verbal or behavioral data for the purpose of classification, summarization and tabulation.

There are two approaches for content analysis, which are inductive and deductive respectively.

In the inductive approach, codes categories or themes directly extract from data, while the deductive approach starts with preconceived codes or categories inherited from prior relevant theory, research, or literature.

Deductive approach:

Selecting the unit of analysis

Deciding and defining prior codes / categories

Data Coding

Revising Codes / Categories

Comparison of categories across cases

Inductive Approach:

Select the unit of analysis

Open Coding

Formulating preliminary codes out of data

Data coding

Revising codes

Developing categories / themes

What is Grounded theory?

Grounded theory is an inductive methodology. Although many call Grounded theory a qualitative method, it is not. It is a general method. It is the systematic generation of theory from systematic research. It is a set of rigorous research procedures leading to the emergence of conceptual categories. These concepts/categories are related to each other as a theoretical explanation of the action(s) that continually resolves the main concern of the participants in a substantive area. Grounded theory can be used with either qualitative or quantitative data.

Grounded theory analysis requires "theoretical sensitivity". This is described as an ability to see the research situation and its associated data in new ways and to explore the data's potential for developing a theory (Strauss and Corbin). Coding procedures in Grounded theory approaches include several coding techniques (Corbin & Strauss, 1990)

Open Coding - The process of breaking down, examining, comparing, conceptualizing and categorizing data. This is the first level of abstracting the data.

Axial Coding - A set of procedures whereby data is linked together in new ways after the open coding makes connections between categories. This is done by utilizing a coding paradigm involving conditions, context, action/interactional strategies and consequences.

Selective Coding - The process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development

In this research, I use Grounded theory to analyze and extract data which I found through in-depth interviews.

3.1.3.2 Qualitative Analysis Stages

Transcription: Almost all qualitative research studies involve some degree of transcription – the data may be tape-recorded interviews, focus groups, video recordings, or handwritten field notes.

Organizing Data: After transcription, it is necessary to organize your data into easily retrievable sections. You may wish to give each interview a number or code or to break up field notes into sections identified by date, or by context. Interviewees will need to be referred to by a code number.

Familiarization: The above procedures will have begun the process of familiarization. By this we mean the researcher is listening to tapes and watching video material, reading and re-reading the data, making memos and summaries before the formal analysis begins. This is an essential stage and is particularly important if the main researcher has not gathered all the data himself.

Coding: After familiarization with the material, it is necessary to do some preliminary coding (this would be called open coding in grounded theory).

Themes: Then identify themes or emergent concepts, and will engage in recoding to develop well-defined categories. In the grounded theory approach, it tries to ensure that all the emergent themes were generated from the data itself, although you might later incorporate other theoretical ideas in your analysis. A grounded theory approach would also be prepared to test ideas generated in early data analysis in further data collection.

3.1.4 Data Collection methodology

Data collection is more important and is a challenging part of any research as we have to get involved with external parties. These external parties are mandatory for our research as we are depending on their input. The author followed the following steps as a part of the data collection strategy

1) Prepare an open-ended questionnaire for the interview
2) Identify potential candidates for the interview i.e. CIO, GM, Team leaders and Managers etc.
3) List them with their contact numbers, address and basic profile
4) Introduce the author over Skype or through email if interviewee was unknown and make an appointment for the interview
5) Forward the Questionnaire prior to the interview so that the candidate could prepare for the interview
6) Conduct the interview and record the conversation with his or her permission
7) Transcribe the conversation
8) Send the Transcript to the interviewee for verification
9) Store the Transcript for analysis purposes

Based on the conceptual framework to be explained in section 3.3, a semi-structured questionnaire is designed. Refer the **Appendix A3** for the sample questionnaire with the intention of collecting information for the research project.

3.2 Conceptual framework for impact of vertically integrated systems to the management of adventure travel industry

Let's take a look at the research questions described in chapter 1

1) What are the **key success factors that affect the successful implementation** of a vertically integrated software system for adventure travel industry?

2) Is a **single vertically integrated system or integration of multiple different systems** being more effective and easy to implement for better supply chain management?

Two main themes have been developed based on research questions and it is listed in Table 3.1

Table 3.1 Main themes

1	**Key success factors that affect the successful implementation**
2	**Single system or integrated systems.**

Figure 3.1 describes the conceptual framework developed based on the literature review, personal experience and knowledge about the industry.

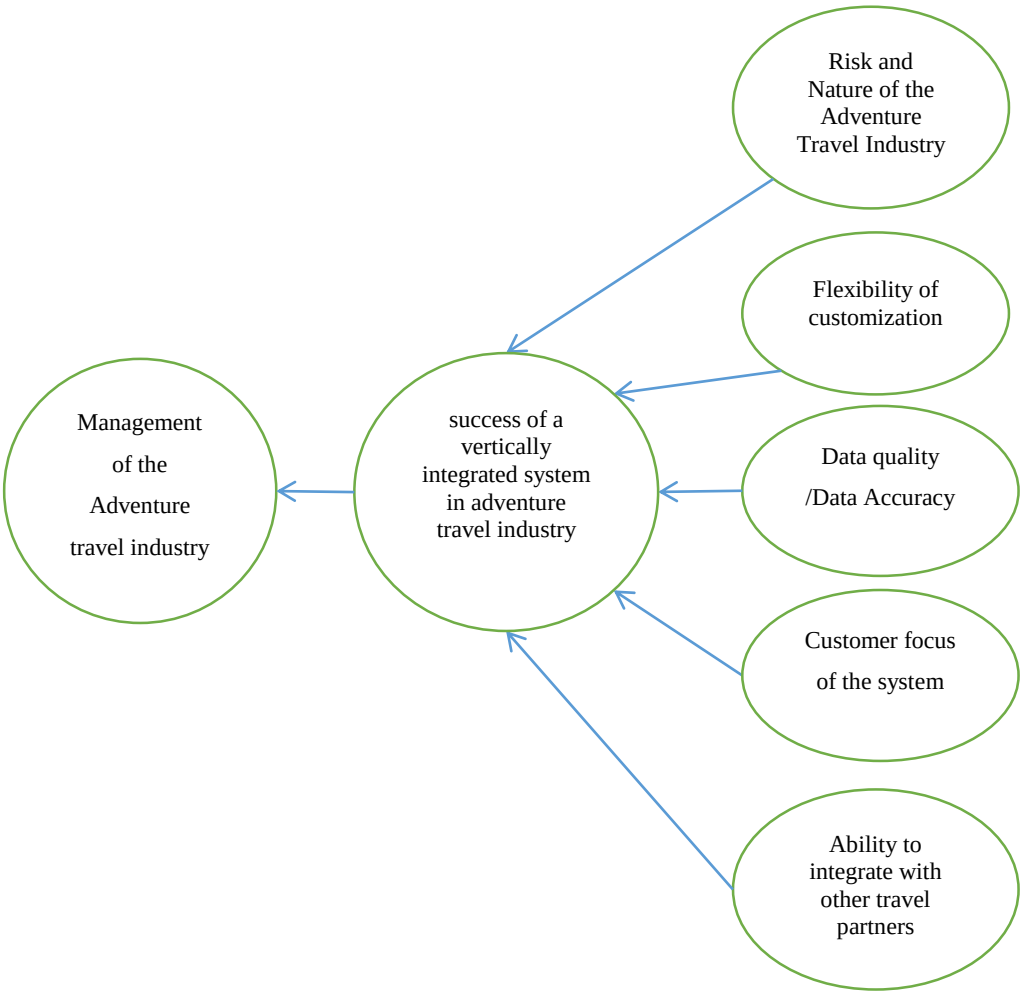

Figure 3:1 Management of adventure travel industry and Impact of vertically integrated systems

3.3 Research methodology

3.3.1 Qualitative Case Study Methodology

After studying many different types of qualitative research, the case study methodology is selected for this research.

3.3.2 Research methodology justification

In a case study method, your subject of analysis can be a person, place, phenomenon, process, incident or an event. In this research Intrepid Group has been selected as the place and the impact of vertically integrated software systems to the management of adventure travel industry as the phenomenon.

In a case study method, the focus of the the study is to answer how and why type of queries. In this research also there are such questions to be asked.

Adventure Travel Industry is a large industry. There are many players in the industry in different scales. There are ranges of companies which are operating from global level to the small geographical areas such as villages.

Hence it is not an easy task to connect with all these players with different market sizes who have different values and pick them based on geographical regions they operate or different customers they serve based on various measurements such as demographics.

Therefore, it is always better if we can pick a player who operates almost all the continents of the world and serves different customer levels based on their demographics, interests, and income. In such a case, it is needless to say the player we select should be a multinational and large-scale company considering all these requirements.

In our case I have selected one of the biggest players from global perspective, Intrepid Group which is a multinational large company with many trip brands across 19 countries in the world and operating trips for almost all the continents of the world.

3.3.3 Population, Sample selection and Sample size

Based on the research problem statement I have selected top and middle management positions from **Intrepid Group** and **Intrepid Colombo** as sample population. The reason why I selected **Intrepid Colombo** over other Intrepid offices around the world is since Intrepid Colombo is the global service center for Intrepid Group covering most of the services such as IT, finance and HR etc., they have better understanding about IT systems use and business requirements.

When the population is selected, we consider positions that engage more with the Group's IT business systems, IT policy making and people who are involved in design, development and maintain business processes running on IT. The sample consists of following positions representing each of the key positions identified in Intrepid Group based on the above set of criteria.

3.3.3.1 Group CIO – Michelle Beverage

She is responsible for information technology policy making and implementation decisions for Intrepid Group. She is based in Australia. Since Intrepid Colombo is the global service center for the group, it has also fallen under her leadership

3.3.3.2 Group business system support team head –Sarah Wallace

Sarah represents Global business system support team located in Australia. Their primary job is to assist the group's software development teams by clarifying requirements, prioritizing requirements that align with business needs and educate system users by drafting user manuals, release notes etc.

3.3.3.3 General Manager Sri Lanka (Intrepid Colombo) and Peak DMC – Anuruddha Karunathilake

Anuruddha is the General Manager for Intrepid Colombo and Peak DMC Sri Lanka. He oversees everything in Sri Lankan office including the ground trips running by DMC Sri Lanka. Also he was one of an architect of the current software business system.

3.3.3.4 Manager Technology Service Sri Lanka –Bathiya Perera

Bathiya is the manager for Technology service Sri Lanka. Under him, Group ICT team, engagement team (web) and business system development team (Sri Lanka) are functioning.

3.3.3.5 Travel Operation Manager Sri Lanka – Thilanka Karunarathne

Thilanka is the travel operations manager for Sri Lanka. His teams are responsible for customer contact, booking amendments and follow-ups

3.3.3.6 Peak DMC Sri Lanka Manager – Kosala Abeyrathne

Kosala is the manager for peak DMC Sri Lanka. DMCs are the entities that actually run trips for Intrepid Group. There are around 20 DMC's across the world covering US and Canada, India and Sri Lanka, UK and Europe, South East Asia, Turkey and the Middle East, Africa and South American regions

3.3.4 Research instrument development

Four factors are identified by the preliminary literature survey and one factor is identified by the preliminary interviews done with key people of the company. A set of open-ended questions have been prepared for each factor to outline the interview questions but not limited strictly only to those questions prepared, since asking more questions can take out more insightful findings

Table 3.2 mapped factors and open-ended interview questions with research questions

Table 3.2: Factor and questions

Research question	**Factor**	**Questions**
Key success factors that affect the successful implementation	**Risk and Nature of the Adventure Travel Industry**	Q1 Do current business systems help to manage supply chain activities of the company? Q2 As per your opinion, what improvements need to be done in the business systems for improved supply chain management? Any other comments?

Research question	Factor	Questions
	Flexibility of customization	Q3 Do you think changing a business rule, is a cumbersome process to deal with the existing system (Starship business system) Q4 Can we introduce new sales models, processes to business easily? Q5 Does the current system outage time during a release, affect business significantly? Q6 What are the key areas you would like to automate or self-customized by users?
“	**Data quality/data accuracy**	Q7 How important is the accuracy of data for the success of the business? What are the consequences that had to be faced failing to provide accurate and quality data? Q8 How the system users have been trained to input accurate and quality data? Is there any specific training? Guidelines? User manual etc.? Q9 Do new validation rules introduced to business systems (Starship) help to prevent entering poor quality, inaccurate data?

Research question	Factor	Questions
		a. Will it restrict the flexibility of entering data? (ex: different date time formats across the world, telephone numbers with -, + characters)
“	**Customer focus of the system.**	Q10 What drives the company to migrate customer contacts into cloud-based Salesforce (a CRM) System? Q11 What disadvantages have you faced with current systems in the context of customer management? Q12 What is the process we use to follow on customer feedback in each of the scenarios? a. About overall company b. About a particular trip c. About a particular tour leader d. About any supply chain component associated with a

Research question	Factor	Questions
		trip ex: Hotel room, Flight, Bus
	Ability to integrate the system with other travel partners	Q13 What is the importance of integrating system with other travel partners to the business? a. Who are the partners b. Context of the partners Q14 How helpful is the recently built "Public API" to integrate with travel partners? a. Ex: Number of bookings made through API since date of deployment Q15 Any future Improvements planned to integrate with travel partners

To have a clearer view, table 3.3 mapped research objectives and open-ended interview questions with research questions.

Table 3.3: Research objective and question mapping

Research question	Research objectives	Questions
Key success factors that affect the successful implementation	**Find out critical success factors that have affected the implementation of vertically integrated software systems in adventure travel industry**	Q1 Do current business systems help to manage supply chain activities of the company? Q2 As per your opinion, what improvements need to be done in the business systems for improved supply chain management? Any other comments? Q3 Do you think changing a business rule, is a cumbersome process to deal with the existing system (Starship business system) Q4 Can we introduce new sales models, processes to business easily? Q5 Does the current system outage time during a release, affect business significantly? Q6 What are the key areas you would like to automate or self-customized by users? Q7 How important is the accuracy of data for the success of the business? What are the

Research question	Research objectives	Questions
		consequences that had to be faced failing to provide accurate and quality data? Q8 How the system users have been trained to input accurate and quality data? Is there any specific training? Guidelines? User manual etc.? Q9 Do new validation rules introduced to business systems (Starship) help to prevent entering poor quality, inaccurate data? a. Will it restrict the flexibility of entering data? (ex: different date time formats across the world, telephone numbers with -, + characters) Q10 What drives the company to migrate customer contacts into cloud-based Salesforce (a CRM) System? Q11 What disadvantages have you faced with current systems in the context of customer management? Q12 What is the process we

Research question	Research objectives	Questions
		use to follow on customer feedback in each of the scenarios? a. About overall company b. About a particular trip c. About a particular tour leader d. About any supply chain component associated with a trip ex: Hotel room, Flight, Bus Q13 What is the importance of integrating system with other travel partners to the business? a. Who are the partners b. Context of the partners Q14 How helpful is the recently built "Public API" to integrate with travel partners? a. Ex: Number of bookings made through API since date of deployment Q15 Any future Improvements

Research question	Research objectives	Questions
		planned to integrate with travel partners
“	**Find out the suitable system implementation approach for small group Adventure Travel industry.**	Q1 Do current business systems help to manage supply chain activities of the company? Q2 As per your opinion, what improvements need to be done in the business systems for improved supply chain management? Any other comments? Q3 Do you think changing a business rule, is a cumbersome process to deal with the existing system (Starship business system) Q4 Can we introduce new sales models, processes to business easily? Q13 What is the importance of integrating system with other travel partners to the business? a. Who are the partners b. Context of the partners
“	**Find out business impact of vertically integrated software systems**.	Q1 Do current business systems help to manage supply chain activities of the company?

Research question	Research objectives	Questions
		Q5 Does the current system outage time during a release, affect business significantly?

4. CHAPTER FOUR –DATA ANALYISIS

Chapter Overview.

This chapter describes the research findings in detail and has three sections. Section one is research findings (Section 4.1), section two provides a summary of the research findings (Section 4.2) and section three is Data Analysis (Section 4.3). The Research Findings section has been basically derived from the interview transcripts which are presented under the theme headings.

Abbreviation codes have been used to identify interviewers as stated below:

GMSL - General Manager Sri Lanka.

CIO - Chief Information Officer. Intrepid Group

MTOSL- Manager Travel Operations Sri Lanka.

LBSS - Lead Business System Specialist.

MTSL - Manager Technology Sri Lanka.

MDMC - Manager DMC Sri Lanka.

4.1 Research findings

The data collected through interviews have been converted into transcripts and the transcript information is presented under subsections related to the themes identified in the Conceptual Framework such as nature of the adventure travel industry, flexibility of customization, maintain a customer-centric database, ability of integration with travel partners and data quality and accuracy.

4.1.1 Risk and Nature of the Adventure Travel Industry

This section is divided into two subsections, current business and supply chain management system and the future of those systems. In this section, interviewees are asked about the nature of the industry, how the current business system works, the challenges they are facing, and how they plan to overcome those challenges

4.1.1.1 Current business system and supply chain management.

GMSL mentioned that the current business system mainly supports two sales models and is limited only for that. But it had features to support business models like retail model in early days but not anymore. So it has been extended to facilitate new

models up to some extent but not in a satisfactory level. Since adventure travel industry is very dynamic, the system should support more models such as joint venture and commission override.

Likewise new business models are restricted by system inflexibility, he mentioned that not only business models but introducing some new types of products (such as adventure cruise (ships) or sailing products) into the starship is also a fairly difficult since the starship has focused on selling their core product but the core product is a niche product which is about 2% of the entire adventure tourism market. Because of the core product supportiveness is essential to the business. Since they had difficulties to find a suitable system from the outside market they decided to build a new system from scratch instead of purchasing an existing system. Also he mentioned that enhancing the current system to support these other products is fairly risky since to cater to such requirements they will need to put a lot of effort and in case if the system fails, business would lose lots of money invested on it which they can't afford at the moment.

CIO Mentioned that this system is working very well even though it does not fit very well into today's context such as integration work. And she has mentioned that the system is built upon out of technology code and it is a big risk to the organization because, in case if they need to add latest features they will have to modify the entire system.

LBSS mentioned that the current system is fairly old and as a result of that business would have to move to several new systems like CRM and new DMC system to manage supply chain activities. Specially DMC's supply chain is not managed well enough by the current elements system and they are looking for a new third party system.

MTSL said current system is adequate to run the business but it needs to be adjusted to support future challenges such as the growing trend of fully independent travelers instead of small group travelers.

4.1.1.2 Future

GMSL mentioned that the current system is supporting to sell core product of Intrepid Group which is about 85% of total sales. What they planned for future is,

isolate the current system to the core product sales and develop interfaces from main systems to other systems which support other types of products. He mentioned that the biggest disadvantage they have identified in the current system is the inability to adapt quickly to the market opportunities available since there are concerns over different product types. He also indicates that they will be moving most of the functionalities into websites.

CIO mentioned that as per her opinion the key strategy would be integrating different systems together rather than try building all functions together in a single system. For instance, Salesforce which is a CRM has been brought down to the company and integrated with Starship. The reason is, Salesforce is a more customer oriented system than booking oriented starship. They will be able to do more customer oriented marketing with Salesforce. Also, they are hoping to go for more direct bookings over indirect bookings so that they don't need to pay commissions for indirect bookings. To do that, they are hoping to improve booking websites with efficient SEO techniques.

Also, she mentioned that the challenge ahead is "vertical integrations" of systems since they run trips, sell trips and packaging trips (marketing).DMCs are the entities that run trips and they are using Elements web based system for their operational purposes which is integrated with starship database. Elements will feed the data required for finance system (Navision) but not in the way that finance team wanted. So having one system with subsystem portals will not work as per the way they need. Those issues will need to be addressed in future with integrating the different system with each each other.

LBSS mentioned that currently they are moving into Salesforce CRM and they are also looking for options to purchase a new system for DMC which will eventually replace the elements web portal. She is confident that once both are completed they will be in a good position in terms of managing their entire supply chain.

4.1.2 Flexibility of Customization

4.1.2.1 Flexibility of the current system

GMSL mentioned that changing a business rule or a process in the system is a cumbersome process to deal with, since they need a developer and tester to develop and test even a small feature request requested by the business and in some of the

other systems it is much easier to customize features by users themselves compared with the starship.

Also when he was asked about the ability to introduce new businesses and sales models to the system he replied with similar opinion he has mentioned in above 4.1.1.1which is,

“Likewise new business models are restricted by system inflexibility, he mentioned that not only business models but introducing some new types of products (such as adventure cruise (ships) or sailing products) into the Starship is also fairly difficult since the Starship has focused on selling their core product”

Also, he has mentioned, when deploying any system updates since Intrepid is a 24x7 operated company, ideally the system outage time should be nil.But practically it is impossible and we should have brought the system outage window minimum as much as possible. Currently, there is a release scheduled on Sundays every two weeks to update the system for a two-hour outage window. Since it is a Sunday and two-hour outage window timeframe, release outage time is not severely affected to the business as it does on a weekday or a Saturday

The CIO affirmed that it is cumbersome to change a business rule because the code written for their system is very old and outdated. She mentioned that as the main reason they have to ask for the help of a developer even to do a small change sometimes. When it is about introducing new business models to the system, she mentioned that it is a tricky question because some of the legacy codes for supporting such new businesses are still there. For example, when they have a partnership with TUI group as peak adventure travel, they have shared a brand called Exodus. Currently that partnership is no more and Exodus is not available in their system .But the code remains. Therefore when extending their system into a new brand they will be able to use the existing code used for Exodus with necessary configurations. But when it comes to adding trending businesses like fully independent travelers, Starship does not have that luxury yet.

Also, she mentioned that since they are a 24x7 company, planned system outages for deployment changes affect their operations, and the development team is working hard to minimize the deployment timeouts as much as possible

The LBSS mentioned that it is really difficult to do a slight change even and has to put lots of effort to do a change; she gave some examples too. Also, she mentioned that there are outside business opportunities but simply because they can't fit it into their system, they have to disregard those.

Regarding planned outages, she mentioned that it has improved significantly than early days. Outage time has been minimized over a period of time. Since planned outages will trigger on Sundays, the impact is further minimized since most of them wouldn’t use Starship but will use web booking engine only by direct customers

MTOSL mentioned that they extract some vital reports which are extracted on weekly basis and since some of the filters are not there they have to manually edit it and send it to the business Also they remove some of the unwanted data manually through hours and hours.

MTSL's opinion is slightly different from others perspectives. Since the development process is fully agile, it is not very difficult to accommodate a new change or feature request. But he admitted that it can vary from request to request and there is room for improvement.

When it comes to system outages, he divided outages into two categories planned and unplanned. He agreed that if they can keep outage window less than 30 minutes for biweekly releases it is good since they are operating as a 24x7 company. But he was worried about unplanned outages due to firewall and fiber link breakdowns. But the only silver line he sees in those unplanned outages is that now they have a clear process to escalate those issues through a proper communication channel by Yammer.

4.1.2.2 Features should be automated

GMSL suggest that since 85% of the business is around their core product, they can isolate the current system to support the core product and create interfaces to other systems to handle other types of products. But when asked about the ability to introduce self-customizations features by the users themselves, he mentioned that investments need to develop such features is not there for travel company like them. He mentioned that they were looking for such external systems in early days before they developed Starship but none of them fitted into this business either from cost (ROI) or requirement perspective or both the perspectives

CIO mentioned that business is working on to decide how much a customer can arrange a self-customized trip on his own (Automation). Even though technology can do anything, she is not willing to fully automate the trip reservation process since the customer contact at booking process is an added value to the business and customers. For instance, when a salesperson contacts a customer, he can suggest some advanced options for the customer such as a better quality room or an urban adventure trip etc. That will actually help customers to have a more enjoyable trip and this will help to strength the relationship between customer and the business.

LBSS mentioned that she likes to automate small things such as adding new vessels and new airlines to the systems for VRTT products. Also, she is willing to have an automated functionality to replace existing add customized product by users functionality, which is a manual functionality.

MTOSL mentioned that they are looking forward to options to be provided for fully independent travelers where customers will be able to log on to a portal and add components to make a tailor-made trip on their own. Also, they like to have automated reports including filters with the ability for trimming unwanted fields so that they can save hours of works spent on manual filtering and editing

MTSL said system deployment (release process) should automate completely since they are a 24*7 operated company. He further mentioned saving even 5 minutes will add a lot of value to them since they are a globally operated company.

4.1.3 Data Quality and Data Accuracy

4.1.3.1 Important to the business

GMSL said that since they run a lot of deals with supply chain partners such as hotels, transport providers etc., it is important to have accurate data in the system. For instance, seasonal prices may differ for the same accommodation hotel from season to season. So to do accurate pricing you need that information correctly. Otherwise, they will be ended up losing their business or turning into a profitless business. Also he mentioned that a lot of research has proved customer data is important to targeted marketing which eventually helps to maintain better customer retention and return rate.

CIO mentioned the importance of the data to the business can tackle in two ways. First one is from the pricing perspective, if they enter incorrect pricing in elements level, it could affect the profitability of the company. Secondly, if they entered customer data incorrectly such as meal preferences, passport details etc. it could lead to an unsatisfactory trip experience for the customer

MTOSL said that if the data entered are incorrect it would be an unpleasant experience for a customer, such as failing to inform a hotel change in advance, meal preferences not tracked correctly etc.

LBSS mentioned that it is important to the business to maintain a single customer view. If the data entered for a customer are different on each of the bookings that the customer had made in the past, they will not be able to match that customer with his past with Intrepid. On the other hand, if DMC put incorrect prices, it will affect to the profitability of the company

MTSL mentioned that data accuracy is important specially during peak seasons where they get more booking requests and may not have time to double check the data of all requests. So he believes entering accurate data initially will mitigate any risk associated with entering wrong information and that will be a great advantage when acquiring large booking requests.

4.1.3.2 Steps taken to improve data quality

GMSL mentioned that even though some validation rules are in place with the current system, internal staff needs to understand why they need to enter valid data. For instance, they can enter any email matched with the valid email format just for the sake of creating the booking. His point was, could that count as valid information? According to him what they did differently this time is other than implementing validation rules in the system they have conducted educational and training sessions for the staff to ensure that they will enter valid data into the system. He also has mentioned that a person who does booking outside the company (for instance direct customers via websites) Is likely to enter less invalid data since they are always keen to send correct data to make their booking successful and the faulty data always coming from Intrepid’s staff

When the CIO was asked about the possibility of introducing a new supplier portal to enter rates for suppliers on their own so that could minimize the incorrect data entered by DMC staff to Elements, she replied as per the nature of the industry 70% of the accommodation partners are small houses and guest houses who don't use computer systems at all .So she doubted the usefulness of such a system.

She also said BST team has prepared user manuals and training videos for the staff to convince and motivate them about entering accurate data into the system. Adding to that she mentioned salespeople are always in a hurry to create bookings as quickly as possible so that they can earn commissions. But they may not worry about accurate data, or in the process they might skip entering some of the non - mandatory data which will have to be captured the next time on confirming the booking. What she suggests is that it is good to have the data completed in the first place so that when the next time the business contacts its customers, business has accurate and meaningful data about the customer. She makes an important suggestion saying that they are planning to award a separate commission to salespersons for entering accurate data and it will be finalized soon.

LBSS has mentioned that they are conducting training sessions for sales consultants about new validation rules framework. Also she has mentioned that there will be a mechanism for the sales team to be awarded incentives for accurate data. Also she has mentioned that even though validation framework has been introduced to the Starship, it still is not applicable for websites and there are malformed data coming through websites and manual cleanup is needed at the EOD based on a report sent by a business system development team. So she urged the importance of introducing validation rules to web booking engines as well. Also she mentioned that they do continuous monitoring on sales consultants inputs on Starship by running a report EOD and if they found any malformed data entered by a sales consultant they will advise him to avoid it in next time. So in that way, they ensure improved data quality of the system. Further, she has mentioned that error messages given for validation errors should be exactly about the specific error i.e. if there is an invalid character, it should highlight the invalid character rather than indicating a range of invalid characters which is difficult to trace quickly.

MTOSL has mentioned that they have set the data accuracy as a KPI to their team in order to ensure that his team will enter quality data into the systems. He also said that

they have stopped entering dummy data which they did with the intention of completing the booking in the system and parallel to that there is a data cleanup project going on to clean any malformed data with the support of the business development team.

He further mentioned that with the data cleanup project and new Salesforce development now it is convenient to match customer data in a single screen. Also he admitted that previously they didn't have a proper training plan to train their staff about these changes but now they have such a plan implemented and since some of the data entering practices are different from region to region (e.g. Europe and the USA use two different date formats), they have created a common user manual alone with different user manuals specified for different regions and shared with global employees through a SharePoint portal.

4.1.4 Customer focus of the system

4.1.4.1 Starship Customer Management and Salesforce Migrations

GMSL mentioned that the main disadvantage in Starship in related to customer management that it is not a customer system but a booking system. Further explaining he mentioned that anyone can create a booking without a customer but cannot create a customer without creating a booking in Starship. Also they want a single customer view which is not supported by Starship. Therefore lots of customer duplicates were there.

He also said that there are many customer contact points to the business such as a customer enquiring about a trip, requesting a broacher or visiting the company's YouTube channel etc., but none of them are tracked at the moment by Starship because Starship was architected to be a POS system initially. Therefore, their attempt of building customer functionalities on starship was not very successful

He also mentioned that they cannot implement all functionalities Salesforce provided in Starship, since it is not cost effective and will have to put a great effort for reinventing the wheel. So considering all these facts and reasons, Intrepid decided to go for Salesforce and integrate it with Starship. So each system will serve for each one's purpose

Also when GMSL was asked about the investment done on Salesforce is worth or not, he replied that they should use Salesforce as much as they can so that they can justify the amount they spent on Salesforce licensing, consultation cost etc. He mentioned that currently there is another project called marketing cloud which is going on other than the customer data migration project. So at the end of the marketing cloud project, they will be able to do all marketing activities from Salesforce. Therefore he is confident about that they are heading to the directions where they can use Salesforce for marketing and servicing.

However he stated that Salesforce would never replace Starship in future because their orientations are different. Salesforce is a customer oriented system while Starship is a booking oriented system. These two systems will function independently with integration via Mule ESB (a java based integration framework).

CIO mentioned that every year the company paid back millions of Australian dollars to unhappy customers based on their feedback. Some are genuine complaints and some are not; and some people do it habitually and business can't track them easily because Starship doesn't maintain their trip histories and feedback very well from a single customer point of view. However they could have performed better if they had something similar to Salesforce which shows a single customer view with their linked trip histories. So she pointed out that this is one of the disadvantages in the current system and she is confident that this will be overcome once old data are migrated into Salesforce. Also she has mentioned that they brought Salesforce into corporate KPI

LBSS mentioned that if she ranks Starship and Salesforce customer management functionality, she would rank them as 2 and 9 respectively from a 10 point scale. She told that Salesforce is good when you want to see a single customer point of view where you can find a particular customer's trip and marketing history and when it is come to the Starship such a tracing will be much more difficult.

MTSL mentioned that in the current system, customer data are everywhere and not linked properly with each other. For instance, customer details are in Starship, customer trips are hard to trace in one single view and customer feedback is in Elements likewise. He took an example of a customer who finishes a trip with Intrepid but who is not happy about the trip for some reason and he has mentioned it

in feedbacks.(It should be kept in mind that feedback gets saved in Elements against that particular trip and it is difficult to search customer wise from Starship upfront). What if after a few weeks if someone tries to sell another trip by merely filtering the contact details from Starship and without knowing that he has given an unsatisfactory feedback for his last trip? Definitely, it will not be a good situation for both parties. If all information required was in a centralized location, this situation could be avoided. MTSL is confident that Salesforce will avoid such situations in future and it will provide the single customer viewability with all necessary information

Also, he has mentioned the reason why business went to Salesforce. Anyone who uses Salesforce doesn't need to re-implement customer features from scratch in their systems. Salesforce has built-in features and you need to integrate your system data onto it. He also mentioned that he too is not quite sure how Salesforce licensing works. Since Salesforce is a license based product.it is extendable for features anyone wants to have and there is freedom of unsubscribing features that one does not want to have. So, the cost spent on Salesforce is affordable.

4.1.4.2 Customer feedbacks

GMSL has mentioned that they have already facilitated customers to rate their service in five different categories such as the overall trip, tour leader, accommodation, responsible tourism and transport. Additionally, they have two NPS's which are booking NPS and trip NPS.

CIO mentioned that she is not very happy about the current feedback system as it can be improved further by breaking the feedback process into more feedback milestones. She mentioned that normally they get good feedback for trips and tour leaders but when it comes to the overall feedback, the rating could be lower than trip and tour leader feedback because there is no specified feedbacks for pre-trip (booking process through a consultant) and post-trip follow-ups. So as per her opinion, isolating these areas can bring accurate feedback about each milestone so that the company can actually focus on areas where improvements are needed.

LBBS mentioned that DMC can see the ratings and feedbacks given for a trip, supply chain components and a tour leader since they are responsible for those entities. But they will not be able to see the overall ranking about the whole experience but

another responsible person may be able to see the overall ranking. Tour leader's incentives and increments are purely based on this feedback given by customers

MTSL mentioned that if they can divide the feedback process into different sections it would be ideal. For instance, in a pre-trip feedback, the customer can be asked for feedback about how fast a sales consultant was, website responsiveness etc.

4.1.5 Ability to integrate with travel partners.

GMSL said that this is the advantage of their system. He said that they built the current system knowing that they need to integrate with their travel partners. There are different types of partners. Buying agents is one type of partner who buys trips from Intrepid and sells to end customers on behalf of Intrepid with a commission. In such situations, they cannot wait till Intrepid sends them trip details with available spots in a spreadsheet or by emails, as it is changing dynamically. So the solution is integrating them with Intrepid's system. In this case, Intrepid has provided them access to their system through a web portal called Agent portal which enables them to place bookings to Intrepid system.

According to GMSL the other type of partners is affiliators. The difference between them and buying agents is the afficiliators scale. They are big partners who have their own IT systems and have the ability to consume a public API or web service. What they do is they show our booking spots on their websites which rely on XML feeds provided by Intrepid and they redirect the booking to Intrepid's system through the web service or public API provided by Intrepid. They earn less commission than buying agents since they are not responsible for customers unlike buying agents.

When he was asked about ROI for public API development, he mentioned that still, they need more clients to get full use out of it. But it has already recovered the cost itself. Currently, there are about 10 clients using the API.

He further mentioned that currently, their system integrations are only focusing to integrate the selling side of the supply chain. In the future, they may need to integrate suppliers as well. He further stressed that technically suppliers should be able to log into a portal and get all information they want such as room allocations, meals, transport allocation etc.

CIO mentioned that even though they sell trips directly to customers, people still like to purchase trips from buying agents. She specified Flight Center Australia as an example. Therefore integration with such partners is unavoidable. She mentioned that these integrations are automated through agent portal and public API ,the cost of bookings are almost similar to the cost of direct bookings but still they have to pay commissions for partners. But she didn't think it as a disadvantage because partners do marketing for them. She gave another example when one of their public API partner "Tour Radar" was taken over by another company because they were already linked with Intrepid via public API. They started selling Intrepid products before selling Intrepid's competitor products. But she is disappointed by the number of bookings they are getting through API and she believes that they can increase bookings by finding another three or four big partners like Tour Radar.

She also mentioned that they are hoping to replace the finance system (Navision) by 2018.They are planning to go for a cloud-based accounting system and integrate it with Starship by Mule ESB. She is quite delighted about Mulesoft's ability to integrate different systems together. Finally, she mentioned that a few years back only Starship and Elements were there as systems but now there are quite a lot of systems in place and integrated with each other and quite a few more systems are coming ahead including the new DMC system.

Speaking about API partners LBSS mentioned that it is a perfect way of integrating their business to the partners which eventually help them to bring more businesses in regions where they don't do marketing. The partners will do marketing on behalf of them. She added that it is a good way of selling products since it carries a less overhead cost for the company. She also mentioned that through API there is a huge potential of attracting more partners who have the ability to consume an API. From her point of view, the only drawback in API is that some partners couldn't test it properly due to issues on their systems.

MTSL also mentioned that it is good if they can sell their trips by their own, so that they don't need to pay commissions to their partners. But the advantage is, then Intrepid doesn't want to do marketing and they can save the marketing money to be spent. He also agreed that Public API doesn't bring sufficient bookings to business due to the lack of potential partners, who have the ability to consume an API service.

He further elaborated on improving infrastructure so that they can integrate many partners without a major bottleneck.

4.1.6 Special interview with DMC

A separate questionnaire was provided to the PEAK DMC Colombo, in order to understand how they run trips and how the vertically integrated software help to manage their operations and what improvements they expect as a business entity who actually run ground trips on behalf of the company. Responses are summarized in below.

MDMC mentioned that the adventure travel industry depends on the disposable income of people. So there is a risk associated with adventure travel industry since their income can fall due to a small economic downfall as well as by emergency situations such as a lasting war or politically unstable situation, floods or any other natural or manmade disaster.

He also mentioned that even though Intrepid is categorized as an adventure travel company, its business is more onto experience based travel rather than adventure travel, which requires a high level of physical ability. Intrepid theme highlighted this nature with the tagline of "travel local, eat local and stay local ".on these experientially based trips. Also there will be some physical activities but which are not as hard as trips to climb the Everest. He further mentioned that around 90% of trips are experience based rather than sightseeing. However, there are remaining adventure type trips such as trips to Nepal, Kilimanjaro, and Peru.

MDMC mentioned that they use Elements for costing supply chain components, but for reservations, they prepare vouchers manually to be issue to suppliers. He further mentioned that in other companies, they have automated these supplier invoice generations using a system called ITOS, which is a system that generates vouchers, itineraries and calculate per-pax cost automatically once you input the cost for each component attached to the trip. So he said that with such a system there will be 10%-15% manual work that has to be done and the rest of the work will be done by the

ITOS. He further mentioned that they have already requested to purchase or implement such a system and that it is already in progress.

He also mentioned that for tour guides there is a portal called leaders' portal which can be accessed using smartphones to obtain trip details for tour leaders while on the way. But he mentioned that some of the senior tour guides have poor IT literacy and WIFI connections available are not fast enough in Sri Lanka and hence it is not widely used among Sri Lankan tour leaders.

When he was asked about his opinion about automating supply chain partners, he replied that suppliers don't have the required facilities to contribute to automation since there are a number of small partners. He also mentioned that since adventure travel industry is a type of service industry it is better to have a personal touch with suppliers than systems.

Also when speaking about Elements, he mentioned that customer feedback report is one of the vital reports they are generating through Elements, which give them customer feedback about a trip and the tour leader of that trip. But he expresses his dissatisfaction about the user-friendliness of the system. Also he mentioned that even though customers provide good feedback to a trip, when it comes to the overall feedback it can vary due to the feedback provided to the booking process.

4.2 Summary of Research Findings.

This section summarizes all facts and findings identified in the previous section to help readers to get an overview of the research. Summarization is done for each theme identified.

4.2.1 Risk and Nature of the Adventure Travel Industry

Most of the respondents agreed that the current system is working very well for the existing sales models and existing product types. But they have accepted the fact that the system does not support the new business models and it is difficult to introduce new sales models into the existing system. Only the GMSL has mentioned that the system has some extended features to introduce new business models such as retail business model and new brands such as Exodus, which are not used anymore but gives the ability to extend the system functionality.

About the future of systems, GMSL, CIO and LBBS are of the opinion that they should continue Starship, isolating existing product types and existing business models and Intrepid should be integrated with other systems such as Salesforce and proposed DMC system with Starship. LBBS mentioned that the new proposed DMC system will replace Elements and then all sides of the supply chain will be addressed. CIO mentioned that she needs to address issues such as that Elements system not populating the finance data finance team wanted. The GMSL mentioned that enhancing the current system to support extended features is fairly risky since if the system fails they would have lost money invested on it which they cannot afford for the moment.

Also PDMC mentioned that this industry relies on the disposable income of the customers and hence it could be affected by even a small economic downfall. Also he has mentioned that the majority of their suppliers are too small to use automated supply systems and it is always nice to have a personal touch with them rather than making the process automated. But he also mentioned that the current system (Elements) they use to enter per pax cost and elements prices are not so user-friendly and they are seeking a new system which helps them to reduce most of the manual work they do.

4.2.2 Flexibility of customization

Most of the responders agreed that it is difficult to customize Starship, since they need a developer and tester to develop it and test. This applies when you are introducing new business processes and products as well. Only MTSL mentioned that it is not too difficult since they follow agile development methodology but he admitted that there is room for improvement.

Also almost all agreed that ideally system outage time should be nil since they are a 24x7 operated company. But most of them agreed that they have minimized the outage window over the past few years. MTSL mentioned that he is happy about on at least one thing, now there is a process to escalate both planned and unplanned outages.

GMSL mentioned that there is an issue regarding the budget to be allocated to develop self-customizability in Starship and websites. He mentioned that the required budget to conduct such a project would not be affordable for a travel company like

Intrepid. All others are of the opinion that it should be facilitated for self-customization from small features to bigger features like facilitating to fully independent travelers etc.

4.2.3 Data quality and accuracy

The majority of respondents agreed that data is important to the business from customer and pricing perspectives. For customers, tracking their trip histories, meal preferences and correct passport details are important while from the pricing perspective, trip Elements price accuracy is important to calculate the per-pax cost for each departure for each price season.

For improved data quality, Intrepid is going to start rewarding sales consultants for entering accurate data. Also their BST team creates user manual, training videos and conduct educational sessions to train internal staff about entering accurate data. Some of the teams have been set data accuracy as a KPI, which is a mechanism to measure their team performance.

However, when it comes to the outside of the company, those who are using web-based booking engine to enter data, still need to enter correct data. LBBS mentioned that a data validation framework should be implemented for web bookings as well. But GMSL mentioned that outside users are always keen on doing their booking right so they don't enter dummy data. Also LBBS mentioned that to follow up sales consultants' actions they are running a daily report about malformed data entered into the system. So they can see the progress of entering accurate data.

4.2.4 Customer focus of the system

Everyone has agreed that customer focus of Starship is very poor. GMSL more specifically mentioned that this is because of Starship's main entity is booking but not the customer. So the solution was to integrate Salesforce with Starship to enhance customer features. Salesforce integration will help Intrepid not to re-implement customer features on Starship. Instead, it is using already developed features. Therefore it is cost effective too. Generally, all respondents highlighted the following weaknesses in the current systems regarding customer focus.

- Scattered un-linked customer information
- Inability to trace customer trip and refund histories
- Customer duplication
- Inability to trace customer feedbacks in a single view

Regarding customer feedbacks, CIO, MTSL and MPDMC mentioned that the customer feedback process can further breakdown into pre-trip, trip and post-trip milestones, which eventually helps Intrepid to identify the exact stage, if there is a bottleneck of the process. LBBS mentioned that depending on customer feedback tour leaders' salary increments and incentives will be determined.

4.2.5 The ability of integration with travel partners.

The majority of respondents felt that Intrepid is not using their Public API in full potential, so the cost of the implementation has not been covered yet and Intrepid need more partners to gain its maximum.

But all of them agreed on the importance of partners because they will do marketing on behalf of Intrepid on a commission basis for each booking. So Intrepid can save marketing money through sales done by buying agents and partners. So integration is an essential feature for the current system .Partners will use either agent portal or Public API depending on their ability to consume a web service and depending on the type of IT systems they have used.

The CIO mentioned that, even though they have the ability to sell their trips directly to customers through their brand websites, Intrepid cannot eliminate partners because people are still tending to do bookings through partners. She mentioned "flight center Australia" as an example.

4.3 Descriptive Data Analysis

4.3.1 Analysis based on Conceptual Framework Themes

The findings carefully analyzed and compiled into Data Analysis spreadsheet and its rows represent the Interviewee designation and columns represent the factors identified for the first theme in the conceptual framework. Then the conclusion of the second theme will be derived based on what has been found from the first theme.

Sample Data Analysis spreadsheet is available in the **Appendix A8** and the real analysis with data is available in the **Appendix A9.**

5. CHAPTER FIVE – DISCUSSION AND FINDINGS

Chapter Overview

This chapter discusses the findings and the analysis described in Chapter 4 under separate section headings for factors identified in chapter 3.The discussions are categorized into 5 sections based on the factors found and results obtained from the data analysis. The sections are

- ✓ Nature of the adventure travel industry
  - Current Business System and the Nature of the Supply Chain
  - Future
- ✓ System flexibility of customization
  - Flexibility of the current system
  - Features that should be automated
- ✓ Data quality and Data accuracy
  - Importance of the data to the business
  - Steps taken to improve data quality
- ✓ Customer focus of the system
  - Starship and Salesforce Customer management
  - Customer feedback system.
- ✓ Ability to integrate with Travel Partners

Table 5.1 highlighted the discussion points to be discussed mapped with the research objectives.

Table 5.1: Discussion points categorization based on Research Objectives

Research objectives	**Discussion points**
Find out critical success factors affecting the implementation of vertically integrated software systems in adventure	5.1. Nature of the adventure travel industry 5.2. System flexibility of

travel industry.	customization 5.3. Data quality and Data accuracy 5.4. Customer focus of the system 5.5. Ability of integration with Travel Partners
Find out the suitable system implementation approach for small group Adventure Travel industry.	5.6. System development approach
Find out the Business impact of vertically integrated software systems.	5.7 Impact of vertically integrated software systems to the business.

5.1 Risk and Nature of the adventure travel industry

5.1.1 Current Business System and the Nature of Supply Chain.

Adventure travel is changing rapidly. But the current system does not fit into each and every business model that exists in the industry. According to the GMSL Intrepid's core product is a niche product and is about 2% of the market. Their main business system (Starship) supports the core product very well but not very much to other types of products. GMSL also stressed that the reason Intrepid decided to develop its own system instead of purchasing an available third-party system from the market is owing to the fact that they couldn't find a good system at a good price, which can easily fit into their core product.

Also according to the CIO it is fairly risky to maintain a system like Starship because it has been developed using the old code and may not fit into modern contexts such as integration work. The current system manages bookings and the selling side of the supply chain very well. But it is not managing supplier and operation side (DMC) well enough. CIO described this as "Jack of all trades, master of none" which means using one system is not the best way always to manage everything, since a single system may not have an expert knowledge on each of the areas. So they are looking to purchase a new system to manage those aspects

Also as per DMC manager, this industry depends on the disposable income of the people, which indicate that they cannot be guaranteed about their cash flow. So from

IT perspectives this is a risk because they would not be able to go for big budgeted IT projects, having such uncertainty about their cash flow.

5.1.2 Future

GMSL said that the biggest problem of the current system is the inability to adapt quickly to the market opportunities while CIO said that Starship is not good at handling customers, but it handles bookings very well. Generally, the majority of respondents agree that path forward is integrating different systems together rather than building all the functionalities on Starship's main business system so that they will be able to manage their supply chain efficiently and effectively.

5.2 Flexibility of the customization

5.2.1 Flexibility of the current system

Except for the Manager Technology Services Sri Lanka, all others accepted that it is not easy to do modifications in Starship application. As per LBBS, even a slight modification will take time and considerable effort. CIO specially mentioned that this is due to the old code of the starship. CIO and MTOSL mentioned that they would like to extend the options of the system to facilitate to a fully independent traveler for arranging their own tailor-made trip but they couldn't do so because the system does not support to such a requirement. Also the majority agreed that their current system cannot fit into new business models and products available on the market since there are system limitations.

Manager technology service Sri Lanka had a different opinion from a different perspective. He was under the impression that since they follow agile practices for software development, they could cater to change requests easily than those who follow the non-agile process. But he also agreed that there is room for improvement.

Also generally all respondents prefer for releases without a system outage since Intrepid operates as a 24x7 company. But most of them agreed that the system outage time currently limited to less than half an hour per release is an acceptable outage.

5.2.2 Features to be automated

Each of the interviewers had a different opinion on this. GMSL mentioned that the required investments are not there for automation. Income uncertainty could be one reason and he mentioned that such investments are not within their income and ROI

parameters.

CIO agreed that they can do automation up to some extent. But she raised a fact that if they completely automated the booking process then they lose customer contact points completely which is part of the booking process now. The advantage of having customer contact points is, the sales consultant can try to sell/suggest a better quality room, a better trip to a customer so both parties benefit out of it and eventually the customers will retain with business for a longer period. So even though from the technical perspective a fully automated system can be developed, they still prefer to have a touch point with sales consultants.

Both LBSS and MTOSL prefer to automate minor things such as adding new vessel types, Airlines and formatting of reports, while MTSL expresses his concern on completely automated systems deployment which will minimize system outage during deployments.

5.3 Data quality and Data Accuracy

5.3.1 Importance to the business

Almost all respondents said that data is important to the business in two aspects. One is from a trip perspective where you need to have accurate prices entered in Elements .So passengers can be informed of accurate prices without making any losses. The second one is accurate customer details such as meal preferences, medical requirements, passport numbers etc. Capturing those details are important to give a pleasant experience to the customer. Failing to capture accurate data can cause financial losses to the business and customer dissatisfaction.

5.3.2 Steps have been taken to improve data quality.

Intrepid has introduced a data validation framework to Starship, their main business system to validate user input. Also for their sales support team, they have set data accuracy as a KPI for the team and they have completed a data cleanup project for old data parallel to the implementation of new validation framework.

Intrepid conducts a number of educational and training sessions for their sales consultants about the importance of accurate data and according to the GMSL this is what they have done differently this time. Since sales consultants tend to bypass

validations with matching dummy data, Intrepid is going to offer a reward/commission to sales consultants for the accuracy of data to further motivate their sales consultants.

According to LBSS, there are still a few things to be done to improve data quality. One is extending the current starship validation framework into their websites and another thing is fine-tuning most of the validation error messages to a level where the user can identify the exact error of the entered data quickly.

5.4 Customer focus of the System.

5.4.1 Starship and Salesforce Customer management

According to the GMSL, Starship is a booking oriented system, which means that its main entity is booking, not the customer. Therefore on Starship, they can't build all customer functionalities of a CRM system where the customer is the main entity of that system and even if they can that’s not cost effective. So the best solution they had is integrating a separate customer-focused system such as Salesforce CRM system with Starship so both systems can serve each of their purposes.

A similar opinion is expressed by CIO, LBBS and MOTSL that they need to have a single customer view of customers, which is quite difficult to achieve through starship. From customer management perspective, some disadvantages Intrepid has faced with their main business system are listed below.

- Inability to trace trip histories of a particular customer
- Inability to view all customer information in single customer view
- Customers can be duplicated
- Refunds have to be paid for unsatisfied customers, with the inability of tracing their refund history easily.

Due to these issues related to the customer management, Intrepid decided to move its customer data into Salesforce CRM, with the aim of solving problems they have with customer management. After the Salesforce integrations, most of the system users had given positive feedback about Salesforce. In the data collection interviews when LBBS was asked to rank two systems, she ranked starship customer management by giving 2 points and Salesforce customer management by giving 9 points. This indicates the difference of the customer management of two systems.

5.4.2 Customer feedback system

Customer feedback is essential for the company as its impact to the tour leader incentives and customer retention/turnover in the future. Intrepid captures feedback under several categories such as trip, tour leader, trip components, and overall company rating etc. (Sample feedback form is attached on appendixes).In addition to feedback, they have two net promoter scores for bookings and trips.Net promoter scores indicate how a customer recommend a certain product or service of a company to another customer.

Even though they have a good feedback system, CIO and MTSL mentioned that it needs to be further improved. What they suggest is that feedback needs to be separated as pre-trip, trip and post-trip so that whenever overall feedback goes low they can determine as to which part of the process has gone wrong, because sometimes there are occasions that the actual trip gets exceptional feedback but when it comes to the overall feedback it is given either average or low rating due to some issues faced during the pre-trip booking process .This point was also raised by MDMC in the special interview conducted with him.

5.5 Ability to integrate with travel partners

As per the majority's opinion, Intrepid cannot overlook the need of integration with travel partners due to a few important reasons. First, people still like to go for travel partners and place bookings through them since travel partners offer a good client service and conduct attractive marketing campaigns on behalf of Intrepid. Secondly, Intrepid does not need to spend money on marketing for different regions because travel partners are doing that. Therefore Intrepid can save money through partners (even though they pay commissions to partners).

All respondents agreed that Intrepid cannot overlook the need of partners due to the above mentioned reasons. The integration solutions depend on the scale of partners. For small partners who have access to the internet can use agent web portal while big partners who have their own IT systems and have the ability to costume a web service, can use Public API provided by Intrepid.

Intrepid had less than 10 partners who are using its public API right now. That means Intrepid need more big partners to get the maximum out from the public API. All

respondents said they need more partners to recover the cost they have spent on developing public API.

There are other partners who consume an XML feed from Intrepid, who are using that XML feed to display the availability of trip spots.

5.6 What is the suitable system development approach for adventure travel industry?

As per the findings on above 5.1 section, most of the respondents agreed that Starship business system is good only to take bookings which support their core product type. They have accepted that some of the supply chain components may need different systems suitable for each of their purposes such as customer management, marketing, DMC and finance. Also to cater new type of products and new businesses they may need specialized systems available from the outside market.

As per above 5.4 section , for a purpose such as customer management, they have already integrated the Salesforce CRM system with their main business system Starship and are planning to use the same system for marketing purposes using it as a marketing cloud portal. Also they are looking on potential software solutions for their DMC, which will eventually help to manage their suppliers and trip operations.

As per section 5.5 Intrepid needs to integrate their system with their travel partners through public API or Agent web portal. Also Intrepid provides integration services such as XML feed service to their partners in order to show their trip availabilities in partner websites.

Therefore it is clear that Intrepid cannot survive by just having one business system designed to capture bookings. Also it is not cost effective to develop all functionalities of modules like customer management upon the booking system they have. Even if the cost is affordable, there is a possibility that such a development will lead to more frequent maintenance and more bugs due to the complexity of the system. So the best option they have is to integrate specialized systems designed for each of the purposes together. They are doing it right now and they have already

completed the integration of systems like Salesforce and Hybris through mule ESB which is an integration platform designed to integrate different applications.

5.7 Impact of vertically integrated software systems to the business.

Intrepid is a global organization. Their business has spread all around the world. So theoretically they are working 24 hours per day from somewhere in the word. So the one reason they have to depend on vertically integrated IT business system is their geographical distance from each of their regional offices including their partners and clients. So definitely they need a software solution for managing such a business, since supply chain management would be very difficult from distance and time zone perspectives. This is further elaborated under section 5.2.1 that all respondents have stressed the importance of 24x7 system availability and expected nil downtime during bi-weekly releases. However Intrepid was not able to reach that target yet, but they have managed to reduce the downtime for 30 minutes

As mentioned in section 5.5, travel partners are integrated with Intrepid through public API and Agents Web Portal. These partners are actually selling side partners. These partners need reliable data about trip availability and spot availability which are changing rapidly and more frequently. So partners cannot wait till these availabilities are sent to them via email or any other manual methodology since it is a cumbersome and time-consuming process. So the best solution is to provide an IT solution which is a part of the vertically integrated information systems of Intrepid. A Public API, a website portal and an XML feed service is provided to partners depending on requirements and their scales. So the conclusion is without using a vertically integrated system, Intrepid will lose a substantial amount of money from their selling side.

Focusing on supplier side, still, supplier process is yet to be automated and there are difficulties of doing so. As per CIO and MDMC, about 70% of Intrepid suppliers are small-scale suppliers like small guest house owners, small hotels and even domestic houses. So they don't have the luxury of using fully automated IT systems because of their scale matters. However, trip components prices and components details provided by suppliers are needed to correctly enter to the system by DMC since prices will be used in bookings.

Also it is observed with facts (See appendixes) that 40% of bookings are coming through Intrepid groups brand websites (direct bookings) and if websites go offline, it will impact heavily to the business.

6. CHAPTER SIX – CONCLUSION AND RECOMMENDATIONS

Chapter Overview

This chapter describes in brief the conclusions and recommendations of the research and explains certain limitations encountered during the conduct of this research exercise. The explanations also confirmed the author's own observation on the research project and directions for a further study on this subject since business IT research on adventure travel industry has not been done adequately

6.1 Conclusion

This section highlights the conclusion points of the research and table 6.1 has categorized them with research objectives

Table 6.1 Conclusion points based on Research Objectives

Research objective	**Conclusion point No**
• Find out critical success factors that affect the implementation of vertically integrated software systems in adventure travel industry.	6.1.1 6.1.2 6.1.3 6.1.4 6.1.5
• Find out the suitable system implementation approach for small group Adventure Travel industry.	6.1.6
• Find out the business impact of vertically integrated software systems.	6.1.7

6.1.1 Risk and Nature of the adventure travel industry is important to the design of vertically integrated software system because it should fit into business's "core

business model or product". In the case of Intrepid, their core product is a niche product which is about 2% of the market and this nature of the business is one of the key reasons that Intrepid has developed their own software solution instead of a tailor-made software package available in the market. (Section 5.1).So the impact of this factor is **Significant** to the success of the vertically integrated software system,

6.1.2 The flexibility of the system is highly important from the business perspective since it helps to reach new markets with different business models and products. However, it seems that the current system is not as flexible as it should be. Also automating features would help to save time and to allow customers to prepare their own tailor-made trips with less hassle. But complete automation of the booking process is not recommended because customer touch points are important in a service based industry than a product based complete automated industry (section 5.2). So the impact of this factor is still **Significant** to the success of the vertically integrated software system,

6.1.3 Data quality is important for both trip and customers details perspectives. Intrepid has taken several steps to improve data quality (section 5.3). So the impact of this factor is **Significant** to the success of the vertically integrated software system

6.1.4 Customer focus of the system has been improved by purchasing a CRM system which is specialized for customer management and integrating it with Intrepid's existing business system. However, customer feedback process is needed for further improvements (Section 5.4). So the impact of this factor is **Significant** to the success of the vertically integrated software system

6.1.5 The necessity of integration with travel partners is accepted by everyone. However, tools like public API developed for the purpose is not extensively used by travel partners yet. But Intrepid hopes that the demand for tools such as public

API will be increased in the coming years. But again this demand will be depended on the scale of partners. Small-scale partners who don't have their own IT system have to give some other solutions like a web portal login which is currently being used by Intrepid's small-scale partners (Section 5.5) So the impact of this factor is **Significant** to the success of the vertically integrated software system

6.1.6 Multiple systems need to be integrated, which are designed for specialized purposes such as booking management, customer management and content management etc. Systems can be integrated by using integration platforms like Mule ESB. (Section 5.6)

6.1.7 A Vertically integrated software system is essential for an Adventure travel company like Intrepid, since its business is being operated globally on a 24x7 basis and since it deals with many partners. So system availability across different regions and different time zones are essential to the business, while partner integration to the system is also essential for executing operations properly. Intrepid has integrated its selling side partners quite well but not the supplier side partners very much into the system due to factors like scale of supply partners etc.(Section 5.7)

6.2 Recommendation

6.2.1 System design should not limit the scope of business such as adoption of new business models or introducing new product types. If the development of such a system is difficult and costly, then it is better to focus on purchasing a tailor-made solution which depends on the budget available.

6.2.2 System automation is necessary but complete automation is not recommended since a customer contact point is essential due to the nature of the business. The flexibility of the system should be improved as mentioned in section 6.2.1 in order to accommodate new market and business models.

6.2.3 Customer feedback process needs to be fine-tuned in order to improve feedback process.

6.2.4 System integration should be encouraged instead of developing all functionalities on one single system, so that each of specialized systems can serve their purpose while integration keeps the whole business process aligned together.

6.2.5 Tools such as Public API should be extensively used to cover its development cost as well as to increase revenue from travel partners. This eventually helps to cut down marketing cost and increase profitability.

6.2.6 Current System(s) is focusing more on the selling side of the supply chain including customer management. Less attention has been paid to the supply side of the SCM. Focus of the system on supply side should be improved.

6.2.7 Current elements portal should be replaced by a new system. So DMC can eliminate most of the manual processes such as calculating per-pax cost etc.

6.3 Limitations

6.3.1 Sample selection was difficult since there aren't many people who have both experience in the industry and a fair knowledge about the IT systems used in the company.

6.3.2 Interviewer's work experience may influence the structure of the questionnaire.

6.3.3 Some Interviewees lack of knowledge about certain sections of the business.

6.3.4 Even though Intrepid is the largest company in small group travel adventure category, there are other types of companies operating in different market segments. Those companies have not been taken into this research.

6.4 Authors own evaluation

This research idea was originated by the practical experience gained by the author while he is working for Intrepid Group Pvt (Ltd), where he is a senior software engineer and is responsible for design and development of the company's internal IT Systems such as Starship (a mini ERP runs on MS.Net) ,Salesforce (CRM) and Elements (asp.net web application).

The author is grateful to the senior management of Intrepid Group Australia /Intrepid Group Colombo for the support given to this research and for their openness in providing the required information. Special Thanks should go to the General Manager of Intrepid Group Colombo for proposing this excellent research idea into the author’s mind.

The author spent quite a lot of time to study about qualitative research methods and selected the most suitable one for this research. He is satisfied with the time spent on interviews to collect data and enjoyed preparing transcripts for each interview based on the recordings.

The author is happy that he was able to meet his objectives of conducting this research and believes that the findings and content of this thesis will also add value to the adventure travel /travel and tourism industry around the world

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Appendixes

Appendix A1 –Sample Questioner

Factor: Risk and Nature of the Adventure travel Industry

Q1 Is current business systems helps managing supply chain activities of the company?

Q2 As per your opinion ,what improvements needs to be done in the business systems for improved supply chain management

a. Any other comments?

Factor: Flexibility of customization

Q3 Do you think changing a business rule, is a cumbersome process to deal with existing system (Starship business system)

Q4 Can we introduce new sales models, processes to business easily?

Q5 Does the current system outage time during a release, affect business significantly?

Q6 What are the key areas of the system you would like to automate or self-customized by users?

Factor: Data quality/data accuracy

Q7 How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

Q8 How system users have trained to input accurate and quality data? Are there any specific training? Guidelines? User manual etc.?

Q9 Does new validation rules introduced to business systems (Starship) helps to prevent entering poor quality, inaccurate data?

a. Will it restrict the flexibility of entering data? (e.g. different date time formats across the world, telephone numbers with - ,+ characters)

Factor: Customer centric and maintain duplicate free customer base

Q10 What drives company to migrate customer contacts into cloud based Salesforce (a CRM) System

Q11 What disadvantages you faced with current systems in the context of customer management

Q12 What is the process we use to follow on customer feedbacks in each of the scenario

a. About overall company
b. About a particular trip
c. About a particular tour leader
d. About any supply chain component associate with a trip e.g. Hotel room, Flight ,Bus

Factor: Ability of integrating the system with other travel partners

Q13 What is the importance of integration with other travel partners to the business

a. Who are the partners
b. Context of the partners

Q14 How helpful recently build "public API" to integration of travel partners

a. Eg: Number of bookings made through API since date of deployment

Q15 Any future Improvements planned for integration of travel partners

Appendix A2 – Interview Transcript – Mr. Anurudhdha Karunathilaka, General Manager, Intrepid Colombo

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Intrepid Colombo,Peak DMC Colombo	**Designation**	General manager. Intrepid Colombo and Peak DMC Colombo	**Name**	Anurudhdha Karunathilaka
Date	17-01-2017 3.30 PM	**Communication Mode**	Face to face Interview	**Place**	Intrepid Colombo office
Age	38	**Experience in Industry**	15 years	**Domain**	IT/Management
Profile 	Currently serving as the General Manager of Intrepid Colombo and Peak DMC Sri Lanka. Both companies are part of Intrepid Group. More than 10 years of experience from a Software developer to Global Head of development in IT and also about 10 years of experience in Adventure Travel domain				

Is current business systems helps managing supply chain activities of the company?

One of the key thing about travel is changing very fast .System should allowed us to come up with new business models and new products and sell them very quickly.

Our current System does facilitate to this up to some extent but it also has limits in other ways .We have two business models direct and indirect but there are other models too such as joint ventures and commission override models which are can't exactly to fit in our system.

Currently we are doing such type of business?

We can't do such business because those are limited by our system. Another problem we have introducing new products like sailing product, Adventure cruise product. It is not easy to develop a system to such a requirement because once you develop and if the system is not successful we would lose money we invest. So it is very difficult try new things. But it is supported very well to our core product. But challenge is introducing new product. The core product is Niche product .which is about 2% of the market because of that it was very difficult to find suitable systems when we were initially looking for purchase a system instead of developing a one

As per your opinion, what improvements needs to be done in the business systems for improved supply chain management

Our system supports vertically integration for our core product very well, which is roughly 85% of our business .The difficulties comes when considering other product types So I think the Path forward is Isolating our current system to core product and have interfaces to other systems to deal with those specific type of products

So this limitation is affecting to expansion of the business?

Yes it is affecting.

Any other things you like to mention?

Obliviously everything is moving into web, the biggest disadvantage is inability to adopt quickly into market opportunities from our system point of view. Let's a say in our system selling a new type of cruise is a simple add on. But that is not the case for all other products. Therefore we don't play in some of the market opportunities that we should play

Do you think changing a business rule, is a cumbersome process to deal with existing system (Starship business system)

Yes currently quite difficult to do changes .we need developer tester and deploy. Compared with some other systems users they can change rules by themselves

Can we introduce new sales models, processes to business easily?

Answer to this question is given in above questions under nature of adventure travel industry

Is current System outage time during a release, affect significantly for business?

Ideally we don't want any outage since we operate a 24*7 company. We choose Sunday afternoon for release considering lot of things and we make sure there is no travel show or promotion doesn't happen at the same time. So I think its manageable now

What are the key areas you would like to automate or self-customized by users?

We can definitely do but travel is quite complicated and investments for such improvements are not there. Before this Starship develop we did look few available similar software's built by travel companies such as Travelbox,Code gen one and quite few one but those were not fit into our system and quite expensive too. The one that fit into our system with customization is millions and millions dollar and not within our budget and ROI parameters for company like us

What is the importance of integration with other travel partners?

Under that you can describe about who are the partners? And the context of the partners

This is the advantage of our systems. We build systems keeping that mind we need to integrate with other travel partners there is different types of partners one partner is again a buying agents who buying from us and selling with a commission .They need quick updates . They can't wait till we send daily spreadsheets with prices and availability of spots .They need live updates so those things can't wait.

In that case why we went different solutions for different partners?

That is because of scale of partners. There are some partners who don't have their own system and who don't have ability to consume API or a web service so they need access directly to our system with a web interface these buying agents are actually our customers eg: flight center.

The other type of partners we called affiliators , where they can consume our public API and Feed service which shows the availability of trips and spots and their web site will have a record saying a particular booking made through their website is redirected into our system .They don't actually do a booking but earns an affiliate commission redirecting customers to us. These people rely on the "xml feed" provide by us. Since they don't responsible to for customers theirs commission is less than the buying agents.

How helpful recently build "public API" to integrate with travel partners? How are their feedbacks? Did it actually increase our sales?

I don't think it is using its full potential yet right because ….

How many clients are using it at the moment?

We probably may have about 10 client .Its making money paid for itself now. But we need to comes a big partner like Expedia, Lonely Planet or STA travels to make it really use

Any future Improvements planned for integrate with travel partners

What we probably need in future is ability to integrate different level at supply chain.at the moment our integration only for the people who need to buy product from us .Our integration focused only on "selling" at the moment .For our DMC who are running our operations on ground has to send manually all these room allocations meal preferences manually .technically suppliers should be able to log on a portal and get all information like room allocation, transport allocation meal details etc.

Were there any consequences due to this manual process run for our suppliers?

Yes there are incidents happened due to the mistakes can be happened in manual process .There is always room to go something wrong when you run a manual process.

How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

One of the key areas that really important for us is customer data. Lot of research has proved when you are doing targeted marketing, better the customer retention and return rate. Secondly in booking we do lot of deals, we might do deals with a hotel or we will be running promotions based on the reports generated by the system. So to generate accurate reports you must have accurate data in the system otherwise we will do our promotions based on wrong information and therefore we don't really get benefit out of such promotions so it is really important for us.

How system users have trained to input accurate and quality data? Are there any specific training? Guidelines? User manual etc.?

Next question related

Does new validation rules introduced to business systems (Starship) helps to prevent entering poor quality, inaccurate data?

Will it restrict the flexibility of entering data? (E.g. different date time formats across the world, telephone numbers with - ,+ characters)

People need to understand why we need data quality .Enforcing validation rules is not sufficient. As an example someone can enter an email by your name and your domain Chatura@chatura.com and any system in the world will be taken it as a valid email .But just because we entered it into the correct format will it be an accurate data? So this time what we did differently is before this validation rule in place we did lots of education session for our sales staff to understand the value of the data.

Do you think web based end users and public API users are still sends malformed data more frequently than internal business system users? (Starship) .If so what are the measures taken so far to overcome it?

They are making their own booking so always they are tend to send the right data to us. The bad data is coming from our staff

What drives company to migrate customer contacts into cloud based Salesforce (a CRM) System

Salesforce is really good CRM. You can't build all the functionalities it has in our system from the scratch since it is not cost effective. We want a single customer view and our current system is not supported to a single customer view .we have multiple points of contact between us and customer. For instance customer may come to enquire a trip, customer may request a brochure or customer may visit our YouTube channel .All these are point of contact which are not captured by our current system because our current system is a "booking" system and not a "customer" management system .Our current system was architected to be a POS system initially and hence our attempt of building customer functionalities on it was not successful .But we have tried at the initial stage to save money. The point is you can't build all customer functionalities in a system where the system's main entity is booking. Starship has designed for relationship a booking has customers .If it is a customer oriented system it should be a customer has bookings. So the solution is to use two systems for the two different purposes and integrate systems to serve each of their purpose.

What disadvantages you faced with current systems in the context of customer management

Current System is not a customer system that's the biggest problem. You can create bookings without customers. If it is a customer oriented system this should have not been allowed.

Do you think from investment perspective, It is worth to invest for Salesforce?

We need to use Salesforce as much as possible to get the benefit out of it half using it will not give a real benefit .We have to use as many as possible functionalities .Other than the customer data currently marketing cloud project in progress so in future we can use marketing cloud to do marketing, segmentation etc. from sales force. If we use Salesforce only to store customer data yes the investment made might not worth

but we are heading to a direction where we can use Salesforce for marketing and servicing too

Do you think in future Starship will be a legacy system due to extensive usage of Salesforce CRM?

CRM is not a booking system and it will never good as Starship on take bookings. We may replace the front end of the starship but the backend of starship and business logic will always remain

So in future there will be two systems one is booking oriented and Salesforce is customer oriented?

Yes and there will be another one "Hybris" is content oriented.

So in future mainly there systems will integrated with each other?

That's why ESB (enterprise system bus) is implemented to facilitate the integration of each system.

What is the process we use to follow on customer feedbacks in each of the scenario

1. **About overall company**
2. **About a particular trip**
3. **About a particular tour leader**
4. **About any supply chain component associate with a trip e.g. Hotel room, Flight ,Bus**

If you look at our feedback form (online) we get feedback under five different categories for overall trip, tour leader, accommodation, responsible tourism and transport. In addition we have two NPS (Net Promoter Score**)** booking NPS and trip NPS.

Appendix A3 – Interview Transcript – Mr. Thilanka Karunaratne, Travel Operations Manager, Intrepid Colombo

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Intrepid Colombo	**Designation**	Travel operations Manager	**Name**	Thilanka Karunarathne
Date	20-01-2017 3.30 PM	**Communication Mode**	Face to face interview	**Place**	Intrepid Colombo office
Age	30	**Experience in Industry**	10 years	**Domain**	Service Operations
Profile 	Currently serving as the Travel operations manager of Intrepid Colombo .He has almost 10 years working experience in service operations in various domains				

Can you please brief on what your teams responsible for and what are their job roles?

Basically what we are doing here is, we work as the service operation centre for globe since we have different regions different sales offices across the world .We work as the contact point for the globe and as the service centre for the Group, providing additional services regarding confirmation of trips of the customers.

We have three teams at the moment sales support team, product team and customer operations team. **Their job roles are pretty much similar** except for the people

whom their keeping in touch with the business. For customer operations and sales support systems, their main duties are to keep in touch with direct and indirect sales teams to ready their customers to the trip confirmations and get the necessary details from passengers such as passport details, date of birth or any other necessary information. When it comes to the Product team what they do is enter product details to the "elements" Systems. They work with product coordinators and DMCs and get the product done with all necessary components for trip like transports, accommodation, meals etc. Also they handle "legends" who are special group of customers took more than 10 trips with us.

Now we are in the adventure travel industry, we have two different business models at the moment direct booking and indirect booking .Is your team gets different type of booking requests other than this?

Well different in the sense we do handle direct, indirect and web bookings

Do you find our current system(s) are flexible enough to support different requests? Or you think it needs further improvements

The FIT (fully independent traveller) is one of the improvements we are looking forward where customer can log into wen portal and arrange their trip by themselves including all components of the trip. Currently customer has to pick the options provided by us. FIT will implement in near future where customer can prepare their own tailor made trip

What are the key areas you would like to automate or self-customized by users?

We do want automate reports mainly. Sometimes we do extract reports from the system and remove unnecessary data for hours and hours we want to stop these manual processes since it is cumbersome and nothing add new value to the reports

How frequently you extract these reports?

Weekly basis and we have to chase every customer on those extracted reports manually. Lot of things can automate on these reports such as filtering which we are doing manually at the moment and takes some time. Also we can automate sending

auto emails or SMS to obtain information from incomplete customers and if they didn't respond back to us then we can start chasing them with contacting them via phone or informing to their booking owners

So reporting is one of the main areas that can be automated as per your opinion?

Yes other than that everything else are pretty much in touch with DMC and other parties. Yes reports are one of the main things that we need to further automate

How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

Data accuracy is one of a main important thing in our business. That is part of attention to detail, let's say a passenger who is a vegetarian and if we didn't correctly capture that in our system he will be ended up with a completely different trip experience or let's say there is a hotel change for a customer. If we didn't inform him about the change he will be lost and clueless. So we have set this data accuracy as a KPI to the team .Also we stopped entering any dummy details of passengers which we did with the intention of just to confirm the booking in Starship since it doesn't allow confirming a booking without filling some mandatory fields and we are doing it as a "practise". Also there is a "data clean-up" project going on to clean the dummy data entered.

Does new validation rules introduced to business systems (Starship) helps to prevent entering poor quality, inaccurate data?

Will it restrict the flexibility of entering data? (e.g. different date time formats across the world, telephone numbers with - ,+ characters)

As I told as part of data clean-up project earlier we were working on couple of different screen about customer and it was really difficult us to compare the data send by customer. Now with this new interface it is allowed us to see all the details in one page.

When we are speaking about entering correct and accurate data, the training for staff is important. Did your team have gone through any specific training? Guidelines? User manual etc.?

Actually to be honest initially we didn't have proper plan of training .But now we have created a training calendar for new joiners starting initial system training with business support team. As I told you before one of a problem is since we work with different regions their practises are different from each other. So what we have done is we created a common user manual for what we have practising and at the same time we have done training manuals and procedure manuals for each and every region and uploaded into share point portal

So you are using SharePoint?

Yes

Who are the users?

The team leads and global sales managers with write and modify permissions and who ever in travel operation department and other regions have read only access.

So what we have trying to do is common practice for the globe

As per your opinion ,what improvements needs to be done in the business systems for improved supply chain management

The main thing would be the speed of the systems and system outages, system lags downtimes one of the other difficulties we face is time different between the regions but it isn't big issue when it comes into IT systems

In such situations where outages or downtime occurs what are the alternatives you have?

When starship connection is down we try to access it through Citrix. That is the only solution we have

Have you had a chance to work with travel partners?

Mainly we worked closely with Dragamon who is a travel partner for us who actually run trips in the ground and we sell their trips

Appendix A4 – Interview Transcript – Ms. Michelle Beveridge, Chief Information Officer Intrepid Group

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Intrepid Group	Designation	CIO	Name	Michelle Beveridge
Date and Time	24-01-2017 11.00 PM	Communication Mode	Face to face Interview	Place	Intrepid Colombo office
Age	38	Experience in Industry	20+ years	Domain	IT/Management
Profile 	Currently serving as the Chief information officer for Intrepid Group Pvt Ltd. She has more than 20 years of experience in IT and program management also she has about 3 years of experience in Adventure Travel domain				

First of all please introduce yourself for get to know about your role in Intrepid Group.

Michelle Beveridge on the chief information officer for Intrepid group which means I manage all technology services across the globe including software hardware and service provision Also I manage the Intrepid Colombo under shared services area.

Factor: Risk and Nature of the Adventure travel Industry

Is current business systems helps managing supply chain activities of the company?

I guess we talk about starship? (Main business system)

Yes mainly.

It is actually a risk to the organization due to the age of technology behind it. It is designed back in 2008 so basically out of technology code used for it by now and may not fit into today's context such as for integration work. But it does work well though

Extending that question as per your opinion, what improvements need to be done in the business systems for improved supply chain management? It could be integrating systems together or developing functionalities on our existing systems

The key I think is the integration with other systems. That is why we brought Salesforce into the organization because starship is really good managing bookings but not good enough managing customers .One of the key things that business need to do is allowing more "direct" bookings for customers rather than going to "agents". Then we don't want to pay commissions to agents. It is not easy to do such customer focused marketing at the moment with starship for example a customer do bookings once in two years may not be focused.

Any other comments about nature of this industry?

Challenge for us when it comes to the vertically integrations. Because we operates DMCs .we deliver the trips and as well as we sell the trips with packaging trips (marketing) .Starship/Elements built for support to run the operations of the DMC and sales side of the booking .DMC need completely different type of aspect of the system and that's why you have Elements (A comprehensive web portal which feed data to starship sharing same DB)

So DMC feed the elements with details?

That's right .That leads to feed the finance system data .The way we feed finance system is not giving the accounts or data finance team want either. So having one system to do everything may lead to none of them working perfectly. There is an English phrase jack of all trades which means trying to do too much I think that's where we need to be smarter.

Factor: Flexibility of customization

Do you think changing a business rule, is a cumbersome process to deal with existing system (Starship business system)

It is cumbersome because of old code. Some of the code was written by consultants old days are not quality code to do small changes in invoices you may have to ask help from a developer sometimes .So yes it is cumbersome.

Extending that question we have few business models used in the system but business would always like to introduce new sales models since adventure travel industry changes rapidly. Is our current system is a barrier when going for new models and processes?

That is a tricky question. When it comes to the new business remember we had a partnership with exodus (it is a different brand and had a partnership with Intrepid and formed a group called Peak) and we modify the code to accommodate new brands .exodus is no more with us but since we already have the code we could accommodate a new business much easily than before .But if the new business is a type of independent travellers for instances where they arrange most of the components of the trips by themselves Starship doesn't have that features to supports them.

What are the key areas of the system you would like to automate or self-customized by users?

Business is working out how much a customer can arrange a trip by them. Of course technology can do anything. But there is a value in customer contacts through part of the process .because you can suggest another product or you can upsell a better quality room or you can add an urban adventure tour (a short trip visits around the

city).By completely automating things you would lose these options. So from technical perspective it is nice to have self-servicing portal but from business perspective it is nice to have a facility to arrange a basic trip by customer and then have a touch point with sales people

Is current system outage time during a release, is affecting significantly for business?

It does .Because we are 24/7 operating company. Our system is used somewhere in the world at any time .It doesn't matter deployments are done on Sunday or any other date. So our development team works hard to minimize the outage window as much as possible

Factor: Data quality/data accuracy

How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

This is a big question I will tackle this from couple of different areas. If our "Element" System data is wrong we might have wrong information about trip prices or we could charge our customers overpriced or underpriced, finance team will have problems on calculating commissions, Tax authorities may not get correct revenue of our company and that can be a problem

On the other hand if we don't have right information about customers e.g. if passport details are wrong there can be problems at immigrations if we didn't capture meal preferences or airport pickups correctly it could be an unpleasant experience for customer

Extending that question our supplier service charges can be change dynamically e.g. room charges do we have a kind of supplier portal or somewhat similar portal to capture these changes? Or we track these changes manually?

We do manually. We have procurement managers around the world .About supplier portal the issue we are having is when it comes to suppliers, let's take accommodation. As per the nature of adventure travel industry our accommodations

are not always luxury or big hotels. It could be peoples home or small guest houses .They don't use computer systems .So an idea about supplier portal would still be useful to some of our bigger suppliers but 70% of suppliers will be out from that.

How system users have trained to input accurate and quality data? Are there any specific training? Guidelines? User manual etc.?

Yes we do prepare user manuals and guideline by BST team. It is about convincing people on value of accurate data. Sales guys have different motivations. They tend to do as much as sales quickly as possible to earn commission instead of worrying on accurate data. So they might skip some of the data like passport numbers email etc. But we need to motivate them to enter accurate data as much as possible so when customer contacts business in next milestone we have accurate data of them so we don't need to re-enter their customer data again

Adding to that you told sales people are more keen on doing sales without entering 100% accurate data .do this new validation enforcements are tend to deduct their motivation ?

Yes we are thinking about that now to change commission rates for accurate customer data or may be introduce new rewards or commissions for motivate sales team to enter accurate customer data. We are not implemented it yet but we will be getting there

Factor: maintain customer centric and duplicate free customer base

What drives company to migrate customer contacts into cloud based Salesforce (a CRM) System

To get a better customer experience .for instance once customer finishes a trip and not happy with it and asking for a refund we should be able to see his trip history in order to understand that he doesn't lie to us or its not continuously a habit for him so we could filter genuine requests or else when a genuine customer comes us next time since we have all his details and trip histories with us we can have much more fun conversation with him which will eventually help us to achieve greater customer satisfaction

Adding to that we already have a customer feedback process .First of all do you happy with current feedback process?

No nope no.it needs to work. We are working on a strategy where pre trip and post trip feedback needs to be separated. We usually got really good feedback on our trip particularly with tour leaders. But when it comes pre trip and post trip follow-ups together with trip, overall feedback could be less than the actual trip feedback. So with isolating feedbacks for these booking milestones, we can work on sections that are not performing well

What disadvantages you faced with current systems in the context of customer management, I think we have talked about this .anything else to be added?

There is something else I can add. When you think about compensation and waives, which is part of our business we spend millions of Australian dollars to pay refunds for unsatisfied customers across the globe. The whole process is running through spreadsheets and we are unable to track customers who had great experience with our trips but still complains again and again to get a refund at the moment it is bit difficult to track all of such customers .If we had Salesforce which is linked with the trip histories they were travelled it is so easy to go through the history and identify such customers .So that is one of the major disadvantage we are having with current system in the context of customer management

Factor: Ability of integrating the system with other travel partners

Why system integration with other travel partners important to the business

Who are the partners?

Context of the partners

Why we can't do business alone, without partners

If we think about travel agents, as I mentioned before even if we tried to get more direct business. People still like to book trips with travel agents. Someone like

“Flight Center” from Australia is a big travel partner of our business. We automated travel agent bookings via agent portal and public API so the cost of booking is almost similar to cost of a direct booking with us .Yes we still have to pay a commission to them .but we shouldn’t be paying commission to them if we have to do all works travel partners do since cost of service is high.

When it comes to public API, “Tour Radar” is our first public API partner. When their business was taken over by another company because of the link we had made with “Tour Radar” through public API, The takeover company started selling our trips before they sell our competitor trips

How helpful “public API” for travel partner integration. Does it increase number of bookings /revenue?

Eg: Number of bookings made through API since date of deployment

I disappointed on number of bookings we get through API. We could get more bookings through that. May be three or four big players will bring us more revenue in future

Any future Improvements planned for integrate with travel partners

I am interested about Mulesoft’s ability to integrate systems. One of the future projects planned for 2018 is replacing the finance system (Navision)

Navision is tailor-made software for financing right?

Correct .We are planning to upgrade the Navision system for this year and then move into another accounting system may be cloud based accounting service and the new finance system will be integrated with Starship through Mule,

Ok. That’s all about my main questions related to the scope. Any other thing you would like to add?

Intrepid as an organization really values technology and some of the changes we brought in last couple of years. And changes we are going to bring beyond there. We brought Salesforce into the corporate KPI. We are looking on opportunities what we

can do in social media, mobile platform also the new DMC project again very big project and huge integration

Will DMC project eventually replace “elements”?

It will go by close but we need to keep parts of elements system is still used for pricings by commercial team. But it will replace most of things in elements in different way .Integration is going to play major part of these system developments. few years back it was only Starship and elements in place and now we have quite a lot of systems placed and integrated with each other.

Appendix A5 – Interview Transcript – Ms. Sarah Wallace, Lead Systems training specialist Intrepid Group

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Intrepid Group Melbourne	**Designation**	System Training Specialist	**Name**	Sarah Wallace
Date and time	27-01-2017 10.00 AM	**Communication Mode**	Interview via Skype	**Place(s)**	Intrepid Colombo office/Melbourne office
Age	38	**Experience in Industry**	20+ years	**Domain**	IT/Management
Profile 	Currently serving as the Lead System Training Specialist for Intrepid Group Pvt Ltd. She works with company for 15 years.				

First of all please introduce yourself for get to know about your role in Intrepid Group.

I am Sarah Wallace working as a Lead System Training Specialist. I have a team of 3 .we work on any systems like Starship, Elements, Salesforce, Hybris etc . And provide training and configurations of the systems which is no need to do by developer and can be done through the interface provided

Factor: Risk and Nature of the Adventure travel Industry

How you rank current business systems on managing supply chain activities of the company?

Currently we are using mainly starships and elements. There quite old ,that's why we bring Salesforce also DMCs looking for new system .So they are going to buy a new system possibly a third party system since their supply chain not manage well enough by elements.

As per your opinion, what improvements needs to be done in the business systems for improved supply chain management

Salesforce will now handle most of the things but it will not manage elements. Elements will be managed by new DMC system to be introduced. Once those two in place we will be in good position in terms of supply chain management but we still not there yet

Any other comments?

Buying a new DMC system will still need to customize and you will have to spend resources and money on it .that is a bit risky.

Factor: Flexibility of customization

Do you think changing a business rule, is a cumbersome process to deal with existing system (Starship business system)

Yes .very much if you look at SFT-1521 this is an example .we wanted to give UK to ability of booking using South African Rand (currency) .you will see how much effort we had to put. But still not right.

The second part

Can we introduce new sales models, processes to business easily?

NO we can't introduce new business models for Starship .there are outside opportunities that we can' easily fit into our system

Is current System outage time during a release, affect significantly for business?

It is not too bad.it was much better than it was. For instance this Sunday release's outage is 2 hours since it big heavy .We choose Sunday because no one is doing bookings through Starship on Sunday but the web bookings .So only the web bookings will affect during a release but we hope to bring that downtime further down.

What are the key areas of the system you would like to automate or self-customized by users?

I would like to add new Ship /vessel or airline myself to support VRTT products and add customized product myself but that is not possible at the moment

Factor: Data quality/data accuracy

How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

Its vitally important to have accurate data .because we are trying to have a single customer view .Which means if somebody booked with us in the past and if the details are not taken down correctly we would not be able to match records within a single customer view. On the other side if DMC put prices inaccurately it will be affect to profitability.

In that case I have seen when release happened your team is preparing release notes, make training videos etc. How do you train system users to input accurate and quality data? Is there any specific training, guidelines, user manual etc.?

Yes we proof each other's work. So we check each other's work before go out .over the years of experience we know the value of accurate data. Also Sales team get incentives based on accurate data entered

New validation rules introduced to business systems (Starship) helps to prevent entering poor quality, inaccurate data? How is the progress and how is the overall feedback gets from business

Yes it is good. But still we have to fix certain things manually EOD based on the reports send us by Software developers (Active MQ) which means we have to put validations into all the websites too. Also we need to get error messages that are meaningful. For example if you put an incorrect phone number you will have to specify what exactly the error is (space, letter etc.) other than specifying it as just an error .But it is really works well though it has few minor issues.

Will it restrict the flexibility of entering data? (E.g. still people put travel insurance numbers which are lengths exceed the lengths in our systems)

That's right .People still put such data mostly on website end. We need to educate them and extend validation rules for web sites too .But in parallel we need to restrict entering such data with more meaningful error messages because Salesforce wouldn't accept the malformed data. Also we are running a report EOD to see bookings made by sales consultant through Starship and if any malformed data is found. We would inform them in order to maintain quality data. So the purpose is basically train sales consultant every day on putting correct data.

Factor: maintain customer centric and duplicate free customer base

What drives company to migrate customer contacts into cloud based Salesforce (a CRM) System

The company wants to see customer data through a single customer view. So they will be able to see all customer trip history and marketing history in a single customer view .Which helps to do marketing our trips effectively to our customers based on the history

If I asked to rate current system from 1 to 10, how do you rank current systems in terms of customer management?

2 for starship and 9 for Salesforce

We used to follow customer feedback in customer trips how the overall feedback process is work?

What is the process we use to follow on customer feedbacks in each of the scenario?

a) **About overall company**
b) **About a particular trip**
c) **About a particular tour leader**
d) **About any supply chain component associate with a trip e.g. Hotel room, Flight, Bus**

The feedback is saved in elements so the DMC can see the feedbacks for supply chain components, trip and tour leader .The tour leaders' bonuses and incentives will be decided upon these feedbacks .Perhaps DMC may not be able to see the overall feedback about the company as it is out of the scope of the DMC

Factor: Ability of integrating the system with other travel partners

What is the importance of integration with other travel partners to the business?

a) **Who are the partners?**
b) **Context of the partners**

About the partners who are integrated with us through API, API is a perfect way to sell our product .less overhead cost since we don't want to pay for their sales people .So it is a really good way to increase number bookings in regions where we don't put any marketing money to do marketing for our products. They sell our trips on behalf of us and they do the marketing on those regions

Other than partners, who are selling our products via API? Is there any other type of partners?

Well not really but since we have an API we can open it up to anybody who want to use this .So there is a great potential to use this by any type of partners who interested on selling our trips

How it feels on investment done on public API? Is it worth?

I don't think so we don't have enough partners yet .So there is a room for find more partners.

Any future Improvements planned for integrate travel partners

For the moment Salesforce has been given the priority, So API is just back in the queue .Not quite yet has setup any plans.

Do we have missed any partners because of our sales models and their models aren't fit and not supported by our system?

No. I don't think in such a situation, the integration is blocked by us but it can be from our partners .They might have problems on testing our API and integrate with their system properly due to their issues.

Appendix A6 – Interview Transcript –Mr. Bathiya Perera, Manager Technology Intrepid Colombo

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Intrepid Colombo	Designation	System Training Specialist	Name	Bathiya Perera
Date and Time	28-02-2017 3.00 PM	Communication Mode	Face to Face Interview	Place	Intrepid Colombo office
Age	32	Experience in Industry	10 years	Domain	IT/Management
Profile 	Currently working as manager technology Intrepid Colombo				

First of all please introduce yourself for get to know about your role in Intrepid Group.

I am Bathiya Perera working as manager technology service department I am the one who ultimate responsible for the people management and assure meetings KPIs of each teams I manage 4 teams business system development team ,engagement systems team ,digital team and service operation (ICT) team

Factor: Risk and Nature of the Adventure travel Industry

Is current business systems helps managing supply chain activities of the company?

I think current one is ok. But you have to adjust to retain the position of number one adventure travel company in the world .People now tend to go as solo travelers and they find lot of information from internet which helps them to travel independently. So we need to face these challenges and we need to add more features into our systems specially on technology wise not only from software perspective but from infrastructure perspective as well. For example we use cloud based infrastructures heavily these days like AWS.

Factor: Flexibility of customization

Do you think changing a business rule, is a cumbersome process to deal with existing system (Starship business system)

Not really. Since our process is full agile. We can deliver requirements in a quite flexible way .But again depending on the requirement this can be change.

It is like one aspect of a change. Let's say a user want to add a simple change like new airline to the system. Still a developer has to implement that change and add that data into the system (master data) .How do you see that?

It is quite Ok. But as you said there is room to be improvement

Is current System outage time during a release, affect significantly for business?

It is good if we can have minimized the Starship release downtime on Sundays under 30 minutes. Business development team is working on that .Except that there are planned and unplanned outages .For example today is a perfect day. One of our vendor's fibre links went down and no one is able to access the Navision system, x and y drive .It is not a system deployment outage but a network infrastructure outage .So it significantly affect to the business and we need to communicate these outages properly through a communication channel. We are doing it quite nicely through Yammer posts .So at least we have a clear process to communicate the downtimes

with time line to the business. So in infrastructure side we use lot of automation tools to get notifications about the nature of outages and fix them as well.

What are the key areas of the system you would like to automate or self-customized?

Deployment should completely automate. And remember we are a 24*7 company. If we can save 5 minutes it is a lot of time considering from global perspective

Factor: Data quality/data accuracy

How important the accurate data for success of the business? What are the consequences had to faced failing to provide accurate and quality data?

Data means accurate information .it is very vital and specially on peak seasons we get lot of booking requests and we may don't have a time to double check some of the information .If data entered are correct at the first place we can mitigate any risks associated with wrong information and that's a big advantage for use to acquire more bookings during the seasons

Factor: maintain customer centric and duplicate free customer base

What disadvantages you faced with current systems in the context of customer management

Forget about Salesforce. Currently our customer data is in everywhere. It is not properly link. Let's take an example about an unhappy customer who went a trip which doesn't feel him right. What if without racing this situation later if you try to sell him another trip to the same customer? He will be surely annoying. That's the problem we had. We had all the information but not in a centralize place. Salesforce will address this problem

What drives company to migrate customer contacts into cloud based Salesforce (a CRM) System. For example, why we didn't implement this customer management function in our system?

Basically, to build it from scratch we need lot of resources but Salesforce already provided us the customer management features. So, it just matters of integrating our systems to the tailor-made customer management system.

Cost wise how do you assess it?

I think it its affordable since we don't use all the features in Salesforce. I am not quite sure how the license will work but

What is the process we use to follow on customer feedbacks in each of the scenario?

a) **About overall company**
b) **About a particular trip**
c) **About a particular tour leader**
d) **About any supply chain component associate with a trip e.g. Hotel room, Flight ,Bus**

If we can divide feedback into several milestones like pre booking, post booking and during the trip it will be more useful. For instance for pre- booking we can ask about responsiveness of web site, performance of sales consultant etc.

Factor: Ability of integrating the system with other travel partners

What is the importance of integrate with other travel partners to the business

a) **Who are the partners?**
b) **Context of the partners**

Instead of depending on our partners if we can sold all our trips directly, it is awesome .We don't need pay commissions to our partners and our revenue will increase. But the advantage of having partners is they do all marketing for these trips so we don't need to maintain a separate marketing team for the corresponding region.

How helpful recently build "public API" to integrate with travel partners

Eg: Number of bookings made through API since date of deployment

I don’t think we are really using its full potential. We have to take more business out of it

Any future Improvements planned for integrating with travel partners

I am not sure about partners, but there are lots of improvements to be done in infrastructure like improve server capacities so then we can accommodate more requests

Appendix A7 – Special Interview Transcript –Mr Kosala Abeyrathne, Manager Peak DMC Colombo /Intrepid Group

IMPACT OF VERTICALLY INTEGRATED SOFTWARE SYSTEMS ON MANAGEMENT OF THE ADVENTURE TRAVEL INDUSTRY

INTERVIEW TRANSCRIPT

Organization	Peak DMC Colombo	Designation	Manager	Name	Kosala Abeyrathne
Date and Time	01-03-2017 3.00 PM	Communication Mode	Face to Face Interview	Place	Peak DMC Colombo office
Age	35	Experience in Industry	10 years	Domain	Travel and Tourism/Travel operations
Profile 	Currently working as manager Peak DMC Colombo				

First of all please tell us about the nature of this Industry.

First of all tourism is not an essential product for a customer, they have to have disposable income to spent on tourism. The revenue of a tourism business can easily fell due to an emergency situation like a war, disease, natural disaster etc. So there is a risk associate with this industry here we are doing adventure based travel

Extending that question, what is adventure based travel and how it differs with general tourism?

There is mass tourism which is about spending general holiday type tourism. What we are doing is mainly the “experiential travel”. Our theme is, travel local eat local and stay local .So you can’t just say that we are doing adventure travel only. It is experienced based travel. Rather than sightseeing we are selling the experience .The new generation will not come to Sri Lanka only to see Sigiriya or only to safari Yala, but also learn, feel and experience the local lifestyle. Handling these kinds of clients, we can’t do trips with large number of clients. This is why we have restricted to small groups to travel with us.

This theme is common to the whole Intrepid group, 90% of the trips are experiential based travel.

Where is the adventure part?

Sri Lanka is not still popular as an adventures destination .It is popular as sightseen destination .But if we take countries like Nepal we have hikes to Everest (upto base camp) and if we take countries like Peru we do Inca trail trips which requires lot of physical abilities. In Sri Lanka too we do some soft adventure activities like white water rafting at Kithulgala, trekking in Haputale and cycling in Anuradhapura. But here it is popular for sightseeing not for adventure trips.

To manage your supply chain activities like train bookings, hotel reservations and transport arrangements, have you use any systems? Or you are using spreadsheets like excel?

The costing part we do with Elements .But if it is a reservation ,we mainly do things over written documents like vouchers .We prepare vouchers for each reservation and email to our suppliers to confirm reservations. So it is a manual process. But there are other travel companies use systems for this. Such as ITOS (inbound tour operating system) or Tour plan which is a Malaysian products .here we don’t have such a system.

What are the difference between those systems and systems you are using here?

For example ITOS is purely an operating systems first we have to upload necessary details such as hotel rates, names taxes etc. everything you have to pre upload all data.

So in elements also you are pre uploading these details right?

Yes but we can't calculate the final per pax cost from it. ITOS once uploaded everything it will calculate per-pax cost automatically. And once everything uploaded it will calculate per-pax cost and if you have entered activities planned for a trip it will generate Itinerary automatically (we may have to do small adjustments manually).Which we can send to the client immediately. In Starship we have to enter this Itinerary manually for each different trip (not for each departure).

So once clients have confirmed it on the system we can contract it, automatically vouchers will be generated .So basically on such systems we have to do 10-15% of manual work. Rest of the things is fully automatic. If we have such a system we can do lot better than this.

What is the leaders' portal?

Leader's portal is something our tour leaders can get all information about trips online. But thing is Sri Lankan leaders like 70% of them guiding after their retirement. So they have issues with lack of IT knowledge and most of them don' have smart phones and most of the places don't have WIFI. Even in places you have WIFI the speed is pretty slow.

What information available in the leader's portal?

There you get the trip details, Itineraries everything relate to trip products

Have you raised these concerns that you are like to have more automated system than now?

Yes we already rose.

What about suppliers and supply side? Shouldn't that be automated too?

Well the suppliers don't have require facilities to contribute to an automated process ,that is one thing and the other thing is this is a service industry and contacting them through a phone call may be much more effective to get the things done rather than doing it on electronically. So the personal touch is always better than systems.

But assume when suddenly due to unavoidable reasons if a price has changed or if supplied components has to be cancelled, how do you get informed?

They have to inform us, we do negotiations normally to bring down rates.

Have you used Starship?

We only used for audit purposes to check invoices, we get trip manifests to run trips from Elements. Where we can get all customer information, pickup points meal preferences etc.

Any reports you generate using Elements?

The main report we are generating is customer feedback .It is very useful to use to see the feedbacks given to us by customers on a particular trip and leaders. But I am afraid to say Elements is not that much user friendly. It has to be improved, about customer feedbacks even though we provide them good experience during the trip ,if there was an issue during the booking process they will still put negative feedbacks, when it comes to overall feedback. That's how the customer behavior is.

Appendix A8 – Format of the Data analysis Sheet

Risk and Nature of the Adventure Travel Industry		
Respondent	**Current Business system and Supply chain management**	**Future**
	Q1	Q2
GMSL		
CIO		
LBSS		
MTOSL		
MTSL		
MDMC		

	Flexibility of customization	
Respondent	**Flexibility of the current system**	**Areas should be automated**
	Q3,Q4,Q5	Q6
GMSL		
CIO		
LBSS		
MTOSL		
MTSL		
MDMC		

	Data quality/data accuracy	
Respondent	**Importance to the business**	**steps taken to improve**
	Q7	Q8,Q9
GMSL		
CIO		
LBSS		
MTOSL		
MTSL		
MDMC		

	Customer focus of the system	
Respondent	**Starship Customer Management and Salesforce Migrations**	**Customer feedbacks**
	Q10,Q11	Q12
GMSL		
CIO		
LBSS		
MTOSL		
MTSL		
MDMC		

	Ability of integrate with travel partners.
Respondent	**Why Intrepid need travel partners?**
	Q13,Q14,Q15
GMSL	
CIO	
LBSS	
MTOSL	
MTSL	
MDMC	

Appendix A9 – Section of the Data Analysis Sheet with Sample data

	Risk and Nature of the Adventure Travel Industry	
Respondent	**Current Business system and Supply chain management**	**Future**
	Q1	Q2

GMSL	One of the key thing about travel is changing very fast .System should allowed us to come up with new business models and new products and sell them very quickly. Our current System does facilitate to this up to some extent but it also has limits in other ways .We have two business models direct and indirect but there are other models too such as joint ventures and commission override models which are can't exactly to fit in our system. Currently we are doing such type of business? We can't do such business because those are limited by our system. Another problem we have introducing new products like sailing product, Adventure cruise product. It is not easy to develop a system to such a requirement because once you develop and if the system is not successful we would lose money we invest. So it is very difficult try new things. But it is supported very well to our core product. But challenge is introducing new product. The core product is Niche product .which is about 2% of the market because of that it was very difficult to find suitable systems when we were initially looking for purchase a system instead of developing a one	Our system supports vertically integration for our core product very well, which is roughly 85% of our business .The difficulties comes when considering other product types So I think the Path forward is Isolating our current system to core product and have interfaces to other systems to deal with those specific type of products So, this limitation affecting to expansion of the business? Yes it is affecting. Any other things you like to mention? Obliviously everything is moving into web, the biggest disadvantage is inability to adopt quickly into market opportunities from our system point of view. Let's a say in our system selling a new type of cruise is a simple add on. But that is not the case for all other products. therefore we don't play in some of the market opportunities that we should play

CIO	It is actually a risk to the organization due to the age of technology behind it. It is designed back in 2008 so basically out of technology code used for it by now and may not fit into today's context such as for integration work. But it does work well though Any other comments about nature of this industry? Challenge for us when it comes to the vertically integrations. Because we operates DMCs .we deliver the trips and as well as we sell the trips with packaging trips (marketing) .Starship/Elements built for support to run the operations of the DMC and sales side of the booking .DMC need completely different type of aspect of the system and that's why you have Elements (A comprehensive web portal which feed data to starship sharing same DB) So DMC feed the elements with details? That's right .That leads to feed the finance system data .The way we feed finance system is not giving the accounts or data finance team want either. So having one system to do everything may lead to none of them working perfectly. There is an English phrase jack of all trades which means trying to do too much I think that's where we need to be smarter.	The key I think is the integration with other systems. That is why we brought Salesforce into the organization because starship is really good managing bookings but not good enough managing customers .One of the key things that business need to do is allowing more "direct" bookings for customers rather than going to "agents". Then we don't want to pay commissions to agents. It is not easy to do such customer focused marketing at the moment with starship .For example a customer do bookings once in two years may not be focused.

LBSS	Currently we are using mainly starships and elements. There quite old ,that's why we bring Salesforce also DMCs looking for new system .So they are going to buy a new system possibly a third party system since their supply chain not manage well enough by elements.	Salesforce will now handle most of the things but it will not manage elements. Elements will be managed by new DMC system to be introduced. Once those two in place we will be in good position in terms of supply chain management but we still not there yet
MTOSL		The main thing would be the speed of the systems and system outages, system lags downtimes one of the other difficulties we face is time different between the regions but it isn't big issue when it comes into IT systems In such situations where outages or downtime occurs what are the alternatives you have? When starship connection is down we try to access it through Citrix. That is the only solution we have

MTSL	I think current one is OK.But you have to adjust to retain the position of number one adventure travel company in the world .People now tend to go as solo travelers and they find lot of information from internet which helps them to travel independently. So we need to face these challenges and we need to add more features into our systems specially on technology wise not only from software perspective but from infrastructure perspective as well. For example we use cloud based infrastructures heavily these days like AWS.	

MDMC	First of all tourism is not an essential product for a customer, they have to have disposable income to spent on tourism. The revenue of a tourism business can easily fell due to an emergency situation like a war, disease, natural disaster etc. So there is a risk associate with this industry here we are doing adventure based travel Extending that question, what is adventure based travel and how it differs with general tourism? There is mass tourism which is about spending general holiday type tourism. What we are doing is mainly the "experiential travel". Our theme is, travel local eat local and stay local .So you can't just say that we are doing adventure travel only. It is experienced based travel. Rather than sightseeing we are selling the experience .The new generation will not come to Sri Lanka only to see Sigiriya or only to safari Yala, but also learn, feel and experience the local lifestyle. Handling these kinds of clients, we can't do trips with large number of clients. This is why we have restricted to small groups to travel with us. This theme is common to the whole Intrepid group, 90% of the trips are experiential based travel. Where is the adventure part? Sri Lanka is not still popular as an adventures destination .It is popular as sightseen destination .But if we take countries like Nepal we have hikes to Everest (upto base camp) and if we take countries like Peru we do Inca trail trips which requires lot of physical abilities. In Sri Lanka too we do some soft adventure activities like white water rafting at Kithulgala, trekking in Haputale and cycling in Anuradhapura. But here it is popular for sightseeing not for adventure trips. To manage your supply chain activities like train bookings, hotel reservations and transport arrangements, have you use any systems? Or you are using spreadsheets like excel? The costing part we do with Elements .But if it is a reservation ,we mainly do things over written documents like vouchers .We prepare vouchers for each reservation and email to our suppliers to confirm reservations. So it is a manual process. But there are other travel companies use systems for this. Such as ITOS (inbound tour operating system) or Tour plan which is a Malaysian products .here we don't have such a system. What are the difference between those systems and systems	

	Flexibility of customization	
Respondent	**Flexibility of the current system**	**Areas should be automated**
	Q3,Q4,Q5	Q6
GMSL	Yes currently quite difficult to do changes .we need developer tester and deploy. Compared with some other systems users they can change rules by themselves We have two business models direct and indirect but there are other models too such as joint ventures and commission override models which are can't exactly to fit in our system.Ideally we don't want any outage since we operate a 24*7 company. We choose Sunday afternoon for release considering lot of things and we make sure there is no travel show or promotion doesn't happen at the same time. So I think its manageable now	We can definitely do but travel is quite complicated and investments for such improvements are not there. Before this Starship develop we did look few available similar software's built by travel companies such as Travelbox,Code gen one and quite few one but those were not fit into our system and quite expensive too. The one that fit into our system with customization is millions and millions dollar and not within our budget and ROI parameters for company like us

CIO	It is cumbersome because of old code. Some of the code was written by consultants old days are not quality code to do small changes in invoices you may have to ask help from a developer sometimes .So yes it is cumbersome.That is a tricky question. When it comes to the new business remember we had a partnership with exodus (it is a different brand and had a partnership with intrepid and formed a group called Peak) and we modify the code to accommodate new brands .exodus is no more with us but since we already have the code we could accommodate a new business much easily than before .But if the new business is a type of independent travellers for instances where they arrange most of the components of the trips by themselves Starship doesn't have that features to supports them. It does .Because we are 24/7 operating company. Our system is used somewhere in the world at any time .It doesn't matter deployments are done on Sunday or any other date. So our development team works hard to minimize the outage window as much as possible	Business is working out how much a customer can arrange a trip by them. Of course technology can do anything. But there is a value in customer contacts through part of the process .because you can suggest another product or you can upsell a better quality room or you can add an urban adventure tour (a short trip visits around the city).By completely automating things you would lose these options. So from technical perspective it is nice to have self-servicing portal but from business perspective it is nice to have a facility to arrange a basic trip by customer and then have a touch point with sales people
LBSS	Yes .very much if you look at SFT-1521 this is an example .we wanted to give UK to ability of booking using South African Rand (currency) .you will see how much effort we had to put. But still not right NO we can't introduce new business models for Starship .there are outside opportunities that we can' easily fit into our system.It is not too bad.it was much better than it was. For instance this Sunday release's outage is 2 hours since it big heavy .We choose Sunday because no one is doing bookings through Starship on Sunday but the web bookings .So only the web bookings will affect during a release but we hope to bring that downtime further down.	I would like to add new Ship /vessel or airline myself to support VRTT products and add customized product myself but that is not possible at the moment

MTOSL	The FIT (fully independent traveller) is one of the improvements we are looking forward where customer can log into wen portal and arrange their trip by themselves including all components of the trip. Currently customer has to pick the options provided by us. FIT will implement in near future where customer can prepare their own tailor made trip	We do want automate reports mainly. Sometimes we do extract reports from the system and remove unnecessary data for hours and hours we want to stop these manual processes since it is cumbersome and nothing add new value to the reports How frequently you extract these reports? Weekly basis and we have to chase every customer on those extracted reports manually. Lot of things can automate on these reports such as filtering which we are doing manually at the moment and takes some time. Also we can automate sending auto emails or SMS to obtain information from incomplete customers and if they didn't respond back to us then we can start chasing them with contacting them via phone or informing to their booking owners So reporting is one of the main areas that can be automated as per your opinion? Yes other than that everything else are pretty much in touch with DMC and other parties. Yes reports are one of the main things that we need to further automate

MTSL	Not really. Since our process is full agile. We can deliver requirements in a quite flexible way .But again depending on the requirement this can be change. It is like one aspect of a change. Let's say a user want to add a simple change like new airline to the system. Still a developer has to implement that change and add that data into the system (master data) .How do you see that? It is quite Ok. But as you said there are room to be improvement It is good if we can have minimized the Starship release downtime on Sundays under 30 minutes. Business development team is working on that .Except that there are planned and unplanned outages .For example today is a perfect day. One of our vendor's fibre links went down and no one is able to access the Navision system, x and y drive .It is not a system deployment outage but a network infrastructure outage .So it significantly affect to the business and we need to communicate these outages properly through a communication channel. We are doing it quite nicely through Yammer posts .So at least we have a clear process to communicate the downtimes with time line to the business. So in infrastructure side we use lot of automation tools to get notifications about the nature of outages and fix them as well.	Deployment should completely automate. And remember we are 24*7 company if we can save 5 minutes it is a lot of time considering from global perspective
MDMC		

		Have you raised these concerns that you are like to have more automated system than now ? Yes we already rose. What about suppliers and supply side? Shouldn't that be automated too? Well the suppliers don't have require facilities to contribute to an automated process ,that is one thing and the other thing is this is a service industry and contacting them through a phone call may be much more effective to get the things done rather than doing it on electronically. So personal touch is always better than systems.

	Data quality/data accuracy	
Respondent	**Importance to the business**	**steps taken to improve**
	Q7	Q8,Q9
GMSL	One of the key areas that really important for us is customer data. Lot of research has proved when you are doing targeted marketing, better the customer retention and return rate. Secondly in booking we do lot of deals, we might do deals with a hotel or we will be running promotions based on the reports generated by the system. So to generate accurate reports you must have accurate data in the system otherwise we will do our promotions based on wrong information and therefore we don't really get benefit out of such promotions so it is really important for us	People need to understand why we need data quality .Enforcing validation rules is not sufficient. As an example someone can enter an email by your name and your domain Chatura@chatura.com and any system in the world will be taken it as a valid email .But just because we entered it into the correct format will it be an accurate data? So this time what we did differently is before this validation rule in place we did lots of education session for our sales staff to understand the value of the data.

CIO	This is a big question I will tackle this from couple of different areas. If our "Element" System data is wrong we might have wrong information about trip prices or we could charge our customers overpriced or under-priced, finance team will have problems on calculating commissions, Tax authorities may not get correct revenue of our company and that can be a problem On the other hand if we don't have right information about customers e.g. if passport details are wrong there can be problems at immigrations if we didn't capture meal preferences or airport pickups correctly it could be an unpleasant experience for customer Extending that question our supplier service charges can be change dynamically e.g. room charges do we have a kind of supplier portal or somewhat similar portal to capture these changes? Or we track these changes manually? We do manually. We have procurement managers around the world .About supplier portal the issue we are having is when it comes to suppliers, let's take accommodation. As per the nature of adventure travel industry our accommodations are not always luxury or big hotels. It could be peoples home or small guest houses .They don't use computer systems .So an idea about supplier portal would still be useful to some of our bigger suppliers but 70% of suppliers will be out from that	Yes we do prepare user manuals and guideline by BST team. It is about convincing people on value of accurate data. Sales guys have different motivations. They tend to do as much as sales quickly as possible to earn commission instead of worrying on accurate data. So they might skip some of the data like passport numbers email etc. But we need to motivate them to enter accurate data as much as possible so when customer contacts business in next milestone we have accurate data of them so we don't need to re-enter their customer data again Adding to that you told sales people are more keen on doing sales without entering 100% accurate data .do this new validation enforcements are tend to deduct their motivation ? Yes we are thinking about that now to change commission rates for accurate customer data or may be introduce new rewards or commissions for motivate sales team to enter accurate customer data. We are not implemented it yet but we will be getting there

LBSS	Its vitally important to have accurate data .because we are trying to have a single customer view .Which means if somebody booked with us in the past and if the details are not taken down correctly we would not be able to match records within a single customer view. On the other side if DMC put prices inaccurately it will be affect to profitability. Yes we proof each other's work. So we check each other's work before go out .over the years of experience we know the value of accurate data. Also Sales team get incentives based on accurate data entered	Yes it is good. But still we have to fix certain things manually EOD based on the reports send us by Software developers (Active MQ) which means we have to put validations into all the websites too. Also we need to get error messages that are meaningful. For example if you put an incorrect phone number you will have to specify what exactly the error is (space, letter etc.) other than specifying it as just an error .But it is really works well though it has few minor issues. a. Will it restrict the flexibility of entering data? (e.g. still people put travel insurance numbers which is lengths exceed the lengths in our systems) That's right .People still put such data mostly on website end. We need to educate them and extend validation rules for web sites too .But in parallel we need to restrict entering such data with more meaningful error messages because Salesforce wouldn't accept the malformed data. Also we are running a report EOD to see bookings made by sales consultant through Starship and if any malformed data is found. We would inform them in order to maintain quality data. So the purpose is basically train sales consultant every day on putting correct data.

MTOSL	Data accuracy is one of a main important thing in our business. That is part of attention to detail, let's say a passenger who is a vegetarian and if we didn't correctly capture that in our system he will be ended up with a completely different trip experience or let's say there is a hotel change for a customer. If we didn't inform him about the change he will be lost and clueless. So we have set this data accuracy as a KPI to the team .Also we stopped entering any dummy details of passengers which we did with the intention of just to confirm the booking in Starship since it doesn't allow confirming a booking without filling some mandatory fields and we are doing it as a "practise". Also there is a "data clean-up" project going on to clean the dummy data entered.	As I told as part of data clean-up project earlier we were working on couple of different screen about customer and it was really difficult us to compare the data send by customer. Now with this new interface it is allowed us to see all the details in one page. When we are speaking about entering correct and accurate data, the training for staff is important. Did your team have gone through any specific training? Guidelines? User manual etc.? Actually to be honest initially we didn't have proper plan of training .But now we have created a training calendar for new joiners starting initial system training with business support team. As I told you before one of a problem is since we work with different regions their practises are different from each other. So what we have done is we created a common user manual for what we have practising and at the same time we have done training manuals and procedure manuals for each and every region and uploaded into share point portal So you are using SharePoint? Yes Who are the users? The team leads and global sales managers with write and modify permissions and who ever in travel operation department and other regions have read only access. So what we have trying to do is common practise for the globe

MTSL	Data means accurate information .it is very vital and specially on peak seasons we get lot of booking requests and we may don't have a time to double check some of the information .If data entered are correct at the first place we can mitigate any risks associated with wrong information and that's a big advantage for use to acquire more bookings during the seasons	
MDMC		

	Customer focus of the system	
Respondent	**Starship Customer Management and Salesforce Migrations**	**Customer feedbacks**
	Q10,Q11	Q12
GMSL	Salesforce is really good CRM. You can't build all the functionalities it has in our system from the scratch since it is not cost effective. We want a single customer view and our current system is not supported to a single customer view .we have multiple points of contact between us and customer. For instance customer may come to enquire a trip, customer may request a brochure or customer may visit our YouTube channel .All these are point of contact which are not captured by our current system because our current system is a "booking" system and not a "customer" management system .Our current system was architected to be a POS system initially and hence our attempt of building customer functionalities on it was not successful .But we have tried at the initial stage to save money. The point is you can't build all customer functionalities in a system where the system's main entity is booking. Starship has designed for relationship a booking has customers .If it is a customer oriented system it should be a customer has bookings. So the solution is to use two systems for the two different purposes and integrate systems to serve each of their purpose Current System is not a customer system that's the biggest problem. You can create bookings without customers. If it is a customer oriented system this should have not been allowed. Do you think from investment perspective, It is worth to invest for Salesforce?	If you look at our feedback form (online) we get feedback under five different categories for overall trip, tour leader, accommodation, responsible tourism and transport. In addition we have two NPS (Net Promoter Score) booking NPS and trip NPS.

	We need to use Salesforce as much as possible to get the benefit out of it half using it will not give a real benefit .We have to use as many as possible functionalities .Other than the customer data currently marketing cloud project in progress so in future we can use marketing cloud to do marketing, segmentation etc. from sales force. If we use Salesforce only to store customer data yes the investment made might not worth but we are heading to a direction where we can use Salesforce for marketing and servicing too Do you think in future Starship will be a legacy system due to extensive usage of Salesforce CRM? CRM is not a booking system and it will never good as Starship on take bookings. We may replace the front end of the starship but the backend of starship and business logic will always remain So in future there will be two systems one is booking oriented and Salesforce is customer oriented? Yes and there will be another one “Hybris” is content oriented. So in future mainly there systems will integrated with each other? That’s why ESB (enterprise system bus) is implemented to facilitate the integration of each system.	

CIO	To get a better customer experience .for instance once customer finishes a trip and not happy with it and asking for a refund we should be able to see his trip history in order to understand that he doesn't lie to us or its not continuously a habit for him so we could filter genuine requests or else when a genuine customer comes us next time since we have all his details and trip histories with us we can have much more fun conversation with him which will eventually help us to achieve greater customer satisfaction There is something else I can add. When you think about compensation and waives, which is part of our business we spend millions of Australian dollars to pay refunds for unsatisfied customers across the globe. The whole process is running through spreadsheets and we are unable to track customers who had great experience with our trips but still complains again and again to get a refund at the moment it is bit difficult to track all of such customers .If we had Salesforce which is linked with the trip histories they were travelled it is so easy to go through the history and identify such customers .So that is one of the major disadvantage we are having with current system in the context of customer management	No nope no.it needs to work. We are working on a strategy where pre trip and post trip feedback needs to be separated. We usually got really good feedback on our trip particularly with tour leaders. But when it comes pre trip and post trip follow-ups together with trip, overall feedback could be less than the actual trip feedback. So with isolating feedbacks for these booking milestones, we can work on sections that are not performing well

LBSS	The company wants to see customer data through a single customer view. So they will be able to see all customer trip history and marketing history in a single customer view .Which helps to do marketing our trips effectively to our customers based on the history If I asked to rate current system from 1 to 10, how do you rank current systems in terms of customer management? 2 for starship and 9 for Salesforce	The feedback is saved in elements so the DMC can see the feedbacks for supply chain components, trip and tour leader .The tour leaders' bonuses and incentives will be decided upon these feedbacks .Perhaps DMC may not be able to see the overall feedback about the company as it is out of the scope of the DMC
MTOSL		

MTSL	Forget about Salesforce. Currently our customer data is in everywhere. It is not properly link. Let's take an example about an unhappy customer who went a trip which doesn't feel him right. What if without racing this situation later if you try to sell him another trip to the same customer? He will be surely annoying. That's the problem we had. We had all the information but not in a centralize place. Salesforce will address this problem Basically, to build it from scratch we need lot of resources but Salesforce already provided us the customer management features. So, it just matters of integrating our systems to the tailor-made customer management system. Cost wise how do you assess it? I think it its affordable since we don't use all the features in Salesforce. I am not quite sure how the license will work but	If we can divide feedback into several milestones like pre booking, post booking and during the trip it will be more useful. For instance for pre- booking we can ask about responsiveness of web site, performance of sales consultant etc.

MDMC		Any reports you generate using Elements? The main report we are generating is customer feedback .It is very useful to use to see the feedbacks given to us by customers on a particular trip and leaders. But I am afraid to say Elements is not that much user friendly. It has to be improved, about customer feedbacks even though we provide them good experience during the trip ,if there was an issue during the booking process they will still put negative feedbacks, when it comes to overall feedback. That's how the customer behavior is.

	Ability of integrate with travel partners.
Respondent	**Why Intrepid need travel partners?**
	Q13,Q14,Q15
GMSL	This is the advantage of our systems. We build systems keeping that mind we need to integrate with other travel partners there is different types of partners one partner is again a buying agents who buying from us and selling with a commission .They need quick updates . They can't wait till we send daily spreadsheets with prices and availability of spots .They need live updates so those things can't wait. In that case why we went different solutions for different partners? That is because of scale of partners. There are some partners who don't have their own system and who don't have ability to consume API or a web service so they need access directly to our system with a web interface these buying agents are actually our customers eg: flight center. The other type of partners we called affiliators , where they can consume our public API and Feed service which shows the availability of trips and spots and their web site will have a record saying a particular booking made through their website is redirected into our system .They don't actually do a booking but earns an affiliate commission redirecting customers to us. These people rely on the "xml feed" provide by us. Since they don't responsible to for customers theirs commission is less than the buying agents. I don't think it is using its full potential yet right because …. How many clients are using it at the moment? We probably may have about 10 client .Its making money paid for itself now. But we need to comes a big partner like Expedia, Lonely Planet or STA travels to make it really use What we probably need in future is ability to integrate different level at supply chain.at the moment our integration only for the people who need to buy product from us .Our integration focused only on "selling" at the moment .For our DMC who are running our operations on ground has to send manually all these room allocations meal preferences manually

	.technically suppliers should be able to log on a portal and get all information like room allocation, transport allocation meal details etc. Were there any consequences due to this manual process run for our suppliers? Yes there are incidents happened due to the mistakes can be happened in manual process .There is always room to go something wrong when you run a manual process.
CIO	If we think about travel agents, as I mentioned before even if we tried to get more direct business. People still like to book trips with travel agents. Someone like "Flight Center" from Australia is a big travel partner of our business. We automated travel agent bookings via agent portal and public API so the cost of booking is almost similar to cost of a direct booking with us .Yes we still have to pay a commission to them .but we shouldn't be paying commission to them if we have to do all works travel partners do since cost of service is high. When it comes to public API,"Tour Radar" is our first public API partner. When their business was taken over by another company because of the link we had made with "Tour Radar" through public API, The takeover company started selling our trips before they sell our competitor trips I disappointed on number of bookings we get through API. We could get more bookings through that. May be three or four big players will bring us more revenue in future I am interested about Mulesoft's ability to integrate systems. One of the future projects planned for 2018 is replacing the finance system (Navision) Navision is tailor-made software for financing right? Correct .We are planning to upgrade the Navision system for this year and then move into another accounting system may be cloud based accounting service and the new finance system will be integrated with Starship through Mule, Ok. That's all about my main questions related to the scope. Any other thing you would like to add? Intrepid as an organization really values technology and some of the changes we brought in last couple of years.

	And changes we are going to bring beyond there. We brought Salesforce into the corporate KPI. We are looking on opportunities what we can do in social media, mobile platform also the new DMC project again very big project and huge integration Will DMC project eventually replace “elements”? It will go by close but we need to keep parts of elements system is still used for pricings by commercial team. But it will replace most of things in elements in different way .Integration is going to play major part of these system developments. few years back it was only Starship and elements in place and now we have quite a lot of systems placed and integrated with each other.

LBSS	About the partners who are integrated with us through API, API is a perfect way to sell our product .less overhead cost since we don't want to pay for their sales people .So it is a really good way to increase number bookings in regions where we don't put any marketing money to do marketing for our products. They sell our trips on behalf of us and they do the marketing on those regions Other than partners who sell our products via API ? Any other type of partners? Well not really but since we have an API we can open it up to anybody who want to use this .So there is a great potential to use this by any type of partners who interested on selling our trips I don't think so we don't have enough partners yet .So there is a room for find more partners. For the moment Salesforce has been given the priority, So API is just back in the queue .Not quite yet has setup any plans. Do we have missed any partners because of our sales models and their models aren't fit and not supported by our system? No. I don't think in such a situation, the integration is blocked by us but it can be from our partners .They might have problems on testing our API and integrate with their system properly due to their issues.
MTOSL	

MTSL	Instead of depending on our partners if we can sold all our trips directly, it is awesome .We don't need pay commissions to our partners and our revenue will increase. But the advantage of having partners is they do all marketing for these trips so we don't need to maintain a separate marketing team for the corresponding region.I don't think we are really using its full potential. We have to take more business out of itI am not sure about partners, but there are lots of improvements to be done in infrastructure like improve server capacities so then we can accommodate more requests
MDMC	