

ISSUE 5 | JULY 2020 | SRI LANKA'S FIRST EVER LOGISTICS MAGAZINE

LOGISTICS 'TIMES

DEPARTMENT OF MANAGEMENT AND FINANCE
GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

“ Covid-19 brought up the reality in globalization on trade and the consequences to be faced when the supply chain collapses.”

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COO -
Hambantota International Port Group.

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“ There is nothing like doing the impossible, even in the most challenging environment.”

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Member of Group Management Committee -
Hayleys Advantis Limited.

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HAMBANTOTA INTERNATIONAL PORT GROUP



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EDITOR'S NOTE

Greetings and welcome to the 5th Edition of Logistics Times! Amidst a lot of challenges and difficulties, I am honoured to make the Editor's note of the 5th edition of the Logistics Times which comprises of interviews with prominent personalities of the Logistics and Transportation industry and scholarly articles written by university undergraduates and lecturers under the theme 'Challenges in Integrated Logistics Optimization'. I am grateful and extremely proud of the collective effort, dedication and hardwork of the undergraduates of FMSH Intakes 35, 36 and 37 in making this publication a reality.

This year's edition can be presented as a special edition as it was concluded during a pandemic that made it extra challenging for the editorial team to publish this magazine. The journey of finishing this magazine was challenging yet very educational and interesting for me and my team which made us learn more about Logistics Optimization and how the corporate sector adapts to the constant challenges and difficulties faced in pandemic situations.

This edition comprises of many interesting articles and interviews that show the importance of Integrated Logistics Optimization in a technological-driven business world and society and the challenges that come with it, specially in Sri Lanka.

I take this opportunity to express my sincere appreciation to all the corporate sector partners for their contributions to this magazine in various ways amidst their busy schedules, the Vice Chancellor of General Sir John Kotelawala Defence University, Deputy Vice Chancellors, Dean - Faculty of Management, Social Sciences and Humanities, Head - Department of Management and Finance, Dr. Kalpana Ambepitiya and all the other lecturers of FMSH for constantly being a pillar of strength in making this magazine a success. I would also like to express my gratitude to our designer for being the creative force behind this magazine, the Editorial Committee for being extremely dedicated in publishing this magazine, all writers, all the members of the Technical Sciences and Management Society, the undergraduates of the Department of Management and Finance, and everyone who was behind the success of this magazine. Your contribution is highly appreciated and hope everyone would stay safe!



Natasha Jansen
Chief Editor
Logistics Times: 5th Edition



GENERAL SIR JOHN KOTELAWALA

DEFENCE UNIVERSITY

General Sir John Kotelawala Defence University is a reputed university in Sri Lanka which is producing well-educated graduates to the country with the motto of 'For the Motherland Forever'. Today, KDU has a unique recognition as it is the only defence university in the country which produces an eclectic blend of officer cadets, officers as well as civilians to serve the country.





GENERAL SIR JOHN KOTELAWALA

DEFENCE UNIVERSITY

KDU VISION

To be a university nationally and internationally known for its unique ability to engage both undergraduate and graduate students in distinctive and interdisciplinary defence related higher education that best serves the tri-services, the state sector and society at large.

KDU MISSION

To ensure a high-quality, learner-centered educational experience through undergraduate, graduate, and professional programmes along with high quality research across many disciplines in the field of defence, in both residential and non-residential settings in the campus.

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INTERVIEW

MR. TISSA WICKRAMASINGHE –
COO: HAMBANTOTA INTERNATIONAL PORT GROUP

*Interviewed by – Yasodara Ranasinghe and
Natasha Jansen
Written by – Yasodara Ranasinghe*



Tissa Wickramasinghe, Chief Operating Officer (COO) at the Hambantota International Port Group (HIP) is a Marine Engineer by profession, with over 25 years of experience in the Ports & Shipping industry. A specialist in Public-Private Partnership (PPP) initiatives, Mr. Wickramasinghe played a significant role in the PPP ventures of SAGT and CICT and brings a wealth of knowledge and experience to HIP, a public private partnership between the Sri Lanka Ports Authority (SLPA) and China Merchant Port Group (CMPort).

Q. How would you describe your role as Chief Operating Officer of the Hambantota International Port Group?

A. As Chief Operating Officer, my primary task is to support and assist the CEO in running the port. Firstly, that means being in charge of key operational functions of the port such as; Ro-Ro, breakbulk cargo and other general functions. Secondly, I oversee the tank farm, a separate business unit of HIP, and thirdly the port investment services unit, which promotes the port to potential investors. The fourth function that comes under my purview is the marketing and commercial section. All these four business units report to me.



Q. How does Sri Lanka benefit by providing feeder services and value-added services to the maritime industry?

A. Sri Lanka does not provide international feeder services at the moment. Feeder services are an integral part of an efficient transshipment hub. When a main line calls Sri Lanka, the feeder operators will study the service network, engage the Main Line, and support the Main Line to connect with the regional port network. Why feeders operate in the first place is because the main lines have become so large, they will not call at several ports in the region, they will call at one port and expect the feeder to support the main line. Sri Lanka may not operate any feeder services, but the world's largest feeder operators in the region call at the Port of Colombo, purely because of the fact that we are a major transshipment hub. What Sri Lanka does is attract the world's best carriers and that has been done very successfully over the last few years - so much so that we now rank as the 24th busiest port in the world.

When it comes to value-added services, there is room for improvement. There is a potential to expand in this area if regulations are relaxed, and we are working on this. Having value added services will definitely attract more business to Sri Lankan ports.

Q. How has business relationships and policies changed after the Chinese takeover of the Hambantota

International Port?

A. Firstly, let me correct your question. The Chinese have not taken over the Hambantota International Port. As I mentioned earlier, the Hambantota Port, similar to SAGT and CICT is a Public Private Partnership. The government holds equity in HIP, through the Sri Lanka Ports Authority. The same equity balance exists with all three Public Private Partnerships i.e. 85% of SAGT is owned by a private company and 15% by the government. Similarly, CICT is a 85 - 15 partnership with CMPort and is the case with the Hambantota International Port where 85% is owned by the CMPort and 15% by the government of Sri Lanka. As far as HIP is concerned, it is an investment between CMPort and the government of Sri Lanka. As for HIP, we run the port and we will enhance port businesses. HIP's Ro-Ro business, has increased by more than two fold. Furthermore, we convinced the world's three largest Ro-Ro carriers to come to Hambantota, and we have done very well, efficiently increasing their volumes. HIP also entered into terminal services agreements with the Ro-Ro carriers, something that has never happened in Sri Lanka before. HIP has introduced very high safety standards and global best practices, to the port. With global best practices in place, and setting international benchmark productivity levels, HIP is now one of the leading transshipment Ro-Ro hubs in this region. We were looking at several other businesses and

HIP was very optimistic with the progress. However, it is unfortunate that the COVID-19 pandemic has shaken the whole industry and the global economy itself. This development has presented us with unprecedented challenges - but given our access to the CMPort resources, we are confident we can overcome this disruption.

Q. What is the potential of Hambantota International Port?

A. HIP has tremendous potential, but that is a very wide statement. What is important to understand is that, just because we have a strategic location and there is a port there, business is not going to materialize - we need to market the port internationally and add value. We should be able to deliver standards that are not only acceptable to shipping lines but are on par with other competitive ports. So far, HIP has delivered on that promise, but we are still looking ahead of what we have achieved. When we took over, we had to do a lot of refurbishment of the port's facilities, employ new skilled staff to run the operations, which were not up to the standards expected by the shipping lines. Even with these challenges, we have come a long way in the last two years.

HIP introduced the handling of bulk cargo, and that is progressing slowly, but we are confident with the plans in place. We would have gone much further this year, if not for the new challenge that has been brought on by COVID-19. I believe the next three months will be challenging, not only for HIP but also for the entire industry. Hopefully, COVID-19 will die down and we can get back on track. China will get back to normal within the next two - three months. The development with regard to the global oil prices is another factor that can have multiple effects on global trade and the maritime sector in general. The most important thing we did in Hambantota is the refurbishment and mobilizing of our tank farm, which we have done together with Sinopec, one of the largest oil refiners in the world, so they are able to bring bunker oil to Sri Lanka to supply ships at a very competitive price. HIP hopes to get that operation going soon. Once that starts, many new businesses will come in, not only to HIP but also to the Port of Colombo.

Our core business right now is Ro-Ro and break bulk; also, LPG operations too have seen good progress. Our next step is getting the bunkering operation started as soon as possible, which HIP is working on.

Q. What are the areas that could be developed to get the maximum output from the Port?

A. Historically, in most countries, ports have been located almost in the center of the city. Globally, all countries, even Singapore, are trying to move out due to urbanization and increasing congestion, and we in Sri Lanka have taken the correct steps in building the Port of Hambantota and moving out there. Due to what has happened historically in Sri Lanka, all the industries and factories are located within the Western region, therefore imports have to go from Colombo and exports have to come in to Colombo. What Sri Lanka has to do is to develop industrial zones in Hambantota. The Sri Lankan government has already started the Mirijjawila Export Zone and the Koggala Export Zone down south, extending the Port of Hambantota for imports and exports. Towards the end of this year, we will be looking at commencing container operations purely to support Colombo. Right now, Colombo has reached its peak stretched to the maximum due to lack of deep-water capacity. We need to drive the message to the outside world that Sri Lanka is serious about retaining its position as the main transshipment hub in this region. Shipping lines will not continue to show an interest in Sri Lanka, if we do not develop deep-water capacity as an urgent necessity. Sri Lanka has to reiterate the message to main lines that we are serious, and that the Colombo East Container Terminal will go into operation soon. Currently, Hambantota has a limited container handling facility, but

HIP will soon remedy that. Once the cranes are in place, we will be able to support and complement the Port of Colombo with deep-water capacity.

Q. Hambantota Port is located geographically in a way that can connect air and sea, making it a one-stop logistics platform offering an integrated package. How can integrated logistics help the port in becoming efficient and effective?

A. A port is the first interface between land and sea. Hambantota has the distinct advantage of having the Airport almost next door to the seaport, with very good road access and connectivity. Having an airport very close to a seaport naturally helps operations. The basic high capex components of this infrastructure is a seaport and an airport, and that is already in place. We have a proven global port operator in place to run the port and all the required software and hardware is in place from the Port's side, but the Hambantota Airport and the industrial zones still have to go into operations. Once they do, we will be well set to integrate within a very short period, and provide a one-stop logistics platform.

Q. What are the new technological applications used in Hambantota International Port? How important is the integration of technology with port activities?

A. I think technology is imperative. We were the first to start a mobile app at CICT, and HIP has introduced an E-Commerce and Bulk Terminal Operating System (BTOS), where car carriers can log into the app and see where their vehicle is. HIP together with the customs have implemented an online sufferance clearance system in Hambantota making us the first to do it. HIP is in discussion with the Department of Motor Traffic to register local motor vehicles as they come out of the port. This is still an ongoing discussion.

Q. Hambantota Port is now on a state of alert status in order to prevent COVID-19. COVID-19 created a huge impact on the global economy affecting port activities and other related activities. How can integrated logistics reduce the impact of such global outbreaks?

A. Frankly, I do not think anybody was ready for COVID-19, as it is an unprecedented situation. What we did was, we completely abided by the guidelines given by the World Health Organization (WHO) and secondly, we abided by the Ministry of Health regulations in Sri Lanka. On top of that, we

had some very rigid rules and regulations given to us by CMPort, which runs 30 to 40 ports globally. Their ports in each country had to adapt to the local situation, and fulfil the local requirement, while following CMPort safety measures. HIP was miles ahead than everybody else in tackling the situation. We currently check temperatures of anybody walking into the terminals, their passports and where they come from, so there are many things we do as a responsible organization, and that state of alertness is being continued, and that has brought about a lot of recognition for us from all the visitors who still tend to come to the port. We conduct awareness sessions for customers, stakeholders and staff. These actions have spread the word around that the Hambantota International Port is alert, and of course, we have a hospital right next to the port. I think HIP is very much ahead of the game to prevent the spread of COVID-19, by being proactive in adapting to the new normal.

Q. South Asia's largest LPG Transshipment terminal started its operations last year at the Hambantota International Port, which is a significant investment in infrastructure development in Sri Lanka. What kind of opportunities and challenges did this terminal open up for Sri Lanka? What further developments should take place?

A. I think the credit for opening

the LPG transshipment terminal must go to LAUGFS terminals. The terminal is situated within our property. We have leased the property to them, but the setting up, and running of it is done by LAUGFS. They have done it according to international standards, and our function is being the interface between the LPG vessel coming into our berths and pumping gas into their facility. HIP facilitates that and we maintain very high safety standards for this operation. Handling the first ship was a learning experience for LAUGFS as well as for HIP, and it was done successfully. The LAUGFS business model shares HIP's goal of becoming a transshipment hub for energy. With oil and gas transshipment already in place, we also hope to handle LNG transshipment too in the future. We have scope for all these three businesses under our tank farm business unit. LAUGFS hopes to expand this business in the future, which they believe has great potential, as there is no such facility in the region.

Recently, Litro Gas, which supplies LPG to Sri Lanka's domestic market, also leased tanks at the Hambantota International Port to support their supply chain. With Litro Gas coming into the equation, and HIP's tank farm and berth refurbished to international standards, we are now fully operational.

Q. Even though Sri Lanka is strategically located in close proximity to the East-West shipping route, which makes it a “Maritime and Logistics Hub,” why hasn’t Sri Lanka performed to the expected level with the potential and opportunities gained by its strategic location?

A. It is unfortunate that Sri Lankan policy makers are yet to fully recognize the value of this strategic location from a shipping, logistics and supply chain perspective. What prevents us from going further are the various statutory regulations such as the customs ordinance that are in place, which is outdated in today’s context. We have other policies in place, which are also strangling the industry. These issues need to be addressed by not only the state authorities but by all stakeholders in the industry. At the end of the day, Sri Lanka must be on par with our competitors or better. We must improve our position in the ease of doing business index. Sri Lanka’s ports and shipping industry has more restrictions than Singapore or any other country, so we are already handicapped. We must be able to fall in line with global standards and not have a frog-in-the-well attitude. We can take such an attitude if we

are a gateway port, catering to a captive market of local cargo. It is a known fact that we do not have sufficient gateway cargo. We proudly say that we handle seven million plus TEUs, but of that, only 1.4 million TEUs are Sri Lankan cargo and out of that, about 400,000 TEUs are empty containers.

As for the future, if we do not develop the infrastructure and the required “software” we could become a feeder port like Bangladesh and that would be very unfortunate. The policy aspect is the easiest to resolve because it is a software; the difficult part is the infrastructure because it costs money. If the right policies and the infrastructure are in place, investors are always ready to come in, due to the strategic geographic location that we enjoy. Best examples are SAGT and CICT, which are very successful, and of course HIP, too is on the way to its own success. These are all partnerships with the Sri Lanka Ports Authority which has also played a crucial role in the past few decades, in making the Port of Colombo the regional hub port by making timely investments in developing capacity. Although there have been some unfortunate delays in commissioning the East Container Terminal, we believe

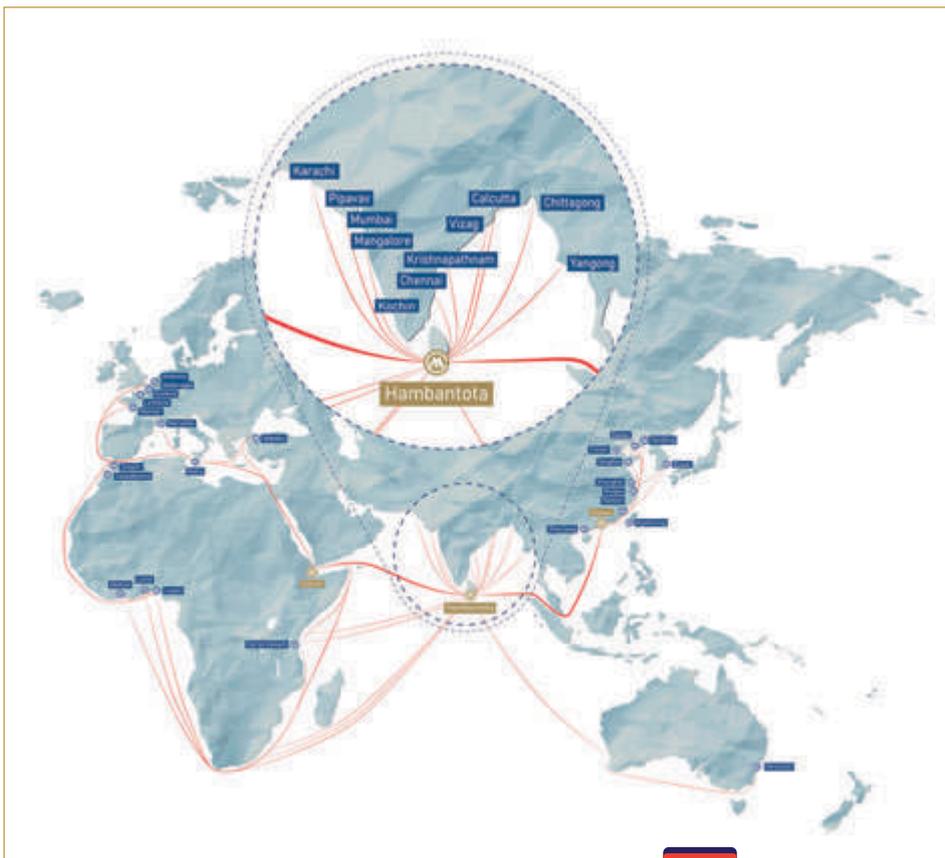
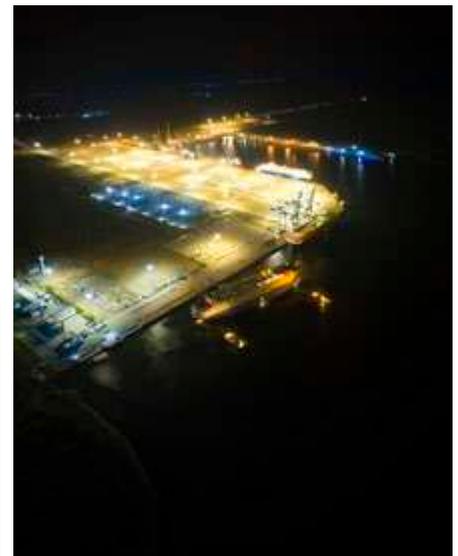
it is moving in the correct direction now.

Q. What is your advice for new entrants and undergraduates who are about to enter into the logistics and supply chain industry?

A. I think the logistics, supply chain industry is yet to achieve the attraction, and flair the IT industry had 20 - 30 years ago. The industry is in the stage where youngsters are just realizing how important this field is. I believe the potential for the logistics industry is far more than the IT industry. COVID-19 is a classic example. Before the supply chain industry became a keyword, people used to bring inventory and store goods in a warehouse, then it went into Just In Time (JIT) method. COVID-19 brought about the reality of globalization of trade and the effects of what happens when the supply chain collapses. Therefore, this is an industry where we have to be innovative, think out-of-the-box and be on board. Digitization helps to increase efficiency in logistics, where manpower is a necessity to go the extra mile, and that’s why this is a good industry to be in.



Located ten nautical miles from the global trade route, the Hambantota International Port is the most diversified deep water port in Sri Lanka.



E-PROCUREMENT,

THE NEW WAY TO OPTIMIZE THE ENTIRE PROCUREMENT PROCESS



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Logistics is a term originated from the military where it was earlier referred to as the supply of equipment and other goods needed for troops. Logistics can be further described as the overall process of acquiring, storing and transportation of resources to their final destination. In the supply chain system practiced in today's business world "integrated logistics is a new advancement".

Integrated logistics is the process of planning, co-ordinating and arranging the operational activities in an organization to optimize its productivity.



Procurement is the process of recognizing, shortlisting, choosing and obtaining required goods or services from a supplier by means of direct purchase, tendering or bidding procedure with delivery in the right quantity and quality. The procurement procedure is a key factor of the

organization's strategy because the capability of purchasing certain materials or services can determine whether the operations will be profitable or not. Procurement management focuses on strategic plans and long term goals of the organization such as gaining competitive

advantage through a good procurement process.

Procurement Process



SOURCE:AUTHOR

What is procurement optimization?

The strategies used to make the most effective use of the available resources could be identified as optimization. Similarly, procurement optimization could be referred to as realizing the saving potentials in the short-term while creating efficient procurement processes and systems that guarantee continuous profits in the long-term. Furthermore, procurement optimization is a holistic approach rather than an individualistic one because it refers to a process of gaining optimum value creation using people, process and technology. It is not merely bargaining from the best supplier in the list but concerning more towards long-term procurement strategies which may gain competitive advantage to the organization and it should go

beyond the concept of “Buy the same for less”.

How to optimize a procurement process?

- 1) Training and development of employees
- 2) Good supplier relationship management
- 3) Improvement of analytical and negotiation skills
- 4) Agile and consumer driven procurement
- 5) Adoption of technology
- 6) Monitoring and controlling

Implementing E-Procurement as an optimization tool.

E-procurement is management of the entire procurement process from the inflow to the outflow of the goods and services through an internet based system. Purchasing and sales of goods and services among; business to business, business to con-

sumer and business to government can be done through e-procurement methods. Early e-procurement systems suppliers like Ariba and Commerce One started to support basic operational procurement functions such as auctioning tools and quotation request options. Nowadays it has been developed up to EDI (Electronic Data Interchange) and ERP (Enterprise Resource Planning) systems such as Di Central EDI, DEL Bhoomi, GENSOFT, Sage Intacct and Microsoft Dynamics.

E-Procurement is not only one single application but it consists of 06 different applications known as, e-sourcing, e-tendering, e-informing, e-reverse auctions, e-MRO (Material Requisition Order) and Enterprise Resource Planning (ERP) and e-collaboration. These 06 applications cover the entire procurement process through an Internet-based process.

Importance of implementing e-procurement

Since the procurement process links with every department and directly impacts the revenue generation in an organization it is important to create a smooth flow in the process and take corrective actions for the deviations. All the organizations tend to convert the resources into sell-

able products or services and thereby gain profit. With the competitive business world, the organizations should be concerned about how those resources can be procured in the most efficient and effective way using tactics and smart operations.

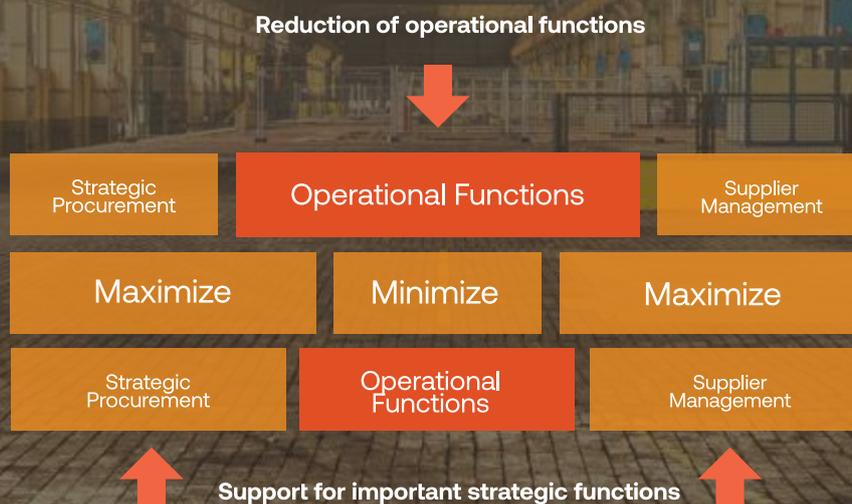
The key driving forces of a good e-procurement process could be identified as;

- High Efficiency
- High Effectiveness
- High Transparency level
- Decentralized procurement process
- High Competitiveness

Benefits of e-procurement

- Can reduce unitary cost of a purchase
- Reduced lead time
- Increased Procurement Quality
- Increased supplier's participation and competitiveness
- Reduced paper consumption and archiving costs
- Increased quality and availability of information
- The optimal demand of raw materials, services can be reviewed

Furthermore, the operational activities in a procurement process can be decentralized while the strategic procurement activities can be centralized and this leads to a high transparency level in the entire supply chain of an organization due to e-procurement.



SOURCE: SUCCESSFUL USE OF E-PROCUREMENT IN SUPPLY CHAINS

Challenges when implementing e-procurement procedures

1) The capital and maintenance cost is too high

One of the biggest challenges seems to be the high introduction costs and maintenance for new IT solution for supporting e-Procurement.

2) Lack of knowledge and expertise among suppliers

Suppliers may be reluctant to adopt e – purchasing initiatives, therefore buyers may face continuous problems. Smaller firms are lacking of technology and have financial shortages to adopt a new system.

3) E-procurement systems may subject to hacker attacks

Since these are IT systems, it may get down due to troubleshoots and especially due to hacker attacks. Therefor there is a high risk of information leaks.

4) Drawbacks in e-procurement systems

These systems lack analytical capabilities and are unable to handle multiple data formats. Complex jurisdictions, currencies, and tax structures cannot be managed by some softwares. It is hard to keep controls and data management standards when adding other procurement systems.

E-procurement is not just a system to purchase things online but it is a system where cost is saved and efficiency of the total procurement process is increased. Therefore, an organization could achieve procurement optimization and thereby achieve their goals efficiently and effectively. The common challenges faced when implementing e-procurement systems can be overcome with new technological advancements. The benefits of this system is undoubtedly greater than the costs incurred. Therefore at any cost and challenge implementing an e-procurement system will be highly advantageous for an organization's success.



Data has a better idea

THE IMPORTANCE OF DATA FOR LOGISTICS OPTIMIZATION

Mathematical optimization is based on objective function and constraints. Transportation is one such important component of logistics. Product movement is one of the functions of transportation. The main objective of transportation in logistics management is to move the product from an original location to a prescribed destination while minimizing cost of temporal, financial and environmental resources. Temporal resources are the state of a product's inaccessibility during the transportation process.

Financial resources are the expenses for a private fleet of vehicles or commercial or public transportation in terms of

expense for driver, vehicle operations cost, general and administrative cost and expenses resulting from product loss or damage. Environmental resources are the consumption of energy, fuel and oil, congestion, air pollution and noise pollution.

As these three resource costs need to be minimized for better logistics operation, there arise the need for quantifying these costs for optimization. Quantification needs readily available meaningful data. In terms of Sri Lankan logistics operations, most firms have not realized the importance of data for their decision making.



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In fact, quantifying temporal resource cost is a challenge. But quantification of financial resource and environmental resources costs are easy provided the relevant data are collected. These data include fuel consumption, vehicle waiting time at roads due to congestion, waiting time at dropout points, tyre depreciation cost, maintenance and vehicle servicing costs, insurance cost and vehicle registration costs.

In addition, the amount of noise the vehicle makes, and the emission also needs to be collected. After that, methods can be identified to quantify the true cost of transportation between two nodes in the entire transportation network.

Technological equipment such as sensors can be used to collect the data from the computer software. If firms cannot afford to go for technological advancements, they need to modify the record keeping methods in order to ensure that meaningful data are collected. Recording the actual departure time of the vehicle from the warehouse and the actual arrival time at the destination warehouse will help to quantify the travel time in between two warehouses and

also the waiting time at roads due to traffic condition can be calculated. The actual travel time from average travel time data can also be calculated from Google Maps. Keeping proper records of fuel consumed between warehouses will enable to calculate the fuel cost. For this, fuel consumption rate is important. The kilometer travelled by vehicles must be recorded to calculate the fuel consumption rate of the vehicle. The cost incurred for changing the engine oil of the vehicles and the kilometer travelled between two engine oil changing turns must be recorded. The servicing cost and the repair cost must be well recorded along with the kilometer travelled in between to servicing turns. The same is applicable for methods such as vehicle insurance cost and registration cost.

In conclusion, firms must pay attention on developing data collection frameworks for better optimization of their logistics systems. This will pave the way for cost reduction approach in the transportation systems and to survive in the market with a competitive advantage.



INTERVIEW

**MR. CHANNAKA DE ALWIS –
DEPUTY DIRECTOR
ABANS LOGISTICS (PVT) LTD.**

*Interviewed by – Madushika Ranasinghe,
Natasha Jansen,
Tharushi Gammarachchige and
Bhanu Mudalige
Written by – Madushika Ranasinghe*

Q. As the logistics arm of Abans Group, Abans Logistics offer their clients with a range of world class logistics solutions. Why should a company integrate their supply chain/logistics services? How does integrated supply chain/logistics help your company in providing efficient and effective services to your clients?

A. In general, why any company would choose to integrate their logistics operations is very simple: it is a requirement, especially if they are a conglomerate with divisions or SBUs doing similar import, export or logistics related activities. Also, primarily because it is a huge cost reduction where you can completely eliminate duplication of work. There is visibility and it is super-efficient if you have an integrated system. Importation, warehousing, distribution, inventory control and finance can all be integrated to one platform to gain pure visibility. Integration is important because people tend to operate in silos using their own styles and procedures. As an example, import division only concentrates on its tasks though it is very much linked to inventory control as well as marketing and sales. Marketing and sales give necessary input for inventory control and imports to decide the require-

ment. If there is no back and forth communication or sharing of information, people most often tend to make opinion-based decisions rather than evidence or information/data-backed decisions. That would prove to be very costly to most organizations. An integrated system facilitates sharing of necessary information from A to Z enabling information driven decision making. Irrespective of whether you sell a service or a product, information and visibility are key factors in decision making. Opinion-based decisions should be eliminated in Supply Chain Management. Integration of finance with logistics is equally important. All of logistics decisions have financial consequences.

Q. What kind of new technological applications, procedures and systems are used in the supply chain and logistics operations within your company?

A. Right now there is an initiative at group level to digitize and digitalize all our processes. In 2006, when developing SCM1 we focused on elimination of duplication of work, connectivity and seamless flow of information from one department to the other within SCM departments. When a PO is entered into the system, that information is carried forward to all levels and only the nature and the usage of the information will change. This enhances accuracy and reliability. Within our freight operation there has been significant changes over the past decade. E-manifesting has made the processes seamless and less reliant on printed documents. We are also extensively using barcode scanning to keep track of inventory.



When it comes to RFID, our usage at the moment is quite limited because when we first accessed feasibility, it was quite expensive but now it is getting cheaper, so in the time to come, barcode will be replaced by RFID tags. It's easy when you walk into the warehouse, if the goods will tell you where they are. At the time of discharging a container, we serialize and barcode everything and because of integration, you know exactly where to put it, what bin location, etc.

When it comes to Internet of Things, we also do that, but cost plays a major role. These technologies are available but at times, might not be cost effective. So you need to strike a balance. Logistics is all about moving items with minimum effort and cost within least time. Adopting new technology which is not cost effective when compared to the task at hand, deserves re-evaluation. At the end, SCM is not an end but a means to an end only.

In 2008 we had mobile applications and GPS tracking. We might have been one of the first companies to adopt those technologies in Sri Lanka at that time.

One of our subsidiaries is into e-waste management. Thus, we are quite aware of technology and its impact on our lives. As a group we strive to strike a balance to be more

socially responsible and sustainable.

Q. Supply chain transparency remains a top concern for most companies today. As a result of that, most companies integrate Blockchain technology and IOT into their supply chains. What are your thoughts on this?

A. In earlier days, we maintained very expensive servers so we could keep our own data. Nowadays most people prefer to be cloud-based. Blockchain is a safe modality in saving documents/data, because of its one version of truth approach. If you amend the document, same information flows throughout all verticals whilst principle (original or core) information is still there at its face value in blockchain. Companies are able to refer back to the original document and backtrack information. Lots of Sri Lankan companies talk of blockchain and I am yet to come across a company that uses blockchain to its maximum utility. I could be wrong. But certainly, blockchain would change how we transact in future.

Technology is something that you need to embrace, but then there are also limitations that come with it. Companies should not adopt technology because it is in fashion. Several years back I was exposed to blockchain and it seemed like an interesting thing. It has

synchronization tools which can be traced back.

There is a difference between digitalization and digitization. You are digitizing what is existing. Digitalization is to make improvements and you are also foregoing lot of waste and adopting lean processes. Going paperless and cloud-base makes an impact on how we do things. Information sharing is becoming instant. Thanks to technology, access can be controlled and monitored enhancing security levels of what we share. OCR (Original Character Recognition) enables us to eliminate waste and archive documents much more expeditiously than before. Also we are much more environment-friendly as gradually we are hoping to purely go digital. No more photocopies.

Q. We see a growing use of robots and robotic process automation software in the logistics industry. Even though robotic automation is new to Sri Lankan companies, how important is it to adapt to these changes and what kind of challenges can the Sri Lankan companies face in implementing these?

A. In terms of warehousing, I think there is a very good opportunity for us to adopt automated warehouse techniques to a certain degree. At the moment, we are running out of land, so maximum utility of assets becomes important where you can apply robotics and new technologies. But in most cases, cost becomes very relevant and companies should evaluate cost versus benefits. In some cases, full automation or even partial automation might be worth owing to efficiencies and one may derive enhanced accuracy through automation.

Pharmaceuticals is an industry that robotic technology and automation can be readily applied. Garments and food would be others. We have fully

automated factories. Thus, full automation or partial automation of subsequent process in logistics can be done. There are automated racking systems in Sri Lanka. However, most are operated in temperature controlled environments for high value cargo. One of the limiting factors we encounter here in attempting to automate racking is dust. However, we are in fact improving our facilities to ensure automation and robotics can be facilitated in time to come. Technology is great and companies need to embrace it through heeding to adoptability, applicability, expected efficiency/effectiveness and of course, the cost.

Q. How important is it for a company to be more agile in terms of supply chain planning in relation to matters such as climate events, new tariffs and global trade issues?

A. The best example is what is happening now with Covid-19. There are people who say to plan for the unexpected, but you cannot plan for the unexpected. What you can do is, you can be ready so nothing surprising will occur. If we

consider the garment industry, their supplies and consumers are blocked, so they have been attacked from both ends. When dealing with Corona, between what we can do and what we should do, there are operational, financial, psychological, environmental, economic impacts together with socio-political impacts, and none of these things can be planned. You are going to face unpredictable situations where planning or anticipating outcomes are simply impossible. The best way to deal with such scenarios are to discipline yourself to be more agile and responsive to face whatever challenges you are presented with. Artificial Intelligence is good, but AI goes on past data, and deciding what will happen next is completely ignored. This is why humans are important. Companies should utilize computers to make everything easier, but it should not be everything. Socio-political crises, environmental problems, economic crisis and manmade crises are going to be a major threat especially for your generation.



As we reacted to our ethnic conflict, political turmoil or whatever, you are going to learn to deal with these. Next time when Corona comes none of us will take notice of it and that is adoptability. How can we plan for something unforeseen. Be agile, be able to change yourself, companies, business plans and strategies. Good thing about Sri Lankans is that we can adapt, and we are very innovative. The creatures who survive during crises are the ones who are most adaptable not the strongest. Companies should be willing to do things that they have never done and be willing to change.

Q. Even though many organizations still use on premise supply chain software, there is a trend of adapting cloud-based supply chain applications which are flexible and scalable, and offer global reach and better functionality. What are your thoughts on this?

A. There are advantages of adopting cloud-based technology owing to accessibility. You will be somewhat foolish if you have your own server anymore. But in crisis situations, people sometimes need to keep options available. Keeping all those systems running at a sort of scale down version might be useful. Companies need to adopt new technology and also have fall back plans.

Q. Sustainability has become one of the main concerns of the world today with customers demanding sustainable practices and green products. What kind

of practices are followed by Abans Logistics in order to make sure that sustainability practices are achieved?

A. At the moment we generate one megawatt of electricity through our solar systems at Seeduwa premises. We have a freezer operation (Cold Chain) in our container yard and our electricity bill is quite high. Thus we embraced solar in order to cater to our requirement in an environment friendly and sustainable manner. We actually want to be environmental-friendly because it is the right thing to do, not expecting any other advantages in return. We harvest rain water through our 250,000 square feet of roof exposure. The rain water is diverted to underground sumps without external exposure. Rain water is then utilized for our own consumption at the facility. Also we have two water treatment plants within the same premises. If our company lets dirty water flow everywhere, it will result in dirtying our own surrounding and most importantly as we are located close to the lagoon, we need to be highly environmental-conscious. Treated water is used to cater to non-portable requirements of the facility. Treated solid waste is used as fertilizer. Sustainability is not a fashion. It is a way of life and a mark of being a good corporate citizen. We don't need a certificate to say that we are good environmentalists and we practice those, because it is our responsibility as a corporate citizen. Companies should not harm the environment and should adopt sustainability as a core operational value. Going digital is also being sustainable.

Q. Where do you see the future of Logistics and Supply Chain in Sri Lanka? What are the challenges we face as a country in becoming a Logistics Hub?

A. The geographical location alone is not enough for us to be a logistics hub. It is a fact that Sri Lanka is in the middle of a busy shipping lane with air connectivity of reaching almost several billion people in less than 4 hours. Ports and airports are only infrastructure necessities. But what attracts businesses to be a genuine hub are world class best practices in cargo handling, re-working, consolidation, finance and above all legal framework acting as a facilitator rather than an obstructer to the global value chain. At present our legal system might be a barrier to achieve that grandeur and noble objective. Can a grieved party get swift justice through either criminal or civil courts in Sri Lanka? Universally, time is money. It is a commodity. Without a fair, transparent, equitable and swift justice system it would be rather difficult to achieve the trust and faith of global traders to adopt our location as a hub. Even at present, certain practical requirements in global trade encounter a lot of bureaucratic obstructions when attempting simple tasks owing to current legal systems that include customs formalities and procedures. However, one must make note of great strides made in the recent past in ironing out some of these obstructions

Increased popularity in choosing transport and logistics as a degree or field of professional development bears well for the future of making Sri Lanka as a logistics hub. Skilled workforce, necessary infrastructure and legal framework will form the cornerstone of a vibrant maritime, aviation and logistics hub. To make this dream a reality all these will have to be aligned.

Q. As one of the chairpersons of CILT Sri Lanka, what is the importance of being a part of a professional body?

A. Networking is the main advantage for undergraduates. It is not an academic institute; it is a professional institute and our mandate is to disseminate key knowledge in transport and logistics. For young people especially, it is an opportunity to learn and meet people from several industries in transport and logistics. It empowers you and will help you to share knowledge or seek assistance if and when required. You will be exposed to industry personnel at various verticals related to transport and logistics. CILT will give you the opportunity to get in contact with people from various disciplines and shape your professional outlook. For me, it had given me the opportunity to learn about other fields which I may not have done if it wasn't for my involvement with CILT. It had also provided me access to experts in various fields related to Logistics and Transport and on few occasion to other fields such as Civil Engineering and Soil

Technology when I had encountered issues in my professional carrier.

Being involved in CILT has helped me a great deal in being a better employee and a professional in my chosen field. I had ventured into new businesses that I knew nothing about, because of my association with CILT which had given me access to a network of professionals.

Q. As a personality who has more than 22 years of experience in supply chain and logistics industry, what advice can you give to young undergraduates?

A. Your book knowledge is very good, but knowing theory and being able to practice or implement is a different story. Acquire knowledge as much as you can and develop interests in other fields because of the unpredictable nature of the world we live in. It would also widen your horizon. Develop certain skills and be an expert in one or two. Work on aptitude and attitude. Be positive and be willing to learn, change and adopt. Undertake even remedial tasks and give your utmost. Simple things matter. Learn the basics. Be willing to learn from all. A degree certificate is only the starting point. It is neither the end of your learning and development nor is it the ultimate objective of your carrier aspirations. Your destiny is yours to make from that starting point.

Currently one of the major problems in management

trainees is their aptitude and attitude. Respect, benefits and recognitions must be earned. Be grounded at all times. Be humble. Respect those who had put in the time and efforts to develop though they may not have the academic prowess that you may have. Learn to respect other points of view. Learn to stand your ground and respectfully disagree with others through constructive criticism. Be a change agent.

What you know and how you behave is what makes you who you are. Do not be shy to get down and learn from scratch. If you are doing port operations, get a port permit and go see the operations. See and experience the hardships that others have to go through and learn from them. Individuals are judged by what they know, how they behave and how they treat others, not by their qualifications. Be a professional not for name sake but to actually be a professional. Talk to people. Don't hesitate to say 'I don't know' so that you can learn.



“SUPPLY
CHAIN IS LIKE
NATURE, IT IS
ALL AROUND
US.”

- Dave Waters

BIG DATA - IMPROVING THE OPTIMIZATION OF INTEGRATED LOGISTICS



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In the simplest form, the flow of items from the point of origination to the point of consumption in order to satisfy the customer requirement is recognized as logistics. Revolving around these concepts the world's business such as courier, door-to-door delivery and many more have developed.

But just by completing this flow these organizations do not have a chance to stand among others. In order to attain the competitive advantage companies would strive for more cost-efficient strategic ways of performing the logistics process. Thus, the current business world focuses on integrated logistics.

Then the question is what exactly is integrated logistics and what makes it so attractive for entities. For example, think about the process you go through as a customer, once you place an order online

through an ecommerce website. An integrated company would arrange all the procedural activities including planning the shipment, organizing the shipment and coordinating the shipment. in such a way that it optimizes productivity and ensures success. Such a process would require better connectivity and real-time collaboration. Integrated logistics would also be termed as "smart logistics".

The integration of the processes allows for more secure and objective coordination which impacts on minimizing risks. The integrated management of information and the material flow allows entities a comprehensive view on the supply chain which in turn favours the entity's strategic planning.

Moreover, it minimizes the cost and makes more efficient use

of time. Satisfaction levels of the stakeholders of integrated logistics process would be much higher given that the process would be more well organized and well managed, which make the process more certain. These would make organizations to move towards integrated logistics.

It is quite evident that integrated logistics stress on real-time connectivity and collaboration. In order to harvest the optimization benefits mentioned above. The process should have the ability to subdue a number of challenges, some of which are;



- Ability to provide a transparent report on the inventory and material status
- Real-time communications among the participant along the chain (i.e. stakeholders such as retailers, whole sellers etc.) backed up proper analysis of data
- Collaboration among the stakeholders

It's prudent that "data" plays a vast role in integration of logistics. In order to accrue the benefits, organizations have to rely on vast amounts of data.

This would help the stakeholders to get more informed regarding the process and improve transparency. And better strategic plans can be implemented for further improvement based on sound and more informed decision.

In this crisis, Big data can help logisticians immensely. Large amounts of data that cannot be processed using normal data processing mechanisms are termed big data. We need special processing software such as "Hadoop" in order to

process Big data. Big data depicts four main characteristics which are higher volume, greater variety, veracity and greater velocity (4Vs). Now let's discern how big data answers the challenges in integrated logistics.

- **Route Optimization:**

One of the major requirements of companies which are engaging in logistics related businesses, is the timely delivery of the freight and in the most cost-effective manner. Due to lack of forecasted information, cargo handling vehicles would unknowingly choose routes packed with traffic jams or there might be situations where the delivery person is unable to find the exact delivery destination.

These result in the waste of time, fuel wastage and opportunity cost for the delivery company (in terms of the revenue that could have been accrued if they tracked the route effectively and reduced the non-value adding costs of waiting time and fuel costs) as well as for the customer, be it an individual or a business (the business activities they could have done if the right product was delivered to them at the right time).

The main objective of integrated logistics optimization is to be cost effective while achieving timely shipments. If the delivery routes are not planned in an optimum manner, too many vehicles would be using the same route resulting spending more money and resources that can be effectively used elsewhere. If the delivery company does not plan the shipments properly it will hinder the brand image and

customer loyalty.

UPS uses Big data to optimize their routes. Sensors attached to their trucks give information to their planning hub with weather conditions, most used routes and peak hours of using those routes. Through this optimization they have saved huge sums of cash which they invest in other profitable ventures.

- **Preserving Quality of the products**

Optimizing the route and achieving the timely delivery of the shipment only would, not necessarily win customers hearts. All of these efforts would be futile if the quality of the products is not preserved. Thanks to Big data, delivery companies have temperature sensors that signal the driver and the coordinating hubs on the quality of the storage conditions inside the truck. This is useful in delivery of floral and dairy products.

- **Transparency improving reliability and collaboration:**

Through Big data, shippers, carriers and customers have access to real-time data on delivery status. All participants of the logistics process are insightful about the process. None of them are blocked from knowing what's the status of the shipment. This allows to reduce conflicts among each other. If some crisis occurs, such as an accident, the remaining steps would be arranged more

quickly than that of a system which is not backed by Big data analytics. The process can move forward smoothly helping the participants to accrue profits in the most optimal manner. This real-time information improves the reliability and collaboration among each other.

- **Providing a better experience for customers:**

Companies integrate their logistics activities to outstand in the competitive business world. One of the best ways to attain sustainable competition is improving their service in par with customer requirement. Big data analytics can be used to track social media surveys which are less costly yet more effective.

Companies can make an attempt to deliver their customer's orders within the time period specified by the customer. By customizing the shipments, it would boost the customer relationship, thus attracting more businesses to the logistics firms.

It's true that considerable amount of initial investment is required for Big data analytics in terms of both physical and human resources. But the benefits that a firm can attract both in financial terms such as more revenue sources, reduction of non-value adding costs and non-financial terms such as collaborative logistics partners, customer loyalty,

sustainable competitive advantages and brand loyalty prove that companies should take efforts in investing in Big data.

Most of leading logistics companies such as UPS, DHL are widely investing in Big data analytics. It's been reported that UPS annually invests around one million dollars for the improvement in the said field. Through these they have been able to reduce the last mileage delivery, optimize the process, improve transparency and collaboration. More than that they are able to have a large customer base which is loyal to their brands and this makes the company attract

more profitable ventures.

Big data is the initial step in revolutionizing the whole of logistics and supply chain management. If companies invest in these technologies, it would lead to a better customer experience leading to more informed strategic decisions and innovations.

“Without Big data analytics, companies are blind and deaf, wandering out onto the web like deer on a freeway.”
(Geoffrey Moore, author and consultant)

THE IMPORTANCE OF INFORMATION TECHNOLOGY TO OPTIMIZE INTEGRATED LOGISTICS NETWORK



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LOGISTICS INFORMATION SYSTEMS



Logistics is the discipline which examines the movement of goods and services and related information within and between organizations. Since logistics represents the functional integration of many activities within the flow of goods, coordination theory implements a framework for understanding and operating supply chains. Based on

this, logistics can be divided into two aspects; physical (flow and storage of goods) and information (flow of information related to the goods). The movement of information should be optimized and thereby this leads to several connections within the substructures of the integrated logistics system.

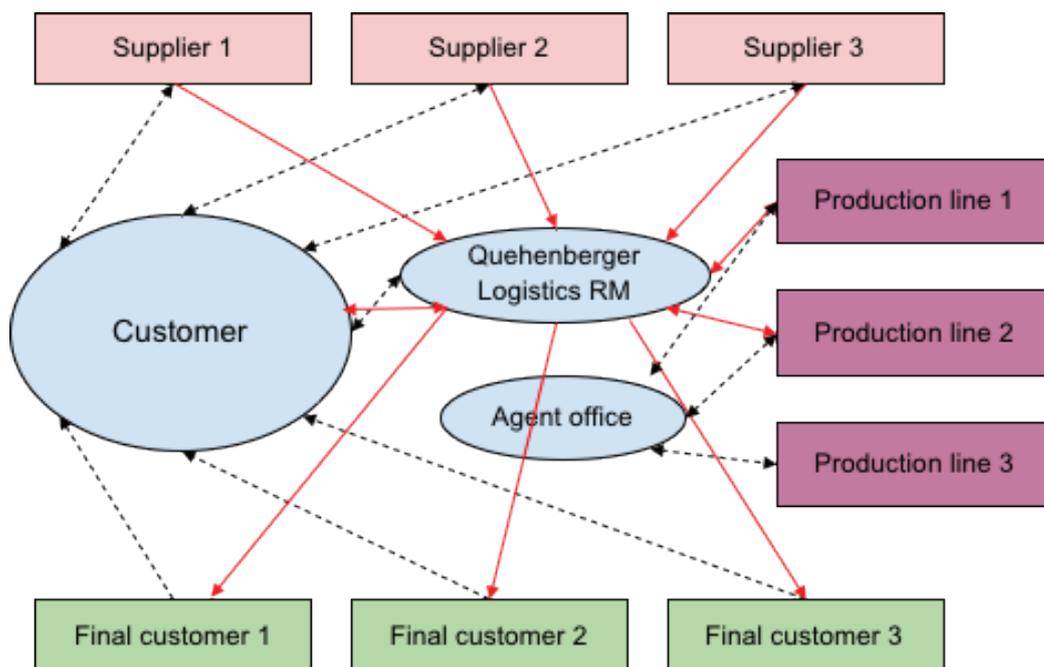
Logistics information system could be identified as “Transforming people, equipment and processes in order to gather, sort, analyze, evaluate and distribute the information to appropriate people who make timely, accurate and high-quality logistics decisions.”

According to the above definition, it is clear that the main issue faced by managers of integrated logistics is provision of information for decision making on time. The logistics information system enables the gathering of information from different sources, since it is connected to marketing manufacturing and financial information systems. It is difficult to take decisions within information so it has to be collected and sorted accurately and delivered to the right people at the right time with the right form. Decision making changes with hierarchical levels and significance of information increase from lower to top level. The information guides to take strategic decisions for top level management while at lower level of decision making information enables to take

operational decisions. The logistics information system structure can be identified as one of the significant factors for the improvement of Integrated Logistics.

Information processing means the gathering, recording, organization, retrieval, displaying and disseminating of information. The Information is not related to the same restrictions as flow of physical goods but it may create additional efficiency to results. It develops Coordination among people when allocating resources, communication and making decisions within and between organizations. The concept of information processing was developed to support the integration of logistics activities such as purchasing, production planning, inventory management, customer

service, transportation, warehousing, demand forecasting, packaging, facility location and other activities. The growth of computers and software at a reasonable price has made sophisticated management information systems accessible for the smallest company as well. Companies are now combining their internal logistics information systems to their suppliers and customers to give a value addition for the entire supply chain. Accordingly, open exchange of information can allow faster ordering, delivery service and higher accountability within the logistics process.



Source: Organizational model of Quehenberger Logistics

Optimization of information processing in logistics through IT.

The simple meaning of optimization means achieving the best possible outcome from limited resources. With the development of technology, many changes affect the areas of integrated logistics and the optimization of this process could be done using IT which is an excellent opportunity to increase performance of all logistics activities. All the sub categories of logistics can be included in the broad application of information technology, that will minimize the time for information exchange and leads to faster completion of orders. Furthermore, large cost savings can be achieved by the company. Organizations now apply many information technologies for logistics operations such as:

1) Radio frequency identification (RFID)

RFID technology is used as

an effective application system for tracking goods in the supply chain which are placed on pallets or boxes and this significantly accelerates the transport of large quantities of goods.

2) Electronic Data Interchange (EDI)

EDI is used to transmit all documented information over an electronic network as paperless transactions.

3) Decision support system (DSS)

This is used as a support for vertical information flow between organizational and managerial levels, which will be accurate, relevant and complete. For example, a logistics manager can easily and quickly make decisions regarding the amount of purchases or time that he needs to access procurement.

4) Satellite tracking of vehicle and others

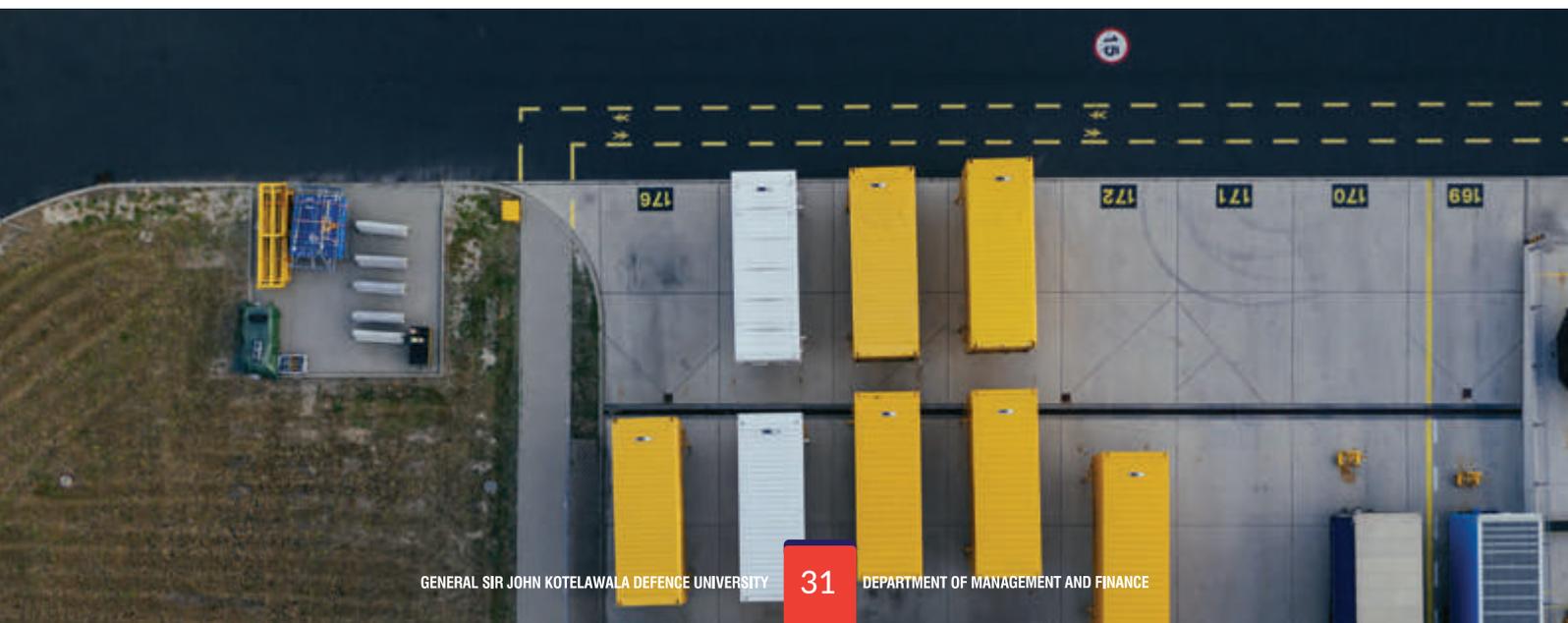
This enables to check which vehicle is in motion and where the vehicle is on

the map. It is also used to monitor vehicle speed and route.

5) Bar code readers

This system is used for the purpose of identifying products and other related details such as date, time, price and importer.

All logistics activities such as order processing, warehousing and distributing can be integrated under one unique system through IT. IT improves coordination in supply chain activities by reducing uncertainty and helps in effective decision making and communication.



Benefits of applying information technology in integrated logistics

- 1) Through implementation of e-commerce, an intermediary party will be dropped and this leads to a reduction in overall cost.
- 2) Even when the operating time of the retail store finishes, Information technologies will enable customers to order goods at any time.
- 3) The coordination among the members in a supply chain will increase because e-commerce will facilitate exchange of information.
- 4) A logistics information system leads to achieve competitive advantage through new product developments and increases the level of customer service which is the main aim of integrated logistics.

Challenges when implementing IT systems in Logistics operations.

- 1) Research should be conducted prior to the implemen-

tation of the new technology on whether it will be supported by the right process and is aligned with the industry process.

- 2) Once new technology is implemented, the management will face the challenge of changing the internal culture of the supply chain.

- 3) It is difficult to identify people who are willing to change within an organization because a specific mindset may have prevailed for many years.

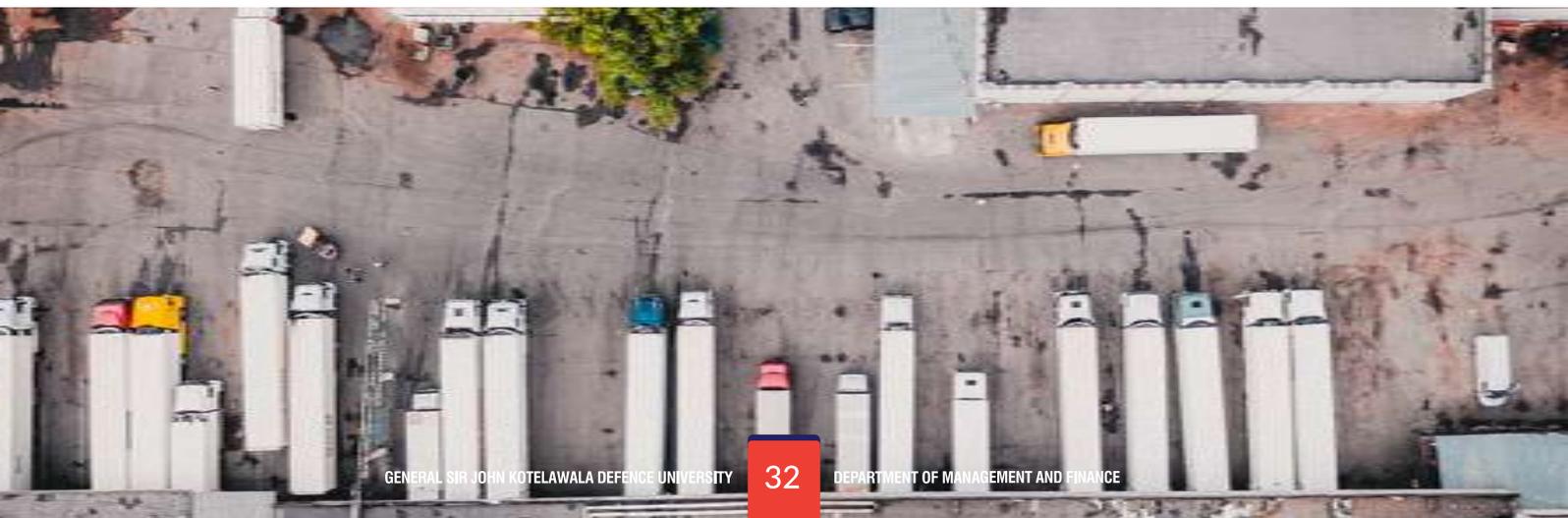
- 4) Malfunctioning and disconnected enterprise systems may lead to data repetition.

- 5) Inaccurate and outdated data will lead to failure. Therefore before implementing new technology, companies should focus on updating the entire information system.

- 6) Lack of interest of managers, unskilled employees, high cost and time incurred in implementing IT solutions are some preserved problems of Information Technologies.

IT is a significant factor which

supports entire Logistics information systems. The collaborative efforts of IT may lead to cost reduction, high accuracy in information and increased productivity. Furthermore, IT will support strategic analysis and enable flexibility in Integrated Logistics activities. The information systems connected through every aspect of logistics are a key factor for the success of the entire logistics activities. For a logistics system to be integrated, the information system within the system should be optimized. For optimization of an information system the best way is implementing Information technologies. Therefore the back bone of integrated logistics is a good Information Technology (IT) Network.





INTERVIEW

MR. IBRAHIM SALEEM – MEMBER OF GROUP MANAGEMENT COMMITTEE HAYLEYS ADVANTIS LIMITED.

Mr. Ibrahim Saleem, is a well-experienced professional in the field of shipping, freight forwarding, bunkering and chartering sectors in Sri Lanka. With his experience that spans over 19 years, in which he secured around ten posts, he has managed to be a member of the Group Committee of Management of Hayleys Advantis since 2015. Mr. Ibrahim Saleem, who works towards taking the Hayleys Advantis Group towards better standards, holds himself an MBA, and is also a member of the Chartered Institute of Logistics and Transport.

*Interviewed by - Harini Jayathilake, Helani Fonseka and Natasha Jansen
Written by - Helani Fonseka*

Q. Tell us how you got to the position of Director at a very young age?

A. Joining the industry as a Management Trainee back in 1998, when the Management Training Programme was rapidly becoming popular, I was taking part in a structured programme where I was assigned tasks in various companies for a period of one to two months in each. Being able to complete my training programme in almost six months, I was lucky enough to get the opportunity to join the Corporate Business Development Unit at a time when the Group was rapidly diversifying itself from being a shipping agent, to warehousing, to being a ship owner, to being involved in bunkering, overseas

operations, freight forwarding and so on. I believe I was at the right place at the right time, as I was privileged to be a part of the Corporate Business Development Unit which was essentially in charge of driving and maintaining diversification of the business, which gave me exposure on various aspects of logistics and shipping.

I was able to join my first board of directors at the age of 29, of one of our freight forwarding businesses in India, and this is where I got an opportunity to lead a team. Since then I have had several different roles overlooking multiple businesses within the Group.

Q. What is your current role at Hayleys Advantis?

A. I am now a member of the Group Management Committee, where there are twelve members including the Board of Directors. Each one has a cluster of businesses that we overlook and support. In detail, Hayleys Advantis being the parent company, has almost 50 subsidiary companies in seven countries, with an employee base of almost 3000 direct staff and 3000 contract staff. These 50 companies are then assigned as clusters to the twelve members, in which our role primarily is to support the heads of these companies in giving strategic direction, in problem solving and growth.

Q. As an industry expert, how do you see the value of integrated logistics in increasing and maintaining efficiency of an organization?

A. Integrated logistics would be the building up of capabilities within the entire logistics supply chain with different operational aspects. Optimizing this is a very critical subject that requires careful attention. For almost the past two decades, supply chain management has been the defining factor in the success of industries such as pharmaceutical, petroleum or even garments. It has come to a point where the 'make or break' factor of a company lies in its supply chain, because the optimization of this is only going to make the company successful. In general, logistics make up a significant 15% of the Sri Lankan GDP, thereby showing how the competitiveness of all industries increase with the improvement in optimization of supply chain management and integrated logistics. This clearly depicts how critical integrated logistics can be for an organization.

Q. How challenging is it for a third-party logistics provider like Hayleys Advantis to ensure superior integrated logistics services for their clients?

A. Challenging as it is, it can be very exciting as well as interesting, and it could be said as the very reason of our existence and a part of our purpose because Hayleys Advantis, as a service provider, is bound to assist industries in

solving their problems. The level of challenges depends on the type of industry where different types of solutions are needed for different problems. For example, the garment sector has a complex supply chain; where raw materials are imported, then the process of conversion takes place locally and then finally exported. The industry at present is facing obstacles due to the prevailing conditions in China and Hong Kong, which are the largest suppliers of raw materials. With the shortage of raw materials, the local garment manufacturers are struggling to meet their contractual obligations to their buyers. It is our duty to serve in times of need by going to special lengths to support and provide solutions, and to ensure that our clients' cargo is prioritized. One such solution could be to use air or even express services instead of ocean freight to transport cargo, if clients are willing. Therefore, Hayleys Advantis aims to bring satisfaction to their clients as there is nothing like doing the impossible, even in the most challenging environment.

Q. What are the key ingredients for successful and practical integrated logistics according to your point of view?

A. These can be a few things, and competencies can be discussed as the first. The competency to understand supply chain management, integrated logistics and also to deliver the right services would be crucial in the industry. Competencies are gained by people, therefore, having the 'right people' in place to deliver

expectations are critical. Furthermore, the right attitude of an employee is critical to the success of a business, as employees who are willing to go an extra mile to solve problems and to deliver on promises will contribute positively to an organization.

Next can be the availability of infrastructure in order to support the entire integrated logistics concept. This is the provision of facilities at ports, airports and transport ways and also in the warehousing sector.

Another factor would be the access of systems, in other words, technology. In this rapidly developing world, the investment made on technology is very much higher than the past, because integrated logistics now relies on technology.

Finally, an external factor, is government policies. Service providers can be successful, when the service industries are highly developed and efficient. For this, it is important that the environment in which the industry functions is conducive. Not only in Sri Lanka, but also in other countries that we function in - Maldives, India, Myanmar, Indonesia, Singapore and Bangladesh - it is important that there are no restrictive policies on operations in order to facilitate integrated logistics.

Q. What are the technological advancements Hayleys Advantis has taken in order to increase the visibility and transparency of their third party logistics operations?

A. This can be explained in relation to three areas of the business. The first is related to demand. Predictive analytics is used here as a method to understand what customers will want tomorrow, based on their needs today. For example, this is how Google or Facebook knows what your interests are, because this process is about crunching the information gathered to analyze trends for the future, using technology. In the industry, it is important for us to analyze the essential trends, to know what impacts they would have on logistics operations.

Next, we can analyze the area of efficiency and optimization of operational processes. As Hayleys Advantis is involved in shipping, air freight, trucking and last-mile delivery, it is important for us as a parent company to optimize our operations to increase efficiency. For example, considering the warehousing sector, the capital infused on infrastructure, like facilities, manpower and hardware, is important to be considered because if these function well, then revenue earned will also be high. Therefore, the use of technology has become very useful in increasing efficiencies and throughput from the entire system by using automated conveyor systems, automatic data transfers using RFID & barcode scanners and

inter-relating these data using technology. Also, from a warehousing perspective, it is vital that we have up-to-date stock counts, as when our trusted clients request for stock updates, we should be able to provide them with accurate information without delay. For this reason, most of our warehousing operations are automated and we are even testing with drones to further increase efficiency. Apart from using technology to optimize warehousing systems, it is also used to streamline distribution of cargo where route optimization of trucks is done from a control center which monitors the routes of trucks, fuel consumption and even driver alertness. This is basically like a function of Google Maps, where the best and fastest route is planned out automatically when the information regarding the purchase orders are fed into the system.

The third area is the last-mile delivery system, where independent users of vehicles are utilized to do delivery. Just like the concept of uberization, or how the largest hotel company does not own any hotels, or how the largest taxi company does not own any taxis, it has become interesting and challenging to study this concept for the distribution of cargo by using technology. However, using this type of technologies could result in customer dissatisfaction if not implemented properly. Furthermore, developed countries have even introduced robotics in their operations to minimize labour

costs and increase operational efficiencies, as labour related costs are relatively high in these countries in contrast to developing countries.

If I were to elaborate on the technological advancements further, it can be said that the factor that impedes this technology is scale. For example, companies like JD.com and AliExpress have completely automated distribution centres where robots are responsible for picking, packing, labelling and dropping the items to the conveyor systems. In Sri Lanka, unfortunately, this is not possible as we are not a huge economy. In fact, while Sri Lanka is an economy of USD 85 Billion, China is of USD 4 Trillion. Therefore, it is important to consider the factor of scale in technology adoption, as we should rely only on affordable advancements.

Q. What areas in the industry, as you see, will be affected by technology in the near future? What impact would it have on efficiency and productivity?

A. The main area which could be affected by technology could be humans, or in other words, job opportunities. According to data, it has been confirmed that machines can work better than humans in a broad scale and therefore, much focus is given to technology to increase efficiencies.



For example, introducing robots in factories, distribution centres and using autonomous vehicles in delivery are all done with the hope of significantly reducing the number of complaints and errors by using this type of technology. While comparing the jobs that were present 20-30 years ago, and now, we can see a massive decline of jobs due to the deployment of technology. As an example, Ports in Singapore have automated the gantry crane operator function, and the yards do not have any people working. Speaking on efficiency and productivity, it is certain that it will always improve in a very interesting and positive manner as issues like humans getting fatigued and so on would be non-existent.

If I take an example from outside the logistics industry, the oil market was negatively affected by the drastic drop in oil prices in March 2020, due to the significant drop in the

demand for oil. This was because when China's oil supply got restored after getting back into stream after the COVID-19 outbreak, the virus had spread into other markets resulting in less functioning ships, planes, trains and cars as the demand for transportation dropped. Even then, the oil industry still functioned and made money since their production cost was very low when compared to their selling price: \$15 and \$30 respectively at this point. This was a result of technological advancements in the oil industry in terms of production.

Q. How does Hayleys Advantis function to face regional/global outbreaks like the COVID-19 Virus, at present?

A. The first step that anyone should take as a company or even as an individual, is not panic at significant disruptive events like the Corona Virus outbreak, Easter attacks,

Tsunami or so on. In order to stay calm, it is important that we are prepared to face the relevant disaster. At Hayleys Advantis, we developed a very extensive, high level contingency plan in January at the initial stages of the outbreak with the hope of never using it because we did not hope for the worst-case scenarios to occur. We took the necessary preventive measures, where our employees were asked not to travel unless crucial, and this was escalated to zero travel with the increase in the ill-effects of the outbreak. As protective measures, we distributed masks to all our employees, initiated the use of hand sanitization and also looked closely into thermal monitoring. As responsible corporate citizens, we also took steps to advise our employees on the precautions to be taken and the procedures and actions to be taken based on the contingency plan of the company.

Q. Has Hayleys Advantis taken any steps towards implementing 4PL services?

A. Yes, this was actually introduced a long time back when we started with the provision of consultancy services to our clients and end users. We introduced a leading software which could be used to design and model a warehousing facility, by simulating the operations. The results could then be used to optimize the design to be more practical and cost efficient.



“IF YOU DON’T GIVE UP, YOU STILL
HAVE A CHANCE. GIVING UP IS THE
GREATEST FAILURE.”

- Jack Ma

STEPS TO INITIATE AN INTEGRATED LOGISTICS CULTURE IN AN ORGANIZATION



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LOGISTICS

Logistics plays a vital role in each and every organization with regard to making goods and services available to their customers. Logistics can be referred to as planning, implementing and controlling the efficient and cost-effective flow and storage of raw materials, goods, equipment and personnel from the point of origin until the completion of an activity, in accordance with the end-user requirements as per the United Nations global marketplace. With the evolution of integrated logistics, the scope of logistics has broadened because the functions of logistics are been viewed to be done with the collaboration of every department in the organization. This means that the importance of cross-functional coordination is taken into consideration broadly by each and every organization. So, a new organization which intends to integrate the logistics function of their organization can initiate the integration through several steps;

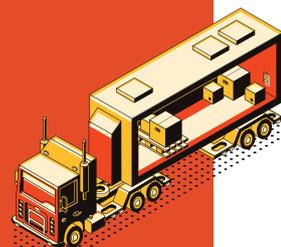
- **Doing more investment in information technology infrastructure**

When considering the integration of logistics, the collaboration among departments is a vital factor. In order to make such collaboration manual systems will not be practical to be implemented. Manual collaboration will require greater human capital and the efficiency and effectiveness will be low in this regard. Therefore, computer networking is the ideal solution in this regard for this issue. Therefore, if any organization intends to integrate the logistics function of the organization, they could spend more capital on IT assets. Computer networking, cloud computing, data bases, office package, and such other applications in IT will help organizations to make the collaboration much easier to implement. Meanwhile, IT adoption will help organizations to reduce their operational costs and increase efficiency and effec-

tiveness.

- **Increasing the awareness regarding logistics in every department in the organization**

In the traditional context, logistics functions were treated in an isolated manner in which the other departments of the organization have no considerable knowledge regarding logistics. But in case, if an organization intends to integrate their logistics function, the organization could reorganize the other functions in a way that any department should have a sound understanding on the logistics functions of the organization. In order to achieve this objective, the organization can utilize methods like providing education relating to logistics, training, workshops and promoting organizational learning on logistics for their employees.



Thereby the organization is able to create awareness on all employees of the departments which will result in active participation of all the employees for the logistics function.

- **Reorganizing the organization structure in a way that each and every department has a separate person to lead and corporate with the logistics functions.**

In order to adopt integration of logistics, the collaboration of each department will be a vital factor. Therefore, in each department there should be a specific body to corporate with the logistics department in order to carry the logistics operations smoothly. Thereby the organization should reorganize their management structure in a way that a specific personnel is there to operate and direct the logistics tasks of each department. Sometimes the organization may recruit new personnel from outside or even they can assign that task to an existing personnel inside the organization (through

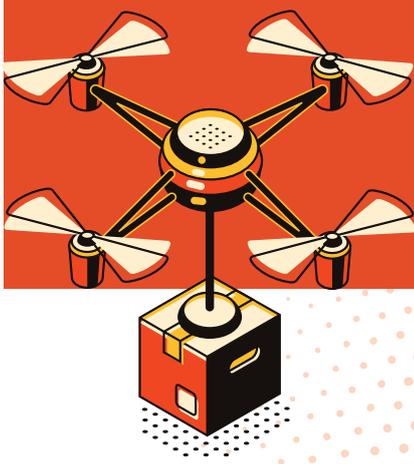
promoting or transferring of employees) to perform this role. Thereby the organization will have a broad scope and control on the logistics functions throughout the organization

- **Establishing an individual or a team in each and department who is accountable for all activity, defects and issues regarding logistics**

In the context of many organizations, most faults and mistakes have no person accountable at most times. The same scenario applies to the logistics aspect as well. Specially when the logistics function of the organization is integrated, if any issue or defect occurs it will affect all departments of the organizations. Therefore, in order to reconcile the error and bring back the functioning into normalcy, there should be a proper accountable party for the particular issue. Therefore, if there is a specific party which can be identified to be accountable it will help to solve the issues and minimize them.

- **Promoting synergetic decision-making strategy rather than making individual decisions at the department level (promoting collective decision strategy)**

If any organization intends to integrate the logistics function of the organization, the decision-making should be arranged in a synergetic manner in which all the departments will give active participation for the decision-making. If the decision-making is done in an isolated manner, the decisions will be taken only by considering a narrow scope of implementation. In case of collective decisions, they will be of higher efficiency and effectiveness. Thereby the collective mechanism will play a vital role in integration of logistics because only if collective decisions are taken, will the departments collaborate with each other.



CHALLENGES IN INTEGRATED LOGISTICS OPTIMIZATION



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Have you ever thought about how complicated this world would be, if supply chain management, inventory management, distribution systems as well as proper human resource handling are not integrated for the current supply and demand?

What is integrated logistics? It is the integration of every step from the product or service planning phase to the control and proper handling of the procedure effectively, until the product or service is consumed. When compared to traditional logistics, integrated logistics connects the production department, marketing and respective departments of the company and it arranges operational activities to minimize the organization's excessive cost and to maximize profit, which are the common

goals for an organization.

Real-time collaboration between people, processes, data and devices are the major points which organizations need to follow up. In order to streamline and make the processes efficient, organizations have to redefine the challenges involved with integrated logistics.

After the WWII, with the rise of Non-Governmental Organizations, knowledge spread throughout the world and with the enhancement of medical facilities, the world population is growing drastically. MORE POPULATION- MORE NEEDS! In recent decades, the heightened intensity of retail competition has been a major challenge in logistics. With globalization, companies expand globally and rely upon diverse

locations, partners, suppliers, logistic operations, vendors and customers, creating an increasingly difficult network to manage. It is a challenge for most of the multinational cooperation to maintain a fully integrated logistics optimization and to secure the product quality, efficiency and cost-effectiveness.

Integrated logistics optimization involves an organization's market fluctuations from material level to the demand. It is not easy to understand the efficiency of the strategies which organizations use. Detailed information on every procedure from the supply of raw materials to the retail vendor is critical in promoting a robust production.

The challenge here is to keep the level of accuracy in high standards to understand where modifications and alterations have to be applied. Real-time communication between relevant parties when a procedure occurs in the logistics chain is a typical challenge in integrated logistics systems. The challenge is to conduct a fully-integrated system, where each character can communicate data or information in real-time. It can influence the total efficiency of an organization in a large amount.

In integrated logistics, an organization would join together almost all of its critical departments, for instance, a logistics company's trading partner management, distribution management, warehouse management systems etc, where the order tracking, order visibility, transportation plan, shipment management/ analysis are in the form of digital data. Also, any company faces both advantages and disadvantages of globalization. In spite of the advantages such as Globalization giving business access to markets that would have been difficult to reach in the past, and also minimized cost through partnership formation, one of the main disadvantages is the possibility of an external party to penetrate an integrated

system of an organization and gain access to an important part, which can even turn into a massive disruption. The challenge is to maintain a totally secured network, whether it is provisional, national or international. If there is no focus on the security of an organization's properties as well as the customer details, the transactions, organizational plans, the risk is high.

Developing multiple supply chains to meet the needs of different customers and market segments is one of the crucial challenges for an integrated logistics network. For example, a multinational cooperation may perform their day-to-day transactions with different ethnicities, cultures and traditions in different places, and this is not an easy task at all. Starting from the procedure of selecting the best routes, optimum and most effective transport ways according to the location, to the procedure of recruiting employers with multi skills and conforming to relevant geographical locations, these are not things which can be done in a few days. Perfect human resource management is one of the most needed aspects to reach optimality of logistics integration.

Unpredictable break-downs of the systems, unpredictable

market changes due to security issues of a country or, intensive fluctuations of the economy are inevitable for an organization. Based on these reasons, finding ways to share risk equitably among the integrated logistics systems is important. On the other hand, when an economy turns positive, organizations should have a developed strategy to share rewards equitably among partners in the integrated system.

Above mentioned challenges have a strong and a direct effect on organizations which use integration between relevant internal and external parties of a department. Integrating activities both within and beyond organizational boundaries has become and will continue to be a major challenge for executives, and such activities are extending beyond traditional supplier to consumer logistics chain and competitive and strategic management of businesses, plus the management of supply chains.





INTERVIEW

**MR. DHAMMIKA CABRAL – DIRECTOR/HEAD OF GROUP
SUPPLY CHAIN LAUGFS HOLDINGS LTD.**

*Interviewed by – Ridmi Shamind and Natasha Jansen
Written by – Ridmi Shamindi*

Mr. Dhammika Cabral is the Director/Head of Group Supply Chain at LAUGFS Holdings Ltd which is a diversified conglomerate in Sri Lanka. With over three decades of experience in the supply chain industry, his knowledge and expertise is limitless. He has been the former General Manager - Shipping at Mackinnon Mackenzie, the Managing Director of MSC Lanka (Pvt) Ltd and also the Director – Supply Chain at Trelleborg Lanka (Pvt) Ltd. Currently he is responsible for Group Supply Chain activities of LAUGFS Holdings Ltd. His journey is interesting, unpredictable and highly intriguing.

Q. What is your role as the Group Director of LAUGFS Holdings, serving many industries?

A. LAUGFS is a family group that has been in the industry for 24 years. LAUGFS started as a small family and grew horizontally within 25 years. We have aligned ourselves with reputed logistics companies with bigger histories and experience. LAUGFS brand is known in the local minds and hearts. The company has grown, and a lot of things have been altered and properly organized including departments and supply chain. Currently we are trying to get ourselves mastered in the supply chain aspects.

We are still in our transitional period of adapting supply chain aspects to our 20+ companies inside LAUGFS. With the dynamic nature of almost everything around us, we try to acquire new energy into our organization and improve efficiency to bring in new focus. One huge challenge I see is the fact that we are in different businesses spread out in different areas. If it was to be in one process and everybody went in the same direction it would have been much easier. Since we are diversified hugely, it is much complicated. So I'm sure five years down the line as an organization, things would be different.

As the Director of Group Supply Chain, I have the responsibility of making sure that all operations and activities are going according to plan and also I have to monitor the ongoing project statuses. Me and my team are constantly working on identifying new business

opportunities that can further improve our supply chain operations. Being a Group Director- Supply Chain of a company that engages in many sectors is definitely challenging but discovering opportunities and being able to transform them into new business ventures is what makes us successful as a home-grown business.

Q. What are the models, techniques and procedures that are used to monitor the supply chain of the entire group?

A. We cannot have an order book which you can see six months down the line. Since we are at our initial stage, we gather information from everybody to have a proper system. Liquid Petroleum Gas (LPG) is the only thing we do now because we have the front line, back line, ships, terminal and we are procuring it and the terminal was initiated in July 2019. The world market challenges are also there and

still we are emerging in the international market. This company started the conversion of petrol cars into gas which is known as Lanka Auto Gas Fuel System.

Q. How has supply chain integration helped LAUGFS Holdings in keeping up with efficiencies within the team? What are the techniques that are used to minimize the complexity?

A. We are effective as the central supply chain in the LPG business. We renegotiate and arrange time frames and look into terms and serve in Sri Lanka, Bangladesh and few other customers outside. We are effective in distribution. So what is done on a small scale in an Island we do it in a global picture. Everything else is done in isolation. We provide support services for those people. Inventory management on gas is also mainly controlled by us.





Q. How does LAUGFS Holdings serve commercial, industrial and domestic requirements within the gas industry in Sri Lanka?

A. If we look at the LPG industry, there are a couple of sources to look at such as the Middle East, Africa and US as well. So, the lead times in supply chains are longer in such voyages. We were buying on the spot, but with this terminal that we have, we are able to acquire larger quantities.

Q. What is your opinion about the maritime industry at present in Sri Lanka, as a provider of ocean freight service and related logistics to LPG downstream industry?

A. As a provider of ocean freight service, which is the LPG service used for internal transport, we are geographically located in a very strategic place but in my

opinion, I think we are late as a nation to get the best out of the strategic location we are in. Countries like Malaysia, India, Singapore and Dubai have set up their operations very well because of their domestic markets. Things would have been much different if we looked into things in a different way. We invested in Hambantota as it's a good location and Colombo is congested again, but the challenge is that India took that bearing out where the coastal cargo could not transship. India had certain restrictions. They could not do transshipments from Mumbai to Chennai and they had to bring it to Colombo, discharge it and take it back, which is called 'Cabotage' and they took it out two years ago, which means they can transship around on their own and don't need Sri Lanka anymore. But due to economic bureaucracy and internal affairs we are still being favored. So in my opinion, they will do it on their own and we

will not be attractive unless we improve Hambantota and start doing LPG shipments. We have two ships out of which we are running five. The main idea is to distribute our own gas to our own customers. All ships are there to perform our own businesses.

Q. What are the new opportunities opened up and the changes that were made after the commencement of operations of South Asia's largest LPG transshipment terminal in 2019 in Sri Lanka?

A. In the maritime world, we were known only as a transshipment port, which is the Colombo port. Hambantota on the other hand became a new port and we, as LAUGFS, decided to invest in the gas terminal in Hambantota. So we are a newcomer to the port there. We just started our operations in July, and we are still getting heard in this region.

We are not a huge player and we are only serving our own customers at the moment. The future will be good because there will be more opportunities for bunker requirements and ship suppliers, including job opportunities as well.

The biggest opportunity we gained from this new terminal is the strategic location of it, being amidst key international maritime trading routes connecting West to East. It is an important energy infrastructure that could bring multiple benefits to regional LPG players, elevating its importance as a central LPG hub in South Asia. This terminal will also serve to initiate coastal shipping services between Hambantota and Colombo Port, creating and supporting many direct and indirect industries, generating a lot of job opportunities and income to the country.

Q. What are the new technological applications adopted by LAUGFS Holdings in their supply chain? What global trends have inspired LAUGFS?

A. Eventually our plan is to centrally control this diversified business. We don't have great tools as such at the moment implemented to coordinate the whole supply chain centrally. We are on SAP and we use certain modules and eventually we will have one system to control it with more machine-driven technology.

Q. The world is now more

concerned about the environment, climate change, sustainability and ethics. How should these concerns be addressed in company supply chains?

A. Stakeholders are an essential part of any supply chain, so a company should care about the wellbeing of their stakeholders and be ethical and responsible in their approach to business. Companies should always pay attention to create value and positive change towards their stakeholders and the environment.

Environment is becoming a concern because the Earth's sustainability is crucial to us in many ways. Supply chain sustainability is a trending topic as supply chains can make negative impacts on the environment including, deforestation, toxic waste and hazardous air emissions, water pollution, etc. Companies should always evaluate their environmental performance and take necessary steps to reduce harm caused by their supply chains.

When it comes to LAUGFS Holdings, we pay our attention to sustainable development through education, entrepreneurship and environment. These are guided by our value system and it has enabled LAUGFS to nurture trust and build a lasting relationship with our stakeholders, while creating a positive impact on the planet. We empower future generations, support aspiring

entrepreneurs, minimize environmental footprint and build sustainable communities to pioneer the way forward to 'Secure Our Nation's Future'.

We constantly keep our focus on a 'green concept', where we use less paper in our supply chain operations and focus more on e-businesses. Our companies, sheds and factories all use solar power and we have a solar farm, which is being further improved at the moment.

Projects like LAUGFS Eco Sri, solar powered fuel stations, greener work spaces, rooftop solar power project and e-waste management are only a few initiatives by LAUGFS to ensure that the future of our environment is safe and sound.

CHALLENGES IN APPLICATION OF OPERATIONS RESEARCH TECHNIQUES FOR OPTIMIZING SUPPLY CHAINS



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Optimization is a buzzword that never expires. Although perceived as a technical jargon, it is something that everyone uses in everyday life knowingly or unknowingly. For example, we take a taxi instead of walking to minimize the travel time, study late-night to maximize the GPA. Simply, optimization is the use of resources in a way to have the best intended results. Of course, optimization can be drilled down to a much deeper level. But I intend to keep it simple.

As you may already know, Supply chain is a relatively novel concept on managing material, finance and information flow of products from suppliers to enduser. It includes planning and forecasting, transportation, warehousing, manufacturing and after-sales services. It is not a secret that businesses rely heavily on supply chains for their survival. Supply chain

guru, Martin Christopher famously said, 'Supply chains compete, not companies.' It reflects the importance for a business to possess an effective supply chain. Therefore, continuous optimization of supply chains is inevitable for the success of a business.

Supply chain optimization can be achieved through both quantitative and qualitative methods. Operations research has been at the forefront as a powerful tool for quantitative supply chain optimization. This article focuses on application of operations research techniques to optimize supply chains. Quite a lot of supply chain problems have been identified and solved with the application of operations research techniques. Perhaps the most popular application is the inventory problem. Famous Economic Order Quantity (EOQ) model has been derived through

linear programming, which is an operations research technique. Dijkstra's algorithm is another operations research technique that has been used in supply chain for minimizing distribution cost of a supply chain.

Given the fact that every enterprise is unique, most of those models cannot be used for individual companies without any customization. Hence, for the purpose of optimizing supply chain of a particular company, operations research techniques need to be applied for that particular environment considering its policies, processes and work practices. However, throughout the process of applying operations research techniques for optimizing supply chains, analysts face numerous challenges. Few of the major challenges in this process are briefly explained below.

Understanding the problem:

This is the first step in this process. Understanding the problem and mathematical modelling is of utmost importance as it sets the foundation for the whole optimization process. It is often regarded as the hardest step in the whole process, since modelling a real-world problem into a set of mathematical symbols and equations is quite challenging. Usually, external consultants are hired for the optimization process. They might not possess the domain knowledge in the industry in which the organization is involved. Even though they might have industry expertise, it is hard to grasp the 'real' problem of the supply chain as the supply chains of each company vary. Therefore, there is a strong possibility that analysts might misunderstand the problem and build a completely irrelevant model. Obviously, such a model will not give results as intended. Thus, the initial step itself is a major challenge for the optimization process.

Selecting the right technique:

There are numerous operations research techniques developed over the last few decades for solving specific optimization problems. Some problems can be solved using various techniques at different levels of complexities. The quality of the solution will depend on the technique used. In order to get an accurate solution, the most appropriate technique must be used. There is no single right way to choose the best tech-

nique. It depends on the way analysts perceive the problem and their experience. Turning back from the optimization process to try a different technique after deciding one is a huge waste of resources. Hence, selecting the right technique at the first time is challenging as well as beneficial.

Setting reasonable assumptions:

As stated before, transformation of real-world supply chain issues into mathematical models is quite challenging. Assumptions need to be made at every instance, since real world scenarios come with thousands of variables that cannot be quantified easily. Relaxing assumptions will reduce the complexity of a problem without a doubt. But the accuracy of the proposed solution can be questionable. There is always a trade-off between complexity and accuracy of model. But over-simplification, with unreasonable assumptions can give a totally erroneous solution that will not optimize but degrade the effectiveness of the supply chain. Careful analysis is required to overcome the challenge of setting reasonable assumptions.

Implementing solutions for real-world scenario:

One challenge that comes even after getting the solution is implementation. This is the stage where most of supply chain optimization efforts fail in organizations. Reason for failure can be any mentioned before. Practicality of applying the solution will be questioned if the problem has not been

defined properly or if an inappropriate technique has been used. But adding to that, one of the most overlooked reasons for failure in implementing solutions is the resistance to change. Given that employees have been used to operating in a particular way for a long period of time, they will be reluctant to adjust themselves according to the solutions that have been provided. Therefore, carefully guided change management is necessary for the successful implementation of solutions.

The above challenges can sometimes discourage management to apply operations research techniques in optimizing supply chains. However, benefits gained through such applications cannot be overlooked. With right planning and execution, all these challenges can be addressed. Hence, this article is not to dishearten anyone, but to let them know the challenges and take proactive measures to avoid failures.

STEPPING FORWARD TO INTEGRATED LOGISTICS AND BENEFITS OF INTEGRATING LOGISTICS

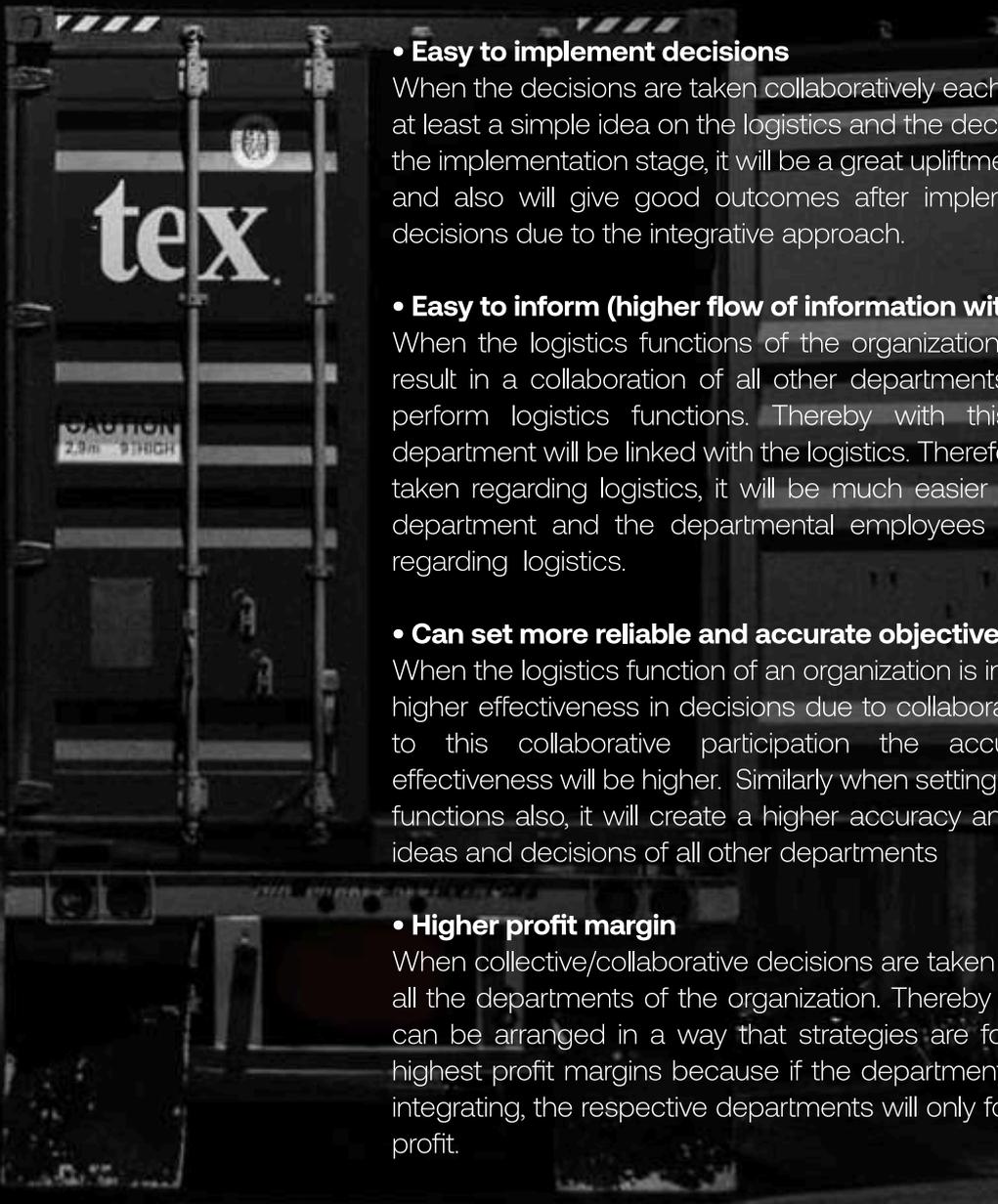


“Logistics” is a term which is widely used in the management aspects of the organization in the modern context. When considering the traditional aspects of logistics, the initial footprints of the logistics run up to the ancient history. Initially, logistics was specified to military, in which the effective supply of the war supplies to the military forces in the war period was the major objective. With such ignition logistics has achieved a wide recognition with time and at present, in almost all organizations of the world a higher priority is given for logistics in their organizations. In general logistics can be defined as managing the flow of materials, goods, services and information from point of origin to the point of consumption efficiently and effectively. As per the definitions provided by the United Nation global market place, logistics is defined as “Planning, implementing, controlling efficient and cost-effective flow and storage of raw materials, goods equipment and personnel from point of origin

until the completion of an activity in accordance with the end user requirement” Thereby, with time logistics has come a long way in which a much broader scope was achieved and was affected by the many trends with time. Meanwhile with the development of the cooperate business world and management, logistics has influenced many improvements. One of the major improvements achieved by logistics can be identified as integration of logistics.

When it comes to integrated logistics concept, it views logistics in a much complicated manner than the traditional approach. In the traditional context the logistics functions of the organizations are heavily centralized and isolated to the logistics department or logistics section. Functions such as warehousing, transporting, inventory, production, material handling and packaging were centralized and managed through that centralized body assigned for logistics. Thereby the decisions were taken by the centralized body and after-

wards conveyed to the other departments which adjusted their functions accordingly. But with the evaluation of integrated logistics the decision-making was viewed through a synergetic approach. It was found that rather than taking decisions independently, if there is an approach to take decisions independently and function collaboratively with the logistic department or section of the organization, it will be more effective and beneficial from the organizational point of view. Therefore, the integrated logistics concept was adopted by many organizations rapidly in which all the departments of the organization give an active participation and collaboration to the decision-making and management of the organization. At the same time, through this adoption of integration concept the organizations experienced many benefits such as



- **Reduced cost**

When the logistics functions are integrated all the departments will actively participate in decision-making. Therefore, rather than trying to reduce the cost as individual departments it will save the cost when all the departments get together to formulate strategies to reduce the cost

- **Higher flexibility in decisions**

When the decisions are taken collaboratively, all departments will make the decisions by considering the requirement and wants of each department. Therefore, the decisions will be taken in an utmost beneficial manner for all the functions of the department, and will bring many benefits.

- **Higher effectiveness in decisions**

When collective decisions are made the ideas and facts of all the departments are taken into consideration because integration will result in an active participation of all the departments which are integrated. So due to this, the best decisions can be collectively made based on the facts and ideas of all departments. Therefore, rather than making individual departmental decisions, it will be much effective because all departments benefit.

- **Easy to implement decisions**

When the decisions are taken collaboratively each department will have at least a simple idea on the logistics and the decision taken. Thereby at the implementation stage, it will be a great upliftment for the organization and also will give good outcomes after implementing the particular decisions due to the integrative approach.

- **Easy to inform (higher flow of information within the organization)**

When the logistics functions of the organizations are integrated it will result in a collaboration of all other departments with the logistics to perform logistics functions. Thereby with this collaboration each department will be linked with the logistics. Therefore, when a decision is taken regarding logistics, it will be much easier to inform the relevant department and the departmental employees regarding any matter regarding logistics.

- **Can set more reliable and accurate objectives**

When the logistics function of an organization is integrated it will result in higher effectiveness in decisions due to collaborative participation. Due to this collaborative participation the accuracy, reliability and effectiveness will be higher. Similarly when setting objectives for logistics functions also, it will create a higher accuracy and reliability due to the ideas and decisions of all other departments

- **Higher profit margin**

When collective/collaborative decisions are taken it will be influenced by all the departments of the organization. Thereby the logistics functions can be arranged in a way that strategies are formulated to have the highest profit margins because if the departments are isolated without integrating, the respective departments will only focus on departmental profit.

Challenges in Integrated Logistics Optimization

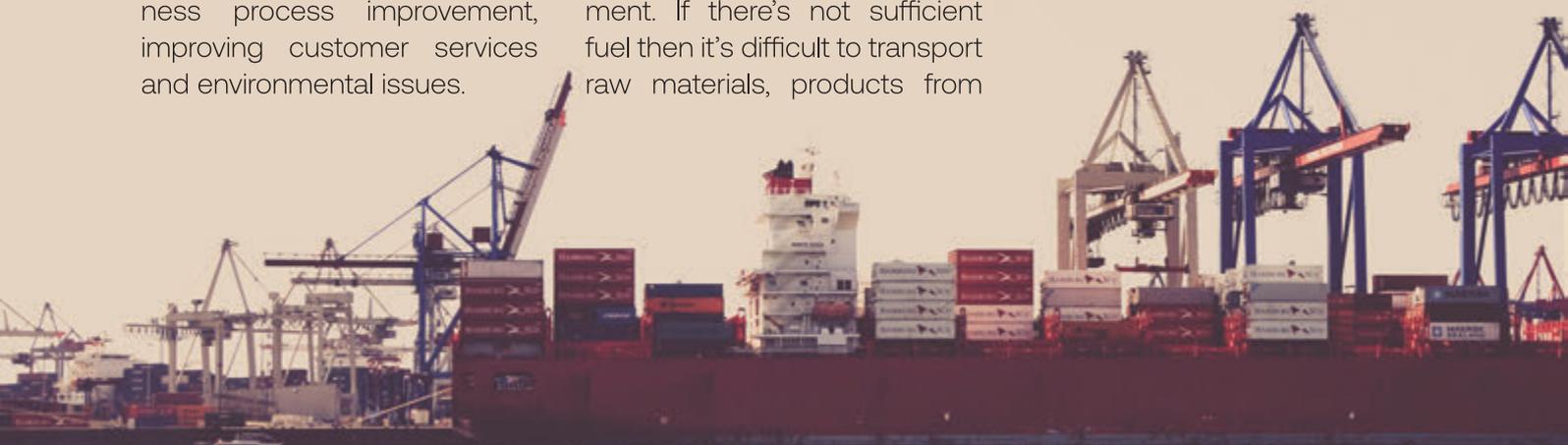
Let's face to the challenges in Integrated Logistics



Logistics Management is planning, Implementing and controlling the forward and reverse flow of goods and services efficiently and effectively between the point of origin and the point of consumption that fulfills customer requirements. Logistics Management is a part of SCM and procurement management, inventory management, warehouse management, transportation management are several parts of Logistics Management. By improving these areas, we can optimize Logistics Management efficiently and effectively. The goal of Logistics Management is to fulfill customer requirements. So, it's essential to have quality, efficiency (quickness) in those areas. There are many challenges in those areas. Some of them are cost, business process improvement, improving customer services and environmental issues.

If we talk about cost, in Logistics Management there are many types of costs, such as transportation cost, warehousing cost, distributing cost, etc. Fuel cost is the highest contributing cost in transportation cost. Not only Sri Lanka, but also some other countries import oil from Middle-East countries. So, these suppliers face the main problem in the economy that is, "Limited Resources for Unlimited Wants". This higher demand can increase the price of oil and subsequently the price of products. Then there may be a decrease in customer demand for that particular product, because the customer demand depends on affordability, quality, availability and durability. The availability of fuel (oil), is also a main concern in transportation as well as in Logistics Management. If there's not sufficient fuel then it's difficult to transport raw materials, products from

point of origin to point of destination. So, logisticians must identify these situations early and take decisions to solve those problems and also logisticians and navigators in the business arena should pay more attention to these situations and innovate new types of fuel for transportations like electricity, air(gas), etc and also they should pay more attention to the sustainability of using these fuel types. It should be less harmful to the environment and public health, because when using petrol and diesel, the emission of carbon(C) and carbon dioxide (CO₂) is very high. It is more harmful to the environment and public health. Remember, "what we achieve, it should be sustained".



If we talk about business process improvement, we must consider about the innovative technology. Providing the required IT systems and technological expertise can help to reduce expenses. As an example, we can introduce a machine for ten people's work. It is more efficient and effective. We can also apply Artificial Intelligence (AI) technology and robotics and digital transformation to improve the business process. So, logisticians and other navigators in this field should pay more attention by investing economically in these technological innovations and advances.

If we talk about improving customer services, customers need their delivery at the correct place in the correct time and manner. Nowadays there are many online ordering systems and delivering systems. This online method is a very efficient and effective way for the customers in the modern, competitive world.

Customers are willing to pay for fast shipping. So, they expect their order within 30 minutes or less. In Sri Lanka, there are some companies like Pick Me and Uber that supply transportation services as well as parcel and food delivering services more innovatively and competitively. The world famous Amazon company designed a method to safely get a parcel to the customer in 30 minutes or less, using drones generated by electricity. So, this is a very efficient and effective way of delivery. Not only these, but also there are other important advantages to the environment, where there is no harm to the environment, because drones use electricity not fuel like petrol or diesel. So, there is no emission of carbon (C), carbon dioxide (CO₂) to the environment. They achieve goals and it is also sustainable. So, these companies, vehicle manufacturers and navigators of the transportation field need to pay more attention to new vehicle

technology in vehicle automation and innovative track and trace systems. Nowadays some customer service companies get feedback about their services. It is a 5 point likert scale and from that, they can identify their weaknesses, improvements and areas needed to be improved. This is a kind of benchmarking tool as well as there is a worldwide benchmarking tool called Logistics Performance Index (LPI) which is calculated based on worldwide surveys conducted every two years by the World Bank to help countries to identify their performances and weaknesses in logistics and how to improve their performances. In Logistics Performance Index (LPI). Countries are scored on the 6 key dimensions of customs, infrastructure, international shipment, logistics competence, tracking and tracing and timelines.

LPI results of Sri Lanka 2007-2018

	2007	2010	2012	2014	2018
LPI score	2.40	2.29	2.75	2.70	2.60
LPI rank	92	137	81	89	94

Source: World Bank Website (www.lpi.worldbank.org.lk)

The table shows Sri Lanka LPI in every 2 years. It is not at a satisfactory level. So, logisticians and other navigators in the logistics field of Sri Lanka need to pay more attention to go up in this LPI. In order to achieve that as a country, we need to improve our logistics in those 6 key dimensions.

If we talk about environmental issues, the latest issue that has been a shot to the logistics industry is the CoronaVirus

outbreak. It is more damaging to the global economy than the SARS outbreak in 2003, that was spread into Asia, Europe and North America and has been reported with more than 3000 deaths in China due to Coronavirus. All of their airlines, tourism centers, some retail stores, factories are now completely suspended. Sri Lanka is a main trading partner of China. So, this outbreak has already been a massive hit to the Sri

Lankan economy. So, we need to carry out precautionary actions and reduce this situation. If not, some of our logistics parts can collapse due to this outbreak. Until this situation calms down, we must build our logistics and trading, by increasing our productivity. By carrying out these things, we can face those challenges successfully.

INTERVIEW

Mr. Rohan de Silva, Chairman - McLarens Group.

Interviewed by:

**Kavya Silva, Kisal Amarasinghe and
Natasha Jansen**

Written by:

Kavya Silva

Holding the title of Honorary Consul of the Republic of Namibia in Sri Lanka, with over 40 years of experience in the Maritime and Logistics industry, Mr. Rohan De Silva currently leads the McLarens Group as the Chairman since 1992. He is a member of both the Ceylon Association of Ships Agents Advisory Committee and the Advisory Council on Ports, Shipping and Maritime Affairs of the Ministry of Ports and Shipping. Mr. De Silva has contributed immensely to the industry through outstanding innovations and investments. He pioneered the commencement of a new ship supply service of the Southern coast of Sri Lanka, giving birth to a fresh industry in the field of shipping in the country. He also initiated offshore shipping services in the port of Hambantota

Q. McLarens is the single largest shipping agency group in Sri Lanka. As the Chairman of McLarens Group of Companies since 1992, what is your role and how was your journey thus far?

A. We are the largest shipping agency in Sri Lanka today, in terms of number of ship calls and containers we handle, and in terms of the variety of services we provide to ships. Those are the three areas of measurement we basically use at McLarens. The journey over the years has been tough, but I must say it has been very entertaining,

rewarding and pleasing for all the hard work that went into it by myself and the entire team. We indeed saw quite positive results on the long-term of this organization. However, when considering the short-term, there has been a lot of disappointments and difficulties, change of policies in the government, etc. Frequent changes of policies in the government have also affected the businesses, but overall, I must say the journey has been successful and pleasing.

Q. What drives us back as a nation in becoming a major logistics hub like Singapore?

A. First and foremost, I would say that incorrect government policies and restrictions by authorities, particularly in customs and government departments in terms of availability of finance at low costs compared to Singapore have held us back. But more than this, it is not what is happening in the current era. This is a long-term consequence. If you know in 1958, when the Sri Lankan government nationalized all petroleum companies, there were so many established petroleum companies in Sri Lanka, for example, Shell, X1mobile, Caltex, Tata Oil, etc. All these had companies established in Sri Lanka. In 1958, they were nationalized overnight and had no place to go, so they went and parked themselves in Singapore. Today all those companies are doing extremely well, and those businesses have become a huge asset in terms of providing logistics to Singapore. We nationalized and made one company, the Ceylon Petroleum Corporation and we have two companies today, with the Indian Oil Company, but our growth has not reached optimum levels. That's just one example, and there are so many examples like that which show how government policies affect us in the long-run. Such restrictions the government

brings in have effects on our growth. That is why we have not been able to grow and become like Singapore.

Q. Shipping, marine services and logistics remain the main industries your company engages in, but the group has recently ventured into and has established market presence in bunkering, manufacturing, oil and gas services, property development, lubricants trading, hotel and leisure service and food and beverages. What opportunities did your company see in investing in these industries that are new to the company? What are the challenges that McLarens faced and will be facing?

A. Bunkering for example, is aligned to Shipping Logistics Allied Services as they are services to ships, but manufacturing and other services are different. So as I said in the beginning, anything regarding the Maritime & Logistics Industry - we provide a variety of services. That's how we have grown within the maritime sector. With the uncertainty of policy changes with the government, we did not want to align ourselves too much with one industry, in this case, Maritime and Shipping. Hence we branched out and have grown and established a dominant presence in other areas such as Petroleum and Energy, Manufacturing and Distribution, Property and Strategic Investment and Leisure. In fact, during the

last five years while the previous government was in power, they tried on many occasions to give away the shipping business to foreigners on a platter without even attracting an investment. They were trying to give away the profits and resources remaining in the country to overseas companies. If such things happened, we would have been in a very difficult position, having relied on the Shipping Industry too much. This is why we thought that expanding into non-shipping related businesses was a smart move.

Q. How important is automation and robotics in Logistics Industry nowadays?

A. Very important. The country has not looked into those areas very seriously although they talk about it. Our company has already commenced automating our industries throughout in the last two years. Not only our company, other industries and manufacturers have also begun to automate their processes; For example Apollo. We go to their factories, we discuss with them and we assign them a particular line of manufacturers. We use our engineers, resources and studies to develop a proposal on how processes can be automated and how resources can be

saved in terms of costs, as well as improvement in production. With the goal of having a dedicated team and company to take on automation and robotics, we started McLaren's Industries Solutions Ltd. It comprises of engineers who have started innovating machines to improve lines of production in the apparel sector, locally and globally. We use that same knowledge in our shipping and logistics areas as well. We have not implemented robotics yet, but that is the way forward in our logistics centers.

Q. What kind of technologies, systems and procedures does McLaren's have in their supply chain and logistics operations?

A. All our processes are computer driven and we have many systems like ERP, SEP. We have many different software programs running in our systems. We are not 100% paperless but we are getting there soon.

Q. McLaren's provides integrated services to maritime and logistics industry and operates a state-of-the-art Integrated Logistics Facility that provides a lot of facilities with cutting-edge technology. Why does a company need to integrate their supply chain/ logistics services? What are the benefits that it can give your clients/customers?

A. Integrated services are provided to ensure we achieve our ultimate motive—that is to enhance our business. Our processes and services have ensured a job that would usually take two to three people is done in a more efficient manner. This is an advantage to our customers as well as it reduces the stages of transactions customers have to go through and cuts down their time in half. This "One Stop Shop" arrangement ensures there is only one cost identification and no sudden/ hidden costs. Even if there is, there will always be someone to claim it from.



Q. As a dynamic entrepreneur and an exceptional business practitioner, who has nearly forty years of experience, what advice can you give to young undergraduates and potential entrepreneurs in Sri Lanka?

A. My advice to young entrepreneurs in Sri Lanka is to try and convince the government sector policy makers not to bring in more regulations, but rather relax them and help entrepreneurs develop and grow in their businesses, which in turn develops the country. Even today, moving one package from one warehouse to another within port premises, the amount of documentation, approvals and processes that need to be undertaken are extremely time consuming and inefficient. The amount of red tape and bureaucracy that exists only brings about

delays. These are unnecessary as nothing is coming out of the port. However, these measures are important along with duties, levies and other documentation if goods are moving out of port.

Young and upcoming entrepreneurs need to get in and out and bring these things to light and push government policy makers to adapt and change with our dynamic world. They need to promote out-of-the-box thinking and encourage these same policy makers to let go of old systems and welcome change that promotes business development, rather than hindering it. There's so much of businesses that young people can do today. If you look at the number of ships around Sri Lanka at any given time, the number around Colombo Port is around forty, but if you take Singapore, at

any given time, it's about 1,200 or 1,300 ships. The ships don't come to Sri Lanka for services because there's so much red tape, delays and inefficiencies. With the rapid changes in technology, we are able to do so much with a few clicks of a button. I believe our country needs to adapt to these technological developments and be advocates of innovation and invention. I wish to propose to the government to make it a free port within the port premises. If anything needs to be brought from outside the port, they can be charged. Then these ships will come to Sri Lanka. It's costly to go to Singapore, Middle-East and other countries. So we are in the perfect location and situation, to attract much more than this. Rather than the 40 ships, we can easily bring in 500-600 ships.



RESOLVING PROBLEMS IN INTEGRATED LOGISTICS WITH THE UTILIZATION OF BIG DATA IN THE CORPORATE SETTING



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The term 'Integrated Logistics' inculcates the core idea of anticipating and forecasting customer needs and wants, and fulfilling them in an optimal manner. It utilizes a fully-fledged system of networks, in order to deliver a quality service to the final customer, in a timely manner. The successful implementation of Integrated Logistics in organizations has succeeded in amalgamating all the logistics related activities. This has been an astonishingly successful venture, in terms of customer satisfaction and also in increasing the bottom line of the organizations. In the current context, this is looked into in an even broader perspective which includes planning, controlling and supporting the core competencies of an organization. Meanwhile, the modern technological advancements have succeed-

ed in elevating the quality of this service-oriented process, in order to achieve operational excellence. Integrated Logistics was initially implemented in a more conservative manner, which was termed as 'Internal Integration', where only intra-organizational integration was utilized to uplift the logistics function. However, now it has been evolved to accommodate internal as well as external integration, with the emergence of novel concepts such as forward integration, backward integration and Just-In-Time, which require strong and healthy relationships with each link in the entire supply chain. Even though it is quite obvious that Integrated Logistics is a brilliant concept to reach pinnacles of success, there are in-built challenges which should be properly accounted for, in order to gain the optimal

outcomes of it. One of the key challenges faced by majority of logistics companies is the devastatingly high levels of fuel costs. In spite of the mode of delivery of the service, fuel costs have to be incurred unavoidably. Highly congested roads, distant alternatives to reach the destinations, unawareness of the drivers, unfit roads and poor driving conditions are few of the many reasons pointed out by professionals, as main causes for this. Fluctuating fuel costs are also affected by many other reasons including economic variabilities, political instabilities and the regulations of OPEC, causing the freight charges to vary accordingly as well.

Similar to all sectors, Integrated Logistics is also a victim of inflation, exchange rate fluctuations, government regulations and other macro-economic factors, which create an inherent flux in the growth rate of the entire field. The arena of logistics constantly encounters a gap in catering to the changing customer requirements. As pointed out by the Senior Operations Supervisor at DHL Express, two of their biggest concerns and commitments are to attract new customers to the organization as well as to continue business operations in good faith, with the existing customer base. Lack of supply chain visibility is another major encounter faced by Integrated Logistics operations. This could be a causative factor which leads to disruption of supplier as well as customer relationships with the company, due to lack of transparency with their business operations. Not only from the customer and supplier perspective, a company also faces many challenges in its core competency as well. Driver shortages, driver retention issues, driver fatigue, safety violations and high rates of accidents are some of the burning day-to-day concerns faced by them. Meanwhile, the arena of logistics is also monitored under tight environmental regulations, since the extensive amount of transportation involved has a greater potential to harm the environment in a massive scale. All these challenges should be overcome in an optimal manner in order to sustain in a competitive corporate environment. The latest development of adopting to

predictive analysis and Big Data technology has revolutionized the field of logistics and is being used strategically in order to overcome the challenges.

According to a recent study conducted by the Council of Supply Chain Management Professionals, it was revealed that 98% of the third-party logistics firms and 93% of shippers consider data-driven forecasting and decision-making as a crucial next step in logistics related activities, whereas 71% of them thoroughly believe the fact that Big Data improves the quality and reliability of operations. In 2013, DHL predicted that Big Data will enable the consolidation of conventionally segmented sector of logistics, resulting in flourishing opportunities to be unveiled to the field. This implies that a data intensive corporate setting helps logistics firms to gain a competitive advantage over their competitors. The annual report of KPMG (2017) indicated that many firms operating specifically in the field of logistics are moving into the development of utilizing Big Data solutions to reduce delivery delays and other operational mishaps. Giants in the logistics field consider Big Data analytics as a breakthrough to reach operational prospects including improving vehicle routing, optimal fuel purchasing, optimal fuel consumption, forecasting proactive maintenance of vehicles and reducing operating costs. As one of the most significant examples, UPS uses ORION (On-Road Integrated Optimization and Navigation)

for fleet telematics and to analyze advanced algorithms in order to transform route optimization, upgrading it to the next level. Latest technological developments such as 'Truckcam' and 'Drivercam', are outcomes of integration of Big Data analytics with Internet of Things. They contribute in increasing safety standards by monitoring driver fatigue and distraction. Big Data Pilot is also another application which focuses on generating proactive alerts and reducing harmful emissions of vehicles resulting in uplifting the customer service as a competitive differentiator. The latest press release of DHL (January 21, 2020) officially announced the launch of the unified platform of Transport Management System, 'EVO' in France, adhering to their initiative 'Strategy 2025'. Adding to this, Uwe Brinks, CEO DHL Freight, interpreted 'EVO' as the outcome of amalgamating Big Data analytics with digitalization, in order to increase automation and to reduce administrative work. It is also a strategically consolidated platform which can be accessed by anyone to obtain real-time information, which ensures transparency of business processes along the entire supply chain.

In conclusion, harmonizing Big Data analytics with logistics, assist in conquering operational excellence, thus creating a platform to deliver the best quality customer service.

ESSENTIALITY OF INTEGRATED LOGISTICS INFORMATION SYSTEM (ILIS) BASED ON CLOUD COMPUTING FOR 3RD PARTY LOGISTICS ORGANIZATIONS.



Logistics business consists of a large number of tasks until the customer has received the order. Following the order issued from the client, the distribution schedules for delivery and appointment destinations are planned by the logistic company. In long-haul traffic, for example, between Central Distribution Center (CDC) and Regional Distribution Center (RDC)s, load optimization is important since there is a significant reduction in the number of operating vehicles. Also, route optimization is necessary for regional delivery, because there are several RDC delivery points. The optimization of load is critical as there is a substantial reduction in the number of operating vehicles. Route optimization is required in the case of regional delivery because it has many distribution points from RDC. The freight charges between carriers and logistics enterprises should also be determined and the vehicle

route should also be tracked through the GPS (Global Positioning System). A road breakaway can be avoided by vehicle monitoring, and quick action can be taken against a sudden accident or vehicle break down. Analysis of completed delivery data is also important to forecast freight volumes and represent the delivery schedule. To record, analyze and present those data, a necessary platform based on Information Technology (IT) is highly essential.

IT simplifies business processes and lowers the sales cycle that changes the way a company works and contributes to a more competitive market. As a result, businesses would prefer to focus on core skills and outsource other procedures to experts. In this market niche, Third-Party Logistics Facilitators (3PL) provide logistical management services. 3PL companies are external facilitators who, on behalf of a shipper,

control, coordinate and conduct logistics activities. Two types of Third Party logistics providers are generally available: asset and non-asset-based. The logistic hub, storage, transport team and logistics services management systems are owned by asset-based 3PL facilitators. Most 3PLs offer their distribution services to clients by delegating certain operations to other supply chain entities. The key communications channels are currently available through printed papers, telephone and email to these 3PL facilitators. The drawbacks of these networks entail delays, human errors, high operating costs and environment pollution. To reduce issues, enhancing an organization's internal and external communication by using IT will be highly beneficial. The use of IT services inevitably increases the efficiency of the company.

The Integrated Logistics Information System (ILIS) can be designed for local 3PL service providers with advanced IT in order to suit above drawbacks. ILIS replaces traditional methods of data transmission and promotes automated procedures, which reduce operating costs. ILIS also increases contact efficiency. At the same time, to ensure efficient and reliable logistics information sharing and inter-party communication across the supply chain, a shared web-based interface for different supply chain partners is developed. With the introduction in the early 2000s, the ILIS led to the reduction of logistics costs and to an increase in the logistics industry. But the major components of the system depend on expensive logistics solutions. The logistics company therefore needs the Integrated Logistics Information System (ILIS). However, the majority of 3PL companies are small to medium-sized, so the IT system in terms of cost is difficult to implement.

The ILIS stakeholders are vendors, logistics companies, warehouse managers and vehicle drivers who are listed in terms of the program. The program has main functions: order manage-

ment, master data management, warehouse management, transport management, freight management, analytical reporting, vehicle monitoring, system management and mobile business management. The core functions are: distribution schedule, dispatch, transport load optimization between CDCs and RDCs, and delivery to customers' optimization. In the logistics sector, ILIS is necessary since real-time data processing is important between stakeholders. With the purpose of incorporating the load optimization solution into a single system with the path of optimization solution; an ILIS in cloud computing environment would be highly essential. Cloud computing is the concept to allow universal, functional and on-demand networks to connect to a shared pool of computing resources, which may be delivered easily with minimum management effort or intervention by the service provider (e.g. Networks, servers, storages, applications and services). Cloud Computing's key characteristics include self-service on request, broad network access, fast elasticity, pooling of resources and measured service. Cloud Computing is categorized according to the deployment goal by public cloud, private cloud, hybrid cloud and group cloud

ILIS based on Cloud Computing aims to maximize the usage of resources required for logistics management (vehicles, human resources, oil, etc.). The system targets small and medium-sized 3PL companies with a remote service environment such as Software as a Service (SaaS), which are difficult to set up an IT system. It is an application for the logistics system for data collection, processing and handling for a 3PL business. It is a common platform where consumers, service providers and business partners exchange logistics knowledge along the supply chain. This subsystem underpins the upper levels of the model, automates logistics processes, promotes policy processes from strategic to operational levels and encourages transactions between businesses. An effective ILIS helps third-party logistics to capture, store and process data in the right time for the right people. In the procurement of logistics facilities, ILIS is basically a primary facilitator.



INTERVIEW

Mr. Thushan Mahagedara,
Director Business Development
OVIKLO International (Pvt) Ltd.

Interviewed by:

**Dishanthi Kahaduwa, Joshua Kitchel
and Anuki Fernandez**

Written by:

Dishanthi Kahaduwa

Thushan Mahagedara started his logistics career in 1994 and from there onwards his knowledge enhanced from basic to top-level in Warehousing and Transportation. During his career of more than two decades, he gained knowledge by working in several departments related to Transportation, Supply Chain, Freight Forwarding and Customs Clearance. In 2008, he engaged with United Nations Logistics operations in Sri Lanka and gained international supply chain knowledge and experience. With the experience in industry, he setup OVIKLO brand in 2011 with the association of few industry experts as a Sri Lankan brand. At present, OVIKLO operates seven logistics hubs with more than 200 clients based in all industry verticals. OVIKLO is an ISO 9001:2015 certified organization for Warehousing and inventory Management. OVIKLO won Logistics and Transport Sector National Business Awards in 2019 and SLIM SME brand of the year in 2017.

Q. What is the role of OVIKLO and how does your company provide integrated customized logistics solutions to the large client base it already has in fields such as Telecommunication, FMCG, automobile and manufacturing?

A. OVIKLO customer base varies from small-scale to medium-scale companies. By charging a very low price, we always encourage small scale organizations to coordinate their logistics activities smoothly. We believe there are more opportunities for medium and larger scale organizations rather than for small scale ones. Hence, OVIKLO focuses on a win-win situation where we can reduce the cost of logistics of small-scale organizations and let them gain more profit while expanding the volume of our organization itself.



To gain cost effectiveness, OVIKLO facilitates common facilities within the warehouse premises. For example, we manage to operate 150,000 Sq.ft with a minimum number of material handling equipment, minimum staff and workers and centralized administration cost like security, etc. All these costs will be shared among all customers. These strategies help us to minimize our clients' logistics cost.

OVIKLO encourages to follow special customer-based KPI to give a better service to the customers rather than just facilitating inventory accuracy. We believe above strategies will help to retain a large customer base in our organization.

Q. Supply Chain transparency is an emerging topic in the Logistics and Supply Chain industry. What is your opinion on it?

A. Supply chain transparency is highly essential for organizational growth and it also helps to connect with customers by gaining their trust and achieving better service. Visibility of the client to the consumer, manufacturer to retailer/wholesaler to the end-consumer is important for organizational growth. Adaptation of latest technology will increase visibility of many logistics activities such as transportation, warehouse, shipping

and freight forwarding. Also, visibility helps to identify if there is any issue in the current procedure and it will help to drive for integrated solutions.

Q. Companies are more into technology, systems, models and new techniques that make all the supply chain operations more effective and efficient. What are the new technological applications used by OVIKLO in their supply chain?

A. Most logistics service providers followed manual procedure during the past two decades. We identified a lack of accuracy in the telecommunication industry. So OVIKLO built an online web-based inventory application in 2011 for the first time in the history of telecommunication logistics. Now, we have advanced our Inventory Management System for all industry verticals such as FMCG, Automobile, Pharmaceutical, Manufacture and Construction. It's a user-friendly surface where clients can track their cargo anytime and monitor their deliveries. This increases the supply chain transparency of OVIKLO logistics activities.

OVIKLO uses latest material handling equipment especially for handling chemicals. Hence, all government chemical-related institutions have approved our warehouses for storing chemicals. Other than that, OVIKLO uses

many technical aspects such as cloud-based online solution, barcoding system and automating value-adding process.

Q. What are the challenges OVIKLO faces as a company handling a huge client base and how does your company overcome these challenges with the help of integrated supply chain management?

A. Since multi-national and large-scale companies have good financial strength, they always invest in research and development, planning, analyzing, gathering and market research. Matching service levels with those kinds of companies has become a huge challenge for OVIKLO.

Always large-scale companies block the opportunity of market entrance, and it makes it more difficult to create a brand image for small and medium-scale organizations. Because of that, most new entrants have to put a lot of effort to enter the supply chain business.

When it comes to the transportation sector, road traffic and truck idling time has become a major challenge. It increases the cost of every logistics activity due to high fuel cost and inefficient truck turnaround time.

Even though we are located in the best geographically location for logistics business, government and other related authorities need to encourage logistics related business. But unfortunately, we are not getting this assistance. Logistics is increasing its impact on every business, as it creates value for companies and assists in delivering improved profits. The application of logistics varies across continents. Modern logistics is generally a new concept in Asia, with the focus on the basic transport processes of road, rail, air and sea. These processes in some areas have been integrated into what is known as multimodal transport. These solutions always help control cost and delivering profits as well as create large number of employee opportunities.

Q. How do you think that the environment and sustainability concerns must be addressed in a company's supply chain? How does OVIKLO contribute to reduce negative impacts on these aspects in a supply chain?

A. As an ISO 9001:2015 certified company, OVIKLO always promotes best practices. We believe maintaining operation excellence with more productivity, cost-effective services, customer satisfaction, employee education and motivation to improve sustainability of the

organization. We use industrial GAS material handling equipment and those will help us to maintain low carbon monoxide emissions inside the warehouse. Our warehouse infrastructure setup helps us to manage the lights for daytime and for night we used LED lighting system to run the operation under power usage. We always use vertical storage solutions, racking systems and stackable pallet systems to bring down cost of land and environmental impact.

Q. There is a trend of supply chain solutions being moved to the supply chain cloud rather than relying on the on-premise supply chain software. OVIKLO has also adapted cloud-based online solutions to deliver high performance to the requirements of their clients. What impact can these changes bring to a company's supply chain?

A. Time is the most critical component in any industry. By using cloud-based technology, OVIKLO will be able to provide accurate, real-time information to the client. As an example, once the shipment has arrived at any of our 07 warehouses, the cloud will be updated with a shorter period of time. So the client will be able to make orders. Ultimately, this efficiency in the supply chain will reduce the inventory cost. Cloud-based technology keeps an eye on product movement from

supplier to the consumer. We believe that cloud-based solutions may create a platform where customers can be satisfied with effective supply chain services.

Q COVID-19 created a huge impact on the global economy including supply chains. How can integrated supply chain management reduce the impact of these global and regional outbreaks?

A. Any kind of disaster can have great impact on the global supply chain. Establishing emergency logistics for any disaster would be highly essential to mitigate the risk. Unfortunately, failing to plan for an emergency would generate negative impact on any business. For raw material supply, human resource, production process, and transportation of goods and many activities, there needs to be a proper emergency plan. Every organization has allocated some percentage of resources for the emergency plan. An appropriate level of buffer stock should be kept to reduce the risk of any disaster. There are many challenges in all industries, delivery failures, expiry, shipping delays, supply and demand gap and most wholesale and retailer markets are closed. Manufactures and farmers are then unable to send their products to the relevant market.

Looking forward to positive aspects, there are plenty of new business opportunities as well as cost reduction concepts developed with COVID-19. Online meetings reduced business traveling cost and saved time. Spending more time with family members creates work-life balance and helped mitigate stress and people focused more on online platforms. It automatically reduced environment pollutions and carbon footprints. Most important positive impact was that manufacturer makes goods and sells them directly to the consumer without and intermediary, such as a wholesaler, agent or retailer. It will reduce logistics cost and the consumer can get fresh

goods within a shorter transit time. Specially in the food industry, transit damages and waste significantly come down.

With COVID-19 there are plenty of innovative online applications developing focusing on current and future trends needed for all industries. This potential will definitely change the future of the entire supply chain industry.

Q. Before winding up the interview, what kind of advice can you give to budding entrepreneurs and undergraduates who are about to enter into the business world?

A. A thousand mile journey starts from a single step, the

problem is that people are scared about this single step. I suggest always be brave to enter where you like, spend time researching to find areas you need to focus, on areas that lack and what opportunities are there. Keep an experienced mentor who can guide and monitor you. Always connect with industry, and network with people to share and gain knowledge. Understand all failures as a part of success, stop comparing yourself with others. Last but not least, build self-confidence until you achieve your dream.

REAL TIME



COMMUNICATION AND DATA ANALYSIS IN INTEGRATED LOGISTICS

In logistics, real-time communication and data analysis has become a major challenge faced by people around the world. Basically it's very important to communicate properly about the product information or data in real-time. When data is on time, planners and managers can adjust their order accordingly. When order fluctuates, at that moment the order can be pulled to the right quantity, to the right container and it will be better than having a high-cost to have in real-time. Huge cost will be incurred by the planners and managers if real-time communication is lack in action.

Imagine a scenario where a production company ABC will have a demand on 'a' number of parts that should be in the container to be in the yard. But after sometime the demand has changed to fewer parts than before in the container, because of the lack of real-time communication,

More time and labor resource would be needed to make the above adjustment. In case if it is a fully integrated supply-chain where planners and managers can communicate well in the real-time, they can adapt to the order fluctuation at the moment that it happens. Thereby planners will immediately pull the right quantity of the parts to the correct container. When considering the above scenario, we can see that real-time data communication and analysis is a major problem faced in the logistics field. There are some specific benefits of real-time information that we can look at.

As we touch technology in this world, we can have solutions to real-time communication with technological advancement. Today's automotive systems will have a quick look at this concepts without struggling. Logistics is a global concern where rules

or restraints on demand planning, production planning, freight and transportation management and customer relations can change quickly without making much effort. Moreover with technology and concepts like Big Data, cloud-computing and automatized systems, we can have smooth supply chain activities with efficient workflow. These modifications will have a great impact on optimization of real-time communication and data analysis in the logistics field.

In this fast moving world, ability to communicate faster is one of the intrinsic benefits. As through the internet people communicate rapidly across greater distance than before. This internet system has accelerated communication in every single industry. As we all know communication is a key requirement for production and planning which will help to have flexible and effective logistics throughout the world.

There are some main problems faced by companies in integrated logistics communication,

1. Lack of transparency.
2. Problems in real-time communication.
3. Shifting from market to network-based communication.

To overcome above point number 2, it's really important to increase real-time communication and data analysis, as they have become a cascade of problem across logistics companies, lowering efficiency and increasing costs.

However to overcome this situation there should be timely communication and team collaboration between supplier and customers need to be monitored, so that the customers demand will always meet the supply. Day-to-day update and instant messaging for business and mobile solutions have become the easiest way to overcome this major problem. Also, automatic logistics system and real-time cargo handling and tracking will always be the cheapest way to have a real-time communication and data analysis.

Conversely real-time communication will help to make decisions in the supply chain and also it will really help to make future decisions as well. As logistics has become globalized, technological innovators

have essentially made the logistics world a smaller place.

From cloud-based management systems to smart sensors, the real-time supply chain provides a constant update of real-time data. This has provided a greater visibility, agility and decision-making via artificial intelligence and machine applications and data analysis and predictive analysis tools. Securing the integrated logistic system and digitalizing the system will increase the accuracy to overcome the challenges of real-time communication in integrated logistics.

Furthermore cloud-based solutions have become an effective system to overcome this challenge with the local network. Previously organizations had to have employee systems to handle data storage networks. By this cloud-based supply solution, storage is dispersed across all users, costs across locations and creates redundancies that can prevent costly down time and data loss. Moreover autonomous warehouses will help to get rid of this challenge. Thanks to internet and predictive analytics, robotics in the industrial processing will help to have Big Data in warehouse functions and in decision-making. Artificial intelligence powered demand forecasting will have great impact on overcoming this situation. While estimating demand has always become a worse scenario in

supply chain management, and in companies, it has always ended up with overstocking and understocking items with a high cost. Thereby demand forecasting will help to cut cost with machine learning and real-time analysis. With the internet, organizations are turning into machine learning to help adapt and update in real-time, without messing out on demand.

Therefore, with the help of technology and automatized systems the above real-time communication and data analysis challenges can be solved.

THE CHALLENGES OF INTEGRATED LOGISTICS OPTIMIZATION IN PETROLEUM INDUSTRY



The petroleum industry is one of the foremost and significant sectors of the economy today that engages in production, processing, transportation, storage and natural mineral resources such as crude oil and natural gas. As the global population grows, our energy demand grows as well. Thus, it is no wonder that the 21st century is named as the age of oil, because crude oil and its refined products have been essential to all aspects of modern society. There are three main steps namely, upstream, midstream and downstream that act as roots which provide life to this industry, while logistics act as the backbone of the oil and gas industry.

Before getting into any further discussion it's important to clarify what's integrated logistics optimization. Logistics derives the supply chain activities by planning, implementing, and controlling the efficient forward and reverse flow and storage of goods, services and related information between the point of origin and point of consumption in order to meet customer requirement. Integrated logistics management is a new phenomenon in today's supply chain system and it's a process of planning, coordinating and arranging operational activities so as to optimize productivity and ensure success.

The upstream is the sector that deals with oil and gas exploration, drilling, development and production. There are several challenges in the upstream sector that affects the integration of logistic optimization. They are geographic location, transportation, people shortage, management and information, operational challenges, and economic uncertainties. Geographical location challenges occur due to the upstream companies having limited capabilities close to places where easy oil can be found, for instance, in Middle - East, West Africa, Brazil, etc. Also the remote geographic locations and complexity of upstream operations in deep water locations has led to great distances for supply chain partners.

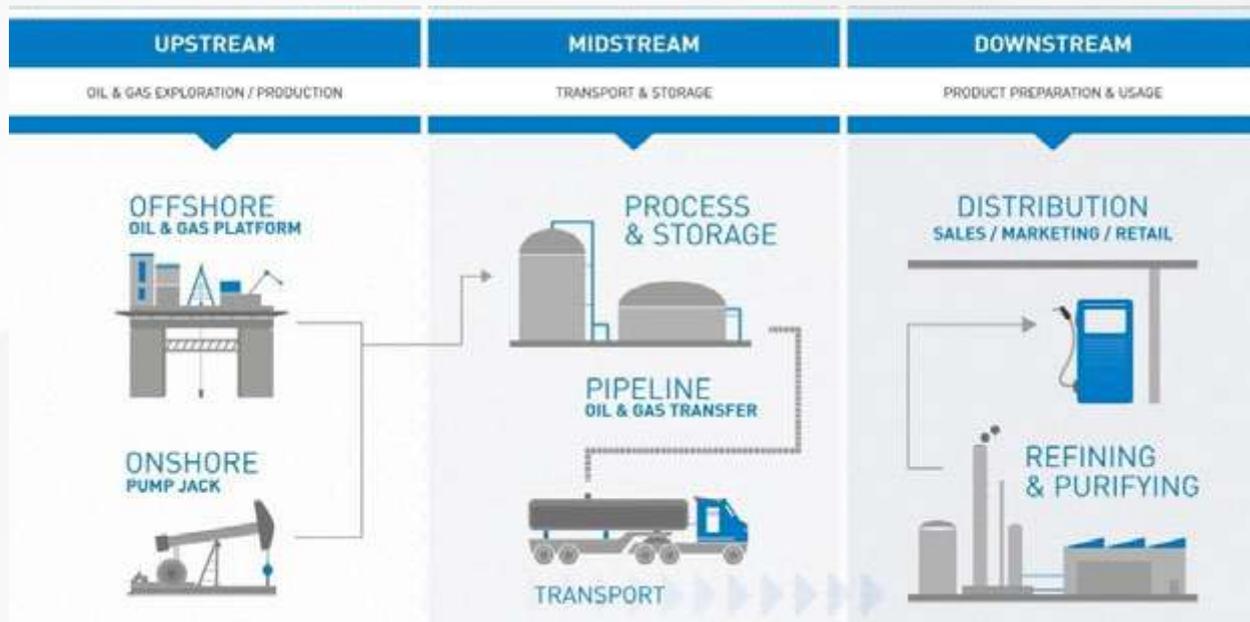


Figure 1 sectors of oil and gas industry
(Source: www.aavos.eu)

This in turn has resulted in large in-transit inventories and inventory carrying costs as companies need to keep a greater amount of safety stock at the final location. Further variability of transportation times creates uncertainty in terms of providing a desired level of service and in the worst case may lead to shutdown of operations. Apart from that, people shortage or the lack of skilled personnel or manpower requiring high tech processes in the oil and gas industry is a challenge in the most parts of the world.

However, for optimization through overcoming these challenges, upstream sector companies can use different concepts. For instance, lean and agile management, collaboration, theory of constraints and Just In Time (JIT). As a solution for people shortage, organizations can select the most appropriate person through a pool of qualified candidates and can

encourage more talented younger generations into science and engineering and hence to the oil and gas industry. Optimization provides the greatest opportunity to improve cost efficiency. Thus, upstream companies can use modern technological systems to find where the oil is located. To overcome operational challenges, upstream companies can implement and develop new strategies which are cost effective.

Midstream in the oil and gas industry is about activities of processing, storing and transporting oil and natural gas and refining the extracted oil to crude oil. Lack of infrastructure facilities, inventory management problems, technological underdevelopment, organization strategies and government instability are most common barriers to integrate logistics optimizations in midstream sector.

For instance, rising cost per mile of the midstream sector leads to draw back in the entire process. If there is a rising cost within the company that means it is not utilizing the resources efficiently and effectively. Not only that forecasting errors and missed estimates will directly impact on profits because cost overruns into project profits, causing investments to turn from promising generators of return to cost and this may burdens. Challenges in transportation, lack of technological equipment, challenge of providing adequate facilities, inefficient facilities at ports and warehouses affect logistics optimization as well.

In midstream sector, the main purpose is the transport of crude oil and refined products via pipes and storage of excess.

Hence, there should be sufficient facilities provided by the government to improve the efficiency of the process. Proper handling, transportation and storage of such equipment are mandatory and logistics are used to achieve it. Trucks, railcars and ships are used which is again the utilization of logistics. As a solution for inventory management, oil and gas companies need visibility into their customer, project, supplier and business process to ensure complete tracking and monitoring of the movement of goods. This can be accomplished through Transport Management System (TMS) technology. By increasing visibility into complex operations to control costs and optimize the performance of employees, facilities and assets, oil and gas companies can achieve several benefits such as shortened inbound supply lead time, shortened order cycle time, reduced purchasing and order expediting costs, etc. Working with an oil and gas expert can help optimize the speed and compliance of a company's supply chain process because government regulations are constantly changing due to government policies all over the world.

Downstream consists of distributing, storing, advertising and selling of oil and gas to its final customers. Pipeline, trucks, and purification equipment are utilized for this purpose which promotes the importance of oil and gas industry.

Poor network planning and marketing strategies, price fluctuation, lack of technological knowledge, non-prioritized communication and less quality products and services are some challenges to achieve logistics optimization.

There should be a strong relationship between suppliers and the downstream companies like 'Laugfs Gas' to maintain efficient service. For that procurement, logistics and operation sectors should be integrated with each other in order to gain total value optimization.

To overcome the challenges of poor network and marketing strategies, companies can use the STP Analysis as well as SWOT analysis. By doing so, they can face sudden price fluctuations in the industry.

To conclude, in order to optimize logistics sector of the oil and gas industry, it's important to analyze these challenges and take necessary solutions, because without providing solutions to these problems, it's hard to integrate logistics optimized for different sectors in the Petroleum industry. Therefore, to achieve better logistic optimization, a profound consideration should be given to the logistics industry in order to cope with the dynamic demands and revolution in the near future.

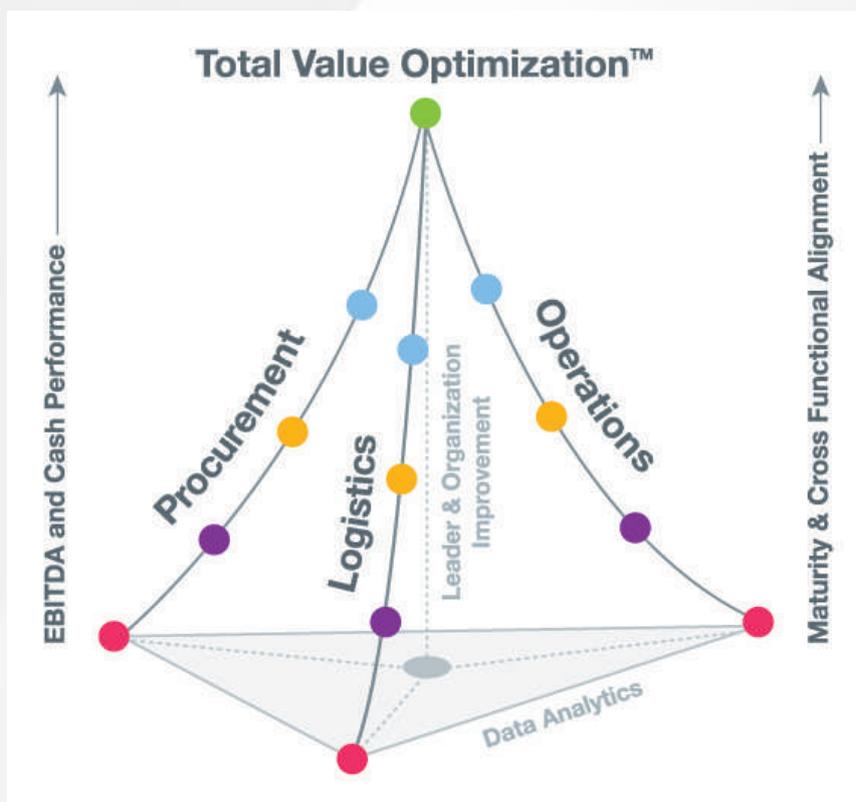


Figure 2: Total value optimization (Source: www.mainepointe.com)

“BEHIND EVERY
GREAT LEADER
THERE WAS
AN EVEN
GREATER
LOGISTICIAN.”

- M. Cox



RESPONSE TIME AND MINIMIZATION OF COST IN INBOUND AND OUTBOUND LOGISTICS ACTIVITIES



**Yasith
Ranasinghe**

Undergraduate
Intake 35
B.Sc. in Logistics
Management

Logistics is one of the salient activities in supply chain management. It deals with procurement, distribution, maintenance and replacement of material, inventory and warehouse management, demand forecasting, etc. In the modern world, logistics has to be developed in line with new trends in all its related areas. The changes in material handling and transportation technologies, developments in distribution channels, increasing demand of customer service requirements, competitive pressure of industry competitors, new requirements in performing financial services, etc. should be taken into consideration when arranging logistic services.

Time and cost are the most important factors that a company faces when conducting its business. This is because customers expect quality goods at the lowest price and timeliness in receiving goods. In fact, if the companies consider only the price, place, promotion and product strategies to increase profits and market share, that may not be sufficient. In the present time, the focus has been changed to non-value added strategies as well (e.g. responding to orders quickly, after sales services, quality of materials and the services, etc.)

(etc.)

MA CGM

GEseaco

To become a successful logistics company, it is not sufficient to only provide products at a reasonable price, but also in the modern world it is necessary to focus on customer value addition activities (e.g. responding rapidly to customer orders). The logistics companies aim is to extend the upstream to suppliers as well as downstream to the final customer to gain the highest profits with lowest cost. Companies can introduce Six Sigma approach to achieve their aims. In Six Sigma approach, the focus is on eliminating defects through introducing new processes and developing existing processes. After developing the Six Sigma approach a company can eliminate waste, excessive inventory to decrease lead time and increase velocity by focusing on the total cost rather than cost in a single unit. Using customer feedback and statistical processes are necessary to remove all the negative effects to ensure the accuracy and reliability of this approach. Minimizing the cost gives the company an opportunity to offer better value for the customer. The aim of cost minimization can be achieved through;

- Minimizing errors – maintaining data in electronic form to reduce the paperwork, and the staff cost. These measures will help companies handle imports/exports documents to complete them timely and to get orders on time. It will help to reduce the companies' cost.

- Leading logistics companies usually outsource certain tasks to other logistics service providers in order to minimize the cost and the risk. Another

reason is to maintain the quality of the services.

- Increasing the capacity of trucks will help to decrease the delivery cost from the origin to destination.

- Recruiting educated decision-makers will also help to make correct decisions enabling efficient handling of the tasks and to drive the company professionally.

Delivering the finished goods to the right place on time or receiving raw materials to the right place at the right time is a must to keep the sustainability of the company. If customers are dissatisfied, it will ruin the reputation of the company. So time is a main factor in every successful organization to compete in the market than its rival companies.

In certain time periods 4Ps has been considered to make competitive advantage. But nowadays it has changed to 4Rs (Reliability, Responsiveness, Resilience, Relationship).

Reliability - Fast and accurate information increases the reliability of transportation activities (e.g. RFID tags and barcoding). RFID tags and barcoding can identify items quickly; a special feature of RFID is it can identify items without touching, so it is a very fast technology. Reducing the time of identifying goods quickly will help to ensure the right goods to be delivered and to reduce the time waste for order processing.

Responsiveness - It is a must to respond to customer orders quickly within the shortest time duration. If not, customers will

be dissatisfied and will ignore buying items from the company. An example for companies which transport smaller quantities directly to point of use is Amazon which has started drone delivery service in selected cities in late 2019, to deliver individual packages within 30 minutes.

Resilience - Managing the risk is another reason that affects transportation. For instance, China is the major supplier of the most well-known companies worldwide (e.g. Apple has 800 suppliers based in China). As a result of COVID-19 spread, most countries banned importing goods from China. It affects the process of goods manufacturing. To mitigate this kind of risk, these companies can keep more than two suppliers and that will be an insurance for the company when things go wrong.

Relationship - Another aspect is the strong relationship between supplier and customer. If there is a good relationship between them, it will positively affect the quality of goods, reduction of cost and time of response. So a good relationship is important rather than attracting someone.

Procurement and distribution activities have been made to reduce the cost and the response time also depends on the relationship between the customer and supplier. Demand management is another activity to respond to customer orders quickly and to procure and order items in the right quantity within the right time. So efficient demand forecasting is an important factor in logistics and supply chain management. Efficiency of operations, improved deci-

sion-making and transparency of the information will help the company to manage the cost and time efficiently.

LINKAGE IN LOGISTICS AND SUPPLY CHAIN



“

BE ON THE CUTTING EDGE
OF SUPPLY CHAIN
AUTOMATION.
RESEARCH ARTIFICIAL
INTELLIGENCE, MACHINE
LEARNING AND DEEP
LEARNING.

”



Memories



Logistics Day 2019

The 5th consecutive Logistics Day of General Sir John Kotelawala Defence University, organized by the Department of Management and Finance of the Faculty of Management, Social Sciences and Humanities was held on the 5th of April 2019 at the university premises. The theme of the Logistics Day was "Logistics and Operations in International Trade: The Way Forward". The chief guest and the keynote speaker of the occasion was Mr. Thilan Wijesinghe, Chairman and Acting CEO of National Agency for Public Private Partnership, Ministry of Finance and Media. Mr. Kamal Geeganage, Associate Director- Integrated Supply Chain of Fonterra Brands Lanka graced the event as the guest speaker. The highlight of the event was the launching of the 4th edition of the Logistics Times Magazine.



Management Premier League (MPL)

The Freshers' Day of the Faculty of Management, Social Sciences and Humanities (FMSH) was organized to welcome the new undergraduates of FMSH to the university by holding a cricket match; organized by the students of intake 35 as Management Premier League (MPL). The event was held on the 7th of April 2019 at the University grounds. A vast number of graduates and undergraduates from various intakes of the faculty were present and actively took part in the event. The team "Rising Stars" of Logistics Management- Intake 35 claimed the championship of the tournament.



Stage Drama – Mahadanamuththa Oba Amathai

Technical Sciences and Management society of the Department of Management and Finance organized a stage drama titled, 'Mahadanamuththa Oba Amathai' a classic drama mixed with a modernized choreography for the purpose of raising funds for KDU Open Day 2019. This was held successfully on the 23rd and 24th of September of 2019 at the KDU Main Auditorium and KDU Hospital Auditorium.



Field Visits

Intake 35 students of the Logistics Management who are specializing in Supply Chain Management got the opportunity to visit Sri Lanka Ports Authority, while the students who are specializing in Transportation Management visited the Bandaranaike International Airport, Katunayake in the month of March 2019. Through these visits, the students were able to enhance their knowledge on how terminal operations were conducted.



Open Day 2019

KDU Open Day 2019 was held for the 6th consecutive year on the 5th of October 2019 at the university premises, under the theme, "Come with a Plan, Leave with a Dream". The event was inaugurated by the former Vice Chancellor, Air Vice Marshal Sagara Kotakadeniya. The main purpose of the Open Day was to give a conceptual idea about the degree programmes for students who wish to begin their higher studies at KDU. The students of FMSH prepared a supply chain model to explain the operations of the industry and distributed leaflets with detailed information to the guests. The visitors were assisted with further information about the degree programmes as per their requirement.



Educational tours

The Intake 35 undergraduates of the Department of Management and Finance, following the degrees of Logistics Management and Management and Technical Sciences got the opportunity to visit the Royal Ceramics Lanka PLC – Rocell, Insee Cement Factory Puttalam and Lak Vijaya Coal Power Plant in Norochcholei in the month of August 2019. The purpose of these educational tours was to provide practical experience for the undergraduates.



KDU Young Entrepreneurs Exhibition 2019

This event was organized by the FMSH on the 5th of April 2019 at the university premises by the second year undergraduates who followed the course unit, Entrepreneurial Development. The KDU Young Entrepreneurs Exhibition was a significant event of the faculty where the undergraduates came out with various innovative business ideas and presented them to judges. A team from Logistics Management won the best business idea award at the awarding ceremony.



Disaster Management Exhibition

Disaster Management Exhibition was held on the 5th of October 2019 by Intake 36 with the combination of the undergraduates from both Logistics Management and Management and Technical Sciences degree programmes. The event was organized as a partial requirement for the completion of the course unit, Disaster Management parallel to the Open Day 2019.



Personal Grooming

A personal grooming session organized by WCIC/ZONTA in collaboration with WiLAT and FMSH was conducted by Mrs. Nayana Karunaratna, Image Consultant and renowned hairdresser for undergraduates of Intakes 35 and 36 on 30th of January 2020 at the KDU Main Auditorium. The objective of this session was to groom students in order to progress well in their prospective career and in the corporate world.

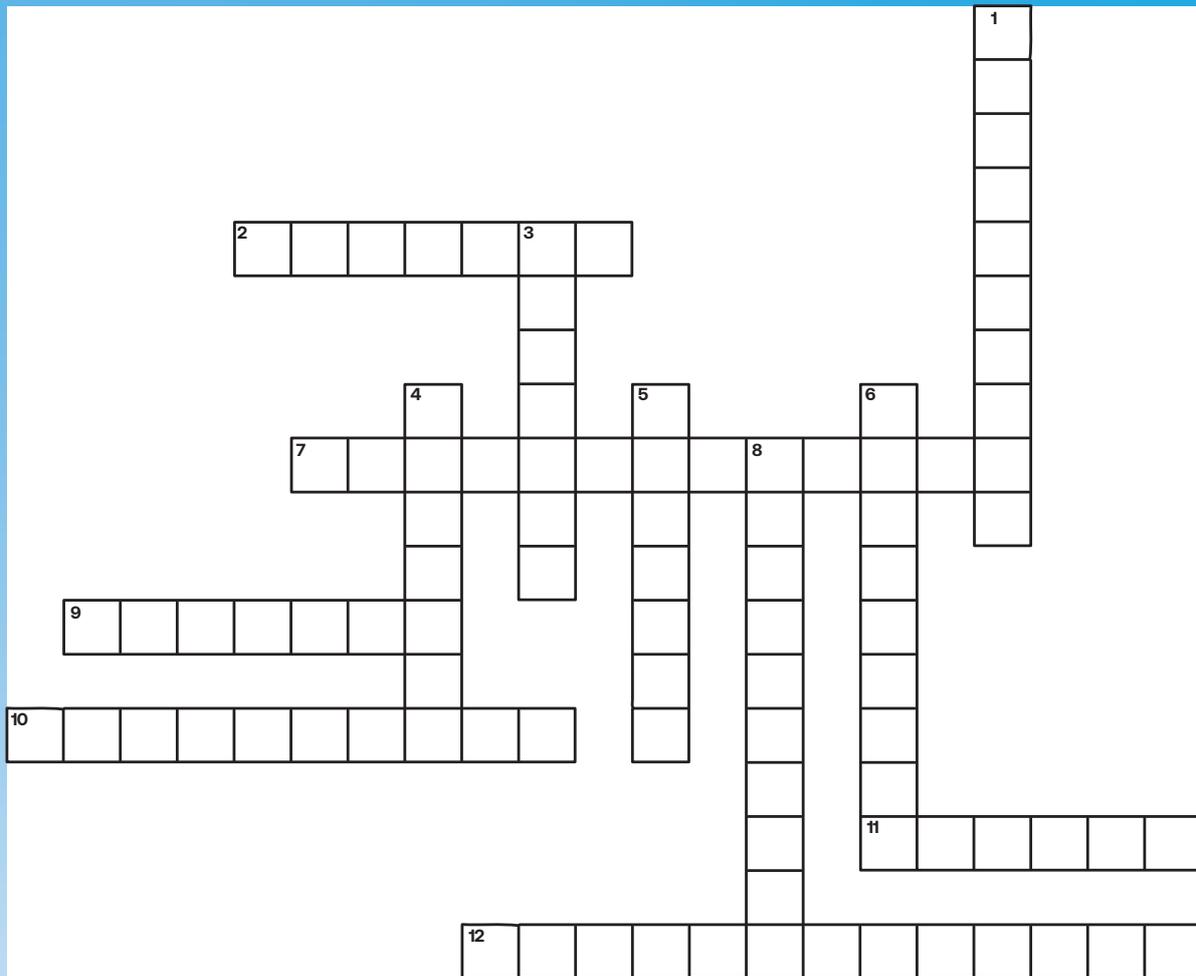


Other Students Activities

Apart from the events organized by the Technical Science and Management Society, the undergraduates of the faculty also represented and emerged victorious in various international and national events. K. Madhuka Dulanjana is a Day Scholar who is currently following B.Sc. in Logistics Management in Intake 35. As a department we are proud to announce that he represented the Sri Lankan Badminton team in the 13th South Asian Games 2019 which was held from the 1st to the 10th of December 2019 in Pokhara, Nepal and won a silver medal against Nepal.

Mr. Sachira Senadeera, Mr. Lahiru Maduranga and Mr. Namal Pathirage, undergraduates of Intake 35 following B.Sc. in Management and Technical Sciences degree programme presented their research project, 'Factors Affecting on the Labour Crisis in Tea Plantations in Sri Lanka' to Hon. Dr. Ramesh Pathirana, Minister of Plantation Industries last year.

PUZZLE



Across

2. Document used by carrier, especially during transit
7. A major challenge in achieving logistics integration, because of the presence of many production facilities and hubs in the supply stream spanned out across the globe.
9. A place where ports remain operational but with an 'isolate and operate' strategy due to the effects of Covid-19.
10. A performance measurement tool
11. Power the reefer container when normal shore power is not available
12. One of the three indicators used by technicians to measure the results obtained by adapting to an integrated logistics system.

Down

1. Moving shipments through regular channel at an accelerated rate
3. The communication, sharing of information and the interaction of people needed for planning and decision-making, in order to optimize in integrated logistics.
4. A company integrating freight procurement into its business to business e-commerce platform
5. A port that resumed vessel operations at its container terminals after only a 23-hour shutdown as a result of the pandemic outbreak
6. Exact copy of data set
8. The limitation in, is the single biggest challenge to UNICEF logistics operations with restrictions and reduced demand.



GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

FOR THE MOTHERLAND FOREVER

Ten Nauticle Miles From The Global Trade Route



Port Services

- Container terminals
- Ro-Ro terminals
- Oil terminals
- Bulk terminals
- Cruise terminals
- Ship repair
- Crew changes

Port Related Industry

- Supporting services
- Port-Park-City model
- Community development

Integrated Logistics

- Bonded warehouse
- Value added services
- Duty free facility
- Logistics finance
- Wholesale centre
- Product exhibition

Energy Hub

- IMO2020 compliant
- Marine bunker
- LPG / LNG
- Petro chemicals



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