Business Case

Cargill Digital Supply Chain Transformation in South Korea

By Johnny Jiang

Abstract: This business case supports the online presentation delivered by Mr. Jiang involving the digitalization of 85 Cargill plants across the Asia Pacific. Through the case study, participants will gain insights into important trends impacting global supply chains, as well as learn about the drivers and benefits for organizations that engage in change. Participants joining online will have the opportunity to ask questions.

Background

Cargill, founded in 1865, is a diversified, multinational conglomerate of food, agricultural, financial and industrial products and services company. Cargill operates in 68 countries worldwide, employs more than 155,000 people and had total revenues of more than $130 billion in fiscal 2017. It is the No. 1 unlisted company in the world and operates hundreds of plants in many countries around the world. By partnering with farmers, producers, manufacturers, retailers, governments and other organizations, Cargill is committed to its goal of nourishing the world in a safe, responsible and sustainable way. Together with its partners, it continues to create benefits and inspire innovation, while benefiting the regions and surrounding communities in which it operates.

In addition, Cargill is closely involved in our daily lives. From the sorbitol in the toothpaste that we brush our teeth with in the morning, to the healthy and safe chicken products Cargill provides us with, and the high fructose corn syrup that makes the soft drinks. What Cargill has to offer is every perspectives of life than we think. I call it "Cargill behind".

Purina was first established in 1894 with 120 years' business experience, and was acquired by Cargill in 2001. It focuses on animal nutrition science, and has a passion for improving the quality of life for animals. Since the establishment of the Purina Research Farm in Grey Summit, USA in 1926, Purina has played a leading role in animal nutrition and feeding research, and has actively engaged in industry-academia partnerships with outstanding universities and research institutions around the world.

Culture and Management Style
Based on the literature search and the analysis of Hofstede's culture analysis model, it could be noticed that South Korean companies are very collectivistic and they are committed to motivating each employee to be part of the collective, with special emphasis on pride and solidarity, motivating all employees to develop the spirit of unity and collectivism and to work together to contribute to the company (Hou, Wang and Wang, 2007). In addition, there is no doubt that South Korean companies prefer to avoid uncertainty in stability, and compliance with rules and traditions are their main characteristics. This has a big impact on projects implemented in South Korea.

Business environment
Cargill's strengths are anchored in the key aspects of its business that give it a competitive advantage in the marketplace, such as financial position, experienced workforce, product uniqueness and intangible assets such as brand value. This business case focuses on a analysis of the market environment of

Cargill (South Korea) using the SWOT model.

Its strengths lie in its high brand equity, centuries of experience in the industry, and the breadth of its global footprint. Cargill's businesses span the agricultural services, food ingredients, origination and processing, risk management, and financial and industrial sectors, and its financial independence and muscle power continue to attract a customer base of world-class companies around the world; while its strong R&D and operational capabilities have helped it stabilize its position worldwide.
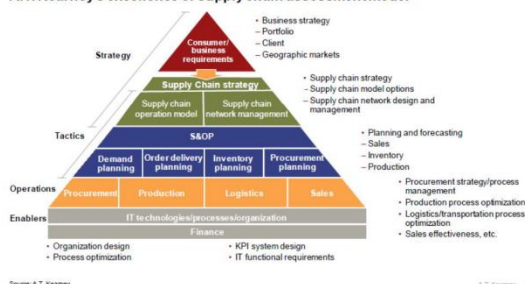
Traditional Supply Chain and Digital Supply Chain
Like most companies in the world, Cargill is still adopting a traditional supply chain model - A.T. Kearney's excellent supply chain assessment model - and we have discovered most contents deprive from experience and practices not by design, therefore quite fragmented, it is not equipped with digital elements. A significant amount of time, efficiency and accuracy in the work is wasted on the steps of different processes.

Instead, the digital supply chain end-to-end model reinterprets the supply chain with a global perspective. Digitalization affects multiple industries such as the Internet of Things, big data, artificial intelligence, as well as consumer behavior. Unlike the traditional supply chain, it not only changes our work, skills and the way we consume, but the way we design, make and deliver. For example, shorter lead times, optimized process, reduced fixed assets have improved the structure of the supply chain, driving improvements in four opportunity areas: visibility, efficiency, agility, and customer intimacy.

Pain points

Customers' pain points
In Recent, the market environment in which Cargill operates has been under very high competitive pressure, with each feed supplier trying to improve its service capabilities to capture a certain market share, to an extent that

customers leave too little time for suppliers to prepare their goods. For example, they would ask for the goods in the morning to be delivered in the afternoon of the same day, and the suppliers only had a few hours to accomplish it. At the same time, Cargill's products are traditional animal feeds used to feed cattle, sheep, pigs and other poultry and pets, and customers lack expertise in this area. At the same time, it is difficult for customers to ensure the accuracy of the three latitudes of quantity, breed and time with their own vague built-in system. Customers often either order too early and too much and feed got rotten or too late and too little that animal starve, customers don't want any of these.

Cargill's pain points

There is also a statistical management for some of the company's data related to the countries in the Asia-Pacific region. For instance, the delivery lead time in Vietnam, Thailand, and Indonesia is 7-14 days, and the delivery lead time China is 3-10 days, but the delivery time in South Korea is 3-5 hours. This shows that despite the fact that animal feed is a traditional industrial product, customers are demanding a top level of e-commerce delivery from Cargill. For Cargill, it seems that frequent firefighting has rendered the services we provide to our customers inconsistent, while the quality of services has deteriorated and a lot of human and material resources have been wasted, resulting in high cost and the difficulty of launching in-depth services. In addition, Cargill's current pain point is that the existing supply chain operation is traditional, manual, inefficient, and has a high error rate. Cargill's inability to issue so many shipments in a short period of time limits flexibility, and tens of thousands of SKUs can make Cargill's entire supply process very complex, creating high management costs within Cargill as well, and negatively impacting competitive sales prices and corporate competitiveness. For example, Mr. Choi, Cargill's supply chain manager, concluded that some customers complained and gave feedback about inaccurate deliveries, or even wrong deliveries.

Third-party logistics' pain points

Third party logistics companies emphasize cost control, profit maximization, and asset utilization maximization. In terms of fixed costs, the cost of acquiring vehicles and hiring drivers does not change with the volume of goods, while feed trucks are special vehicles, and South Korea's strict feed safety and anti-contamination policy requires that such vehicles are not allowed to be used for other purposes, and once the vehicles are restricted, it is a big pain point for the logistics company. In order to ensure that the third party logistics can be delivered to customers as soon as possible, the company requires a certain number of logistics vehicles waiting in front of Cargill for delivery at any time. The long waiting time causes loss of opportunity cost and the vehicles are not effectively utilized. At the same time sometimes the 3PL delivery vehicles are called in and find that the customer's order is wrong, resulting in a loss of cost

for them. So the pain point is that not only does the 3PL not fulfill the order, but they also lose opportunity costs and fail to provide service to other customers.

In addition to the above, customers, Cargill and 3PL companies are subject to HACCP[1] monitoring.

Situation analysis

Johnny Jiang then is Cargill Animal Nutrition APAC[2] supply chain director, and he is looking for digital transformation projects launch in APAC. Mr. Choi approached Johnny and illustrated Cargill's current situation for seeking help and advice. Despite Mr. Choi's more than 20 years of experience, these three pain points were still struggle and puzzle him, Mr. Choi remembered Johnny's presentation and lecture on digital supply chain, then it would be a valid solution. So Mr. Choi contacted Johnny with the attitude of giving it a shot.

Fixed Mindset, Inadequate Digital Skillsets and High Human Cost
Because of the inherent corporate culture in South Korea, although the above issues were a serious problem for not only the customer but also the company and third party logistics, everyone was competing in a small market and no one was looking for breakthroughs and new solutions. In addition, Cargill lacked highly skilled personnel who had digital skills with a related knowledge base. The limited capacity of existing employees and managers and high labor costs - costs even surpass those in some countries in Europe and the United States

- is reducing Cargill's return on investment. The reduction in investment efficiency results in slow capital turnover and inadequate capital for continued growth; the decline in profits puts the company at a disadvantage by not generating much capital for research and development, and expanding production. These are the problems that Cargill needs to face and solve.

Automation Plant

Fortunately, Cargill has launched the largest feed mill (designed over One Million Metric Tons per year) in the world, Purina Feed Mill, which located in Pyeongtaek, South Korea. This initiative introduces the best nutritional solutions and feed safety control measures locally, bringing world-class product quality and first-class efficiency to the South Korean market, which will be beneficial to support farmers to promote animal performance and drive their business growth. In addition to this, the Pyeongtaek feed plant integrates a range of Cargill's strengths and gathered its advanced experience in feed safety control, high quality raw material sourcing and product quality control to provide local customers with safe and trustworthy feed products that optimize animal performance and ultimately improve food quality and safety through the South Korean supply chain. The plant covers an area of nearly 52,600 square meters and its products include feeds for poultry, ruminant, hog and pets, etc.

Digital Technology

Meanwhile, an analysis was performed between the global IT resources and the local IT resources in South Korean. While the global IT resources possess a uniform deployment, the customer delivery level in South Korea is much higher than the global level. Besides, the existing IT supporting roles cannot meet the changing needs of the South Korean market in the area of low English level and global generic software. Additionally, global IT companies carry out a traditional license model, which is very different from SaaS[3] model as quite high cost and inflexible. South Korea local IT companies could provide affordable solutions with features meet customer changing demands. Therefore, the selection of local digital technology had been executed.

ROI in APAC

After analyzing ROI[4](Return on Investment), one finds that South Korean per capita income is pretty high. For example, employees spend a long operating time on each order, the average order consumes even half an hour to complete after counting due to the manual transmission of customer orders. Therefore, companies in South Korea continued a high labor cost. As digital transformation can save a lot of labor cost for companies, real-time information therefore high visibility will reduce visible cost. When doing digital transformation exploration, it requires not only the company to own digital technology, but also robust organization and process system capability.

Cargill (South Korea) is now moving in the same direction as the rest of the world. There has never been a better time for Cargill (South Korea) to undergo digital transformation.

Value proposition
Digital Capability can serve as a strategic competitive advantage for Cargill. leaving behind traditional price wars and lead time wars to deliver goods. Digitization has led to a more visibility of the entire plant process, including improved product traceability and work transparency, which has fairly reduced the time spent on manual operations, increasing efficiency while also reducing service costs. The second is agility, the result of digitalization for the factory to bring faster and more accurate innovation capabilities, while several operations instead of manual, freeing hands to free labor, accelerated mechanical operation also brings potential manpower for enterprises. Since customer orders were not controllable before the digital transformation, the continuous switching of production methods brought negative fluctuations in upstream raw materials, which is a typical bullwhip effect - a slight change at the customer's end can result in huge fluctuations upstream of production and procurement.

For the customer, with easy-to-read visual results that track and target the location of the truck throughout the process. Cargill delivered solution now include accuracy of the data and the traceability of each shipment the customer received, giving the customer side great transparency of the product as well as the logistics information. With better customer service results in lower costs for the client. For one example, an excess of feed may have been previously discarded by the client in its entirety. $10,000 will be lost by the client for every 10 tons of feed lost, which not only results in a waste of resources but also greatly increases their acquisition costs and the subsequent loss of nearly tens of thousands of dollars in profit from animal starvation. In addition to easier and more accurate deliveries, the digital results help customers save more time in farm management. Also, the consumer engagement has been refined and the products are more personalized, including the product and service packaging, which has been further optimized to enhance the relationship between the company and the customer and increase the intimacy.

For logistics companies, there will be no more idling of trucks and asset utilization will be greatly improved with this precise digital drive. Marginal costs lost were subsequently reduced as a result of previously waiting in front of Cargill for shipments.

Kick off

4 levels communication
For South Korean companies, 30-40% of project success lies in the technical

aspects, while 60-70% is about culture. The digital transformation of the supply chain necessitates a break from the traditional top-down culture and management model inherent in South Korea. But Cargill is, after all, a global company, and the U.S. has been relatively more aggressive in implementing management changes than European companies.

Johnny Jiang's boss Greg Good was then Global Supply Chain VP strongly trusted him to do this, yet for the sake of the traditional South Korean culture and corporate management model, he began by communicating with the biggest boss first. So he persuaded the Korean business vice president to engage in a high level alignment exchange first to identify the issues that were in line with the company's current situation and the necessary changes that needed to be made.

As the preliminary stage of the gradual implementation of digitalization, it is best to pilot a few customers and logistics companies that are willing and able to do so. Johnny Jiang, as APAC's supply chain director, further engaged with the Korean managing director Dr. Lee, who introduced and enriched the practice of digital transformation in a wide range of industries, especially digital transformation that could address the difficult market environment in South Korea. Global digital transformation for the supply chain and Cargill's adaptability may generate further business growth, profit growth and business capabilities for the team, with business growth and promotion which directly contribute to improved customer satisfaction. Providing Supply chain as a service to customers will be a way to strengthen customer loyalty. Johnny Jiang mentioned that the digital transformation will commence in the supply chain industry yet not only in the supply chain, but also in automated factories, automated warehouses, automated planning, automated logistics and inventory management, which will form a comprehensive closed loop and a "seamless interface" with customers. Dr. Lee acknowledged above and he was greatly enthusiastic about this. After further communication, Johnny Jiang will present the project in a simple and clear exactly summary of how to do it, the scope of the project, the possible impact and the potential risks that can be controlled to South Korea management team with Dr. Lee present and endorsed the project. This communication was lengthy and took time for both parties to confirm the direction of change.

The APAC supply chain Center of Excellence (COE)[5] had further conversations with the management team in South Korea. Johnny Jiang along with the East Asia supply chain analyst carried out deeper and broader communication with the Korean supply chain manager at the WHAT, WHY and HOW levels and conducted extensive training to ensure that they were fully supported in the project development process. It was recognized that the customer delivery chain covers many functions, including sales, marketing, finance, HR, supply

chain, and customer service. Nonetheless, technical professionals as well as experts in the supply chain field were critical to help us achieve our goals and functions to finalize such a digital platform. Consequently, a third-party IT company was approached. After interfacing with all of the above, a proposal was reached. With Johnny and the rest of the APAC supply chain COE team, all experts in the supply chain field, professional insights could be illustrated in the process.

The local team, which was headed by the South Korean supply chain manager, as well as the Korean 3PL, sales, and customer service, engaged in preliminary communication with the customer. During this period, Johnny Jiang visited to Korea with three to four times to 3PL and IT companies as a way to promote trust in customers. Last but not least, the meetings we had with the software companies, firstly, we expressed our hope that South Korea would adopt the SaaS model and continue to serve customers with SaaS instead of traditional license. For the software company, the first goal of our communication was to convince them to accept the SaaS model to serve their customers. However, Cargill will not offer direct payment, but subsidize with the start-up capital of the logistics company. For the factories, we are committed to informing them of the problems and pain points that can be solved to maintain active operations, high efficiency and low cost. For customers, digital transformation supports customers to concentrate on raising animals. Upon the introduction of 2.0 TMS[6], the work of third-party logistics will be significantly optimized, including reduced waiting time for transport vehicles, more efficient asset utilization, and lower costs.

Communication targets	Communication content	Communication Effect
Global supply chain VP and global business VP	The how, the scope, the reach, and the potentially manageable risks	Initial communication completed
APAC supply chain director Johnny Jiang and managing director Dr. Lee	Industry practices, global digital transformation for the supply chain industry and Cargill's fit can lead to further business growth, profit growth and business capability for the team.	This communication took a long time for both parties to confirm the direction of the change.
APAC supply chain's center of excellence (COE) and management	Deeper and broader communication and extensive training was conducted at the WHAT, WHY, and HOW levels to ensure they were fully supported in the program development process.	Achieving initial results

team in South Korea		
Korea supply chain manager with third party logistics, sales, customer service	The local team, led by the Korean supply chain manager, also needs to drive the Korean third party logistics, sales, and customer service to communicate with customers upfront.	Acceptance of SaaS model

Well Designed and Validated Change Plan

When conducting the exploration of digital transformation, it is vital to equip not only with digital technology, but also with a very strong organization and the ability to manage advanced systems. Based on the competency system of the employee organization and with culture at the forefront, this is the core concept that can change to speedily upgrade the level of customer service.

Therefore, Cargill South Korea decided to create momentum and quickly move forward with a pilot model of Lean when everyone was in agreement. However, data management was a major challenge. Cargill "ERP" system was a very simple IBM AS400[7], developed in the 1960s, a [8]DOS-like user interface that featured very restricted functionality with only basic data and no embedded query or reporting capabilities. After several discussions and coordination between IT experts and supply chain experts, it was decided to extract data from the current South Korean company's database to the TMS/WMS[9] & ICS[10] system and perform a system migration. Based on the original rudimentary system, the data was extracted and fabricated into a data-lake and categorized for query , report and push alert according to the demand.

Control the Scope of Change

Nevertheless, some shortcomings are evident. For instance, the data transmission system is not stable enough and customers are not familiar with the operation of our system. So there was a desire to establish the system and to provide more detailed and comprehensive training to our clients. Then, at the end of the first phase of the model, we did the second phase of the model for three weeks with new adjustments. After one month, a comprehensive report was sent to the management with entire results. There was 100% accuracy and a 40% reduction in logistics costs, customer satisfaction continued to be improved, as well as they are adapting this method. Within one month of the launch, 100 shipments were sent to the customer with 100% readiness, the customer was very satisfied and the logistics company reduced costs by 30-40%.

It is not enough to specialize in a handful of customers as well as factories,

however, what we have done has been widely recognized. In the next phase, the range of factories was expanded to five, and more than that we received a lot of feedback that was gathered and used to map out the next steps.

Step by step

1.0 OMS[11]

The OMS, or Order Management System, is based on information received from customers' orders and inventory information sent from the warehouse management system, which then categorizes orders by customers and urgency level, allocates inventory to different customers' locations, and determines delivery dates. 1.0 OMS, Cargill's original system, allows not only customers but also truck drivers to order and deliver online through their mobile devices respectively. The system terminals will calculate and conduct big data recommendations based on the SKU[12] categories that customers often order, and suggest customers to continue to purchase. An example is that if a customer often buys a certain product in www.jd.com, maybe a certain brand of toothpaste, the platform will continue to recommend such products according to the big data algorithm, and even after a month, the platform page will remind the customer to further purchase such products.

The system underlying the 1.0 OMS is that the customer first places an order on the Internet and then the customer service disk Create TLO[13], a truck as an order, transmitted by phone or fax to the NIS/LRT[14] system, which is built on the IBM AS400 and routes the data and data mirror to the production system, loading dock, loading bay and truck. After the completion of the step of product loading, the driver is notified that the product is ready for shipment. Once the shipment starts, the system is automatically activated and the customer receives a message of shipment notification.

The OMS 1.0 system has been extremely convenient for not only the company but also the customers. The company has cut down the number of phone calls and faxes through the OMS system, which has in turn saved money on phone bills and reduced entire costs. At also, human error is reduced from 1% to 0%, eliminating the possibility of rework and increasing the order accuracy rate from 98% to 99%. The company's reputation and credibility have increased dramatically as a result of the increased employee engagement and positive working atmosphere. For the customer side, the implementation of the OMS system presents tremendous convenience and traceability of orders, which enables ordering or checking orders anytime and anywhere, with an order accuracy rate of up to 99% resulting in great flexibility for the customer, and a reduction in time for each dispatch from 150 seconds to 45 seconds, leading to much higher order efficiency and wider customer satisfaction and loyalty.
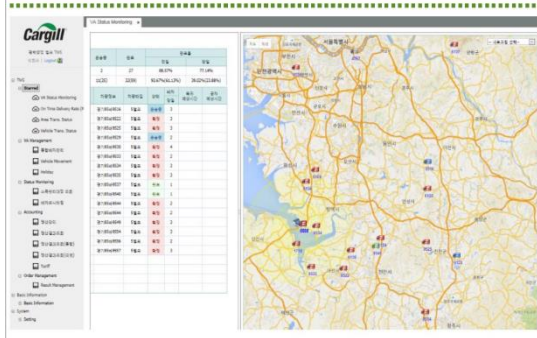
Shipping Process - Bulk
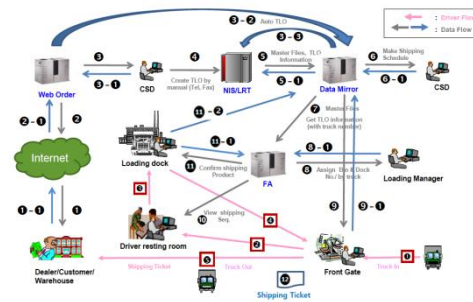
2.0 TMS

Although the benefits of the 1.0 OMS system are visible, it can be better. In order to promote asset utilization, Cargill determined to further upgrade its system to the 2.0 TMS system. TMS is the abbreviation of Transportation Management System, which is mainly used in logistics management system. The main function of TMS is the specific management of the logistics chain, including vehicle management, management of goods in transit, etc.

For Cargill, the TMS system has considerably facilitated the utilization of the trucks from the logistics company, no longer does each truck deliver only one batch of cargo per day, some of them have even commenced the transportation of the fourth batches of cargo at the same day. TMS has enabled the automatic matching of trucks, which is materialized in the shortening of the truck transportation routes to deliver more cargo to more customers in the shortest time and distance. The entire graphical representation, vehicle dispatch and freight statistics are the main advantages of TMS that differ from the OMS system.   During the 1.0 OMS period, the company only counted the freight generated by all trucks at the end of each month, and such statistics were likely to bring actual deviations, resulting in internal management quarrels or disagreements between the company and the logistics company. However, the real-time freight counting method brought by TMS avoids these potential problems, and the costs incurred by each customer and each truck are generated immediately.

TMS Menu & Function | Allocate Trucks by TMS

At one point, TMS also elevates the level of service to customers. In TMS, the company classifies all customer groups into three types of customers, A, B and C, corresponding to key customers, important customers and general customers, so as to monitor customers' feedback on service in real time, without waiting for the end of the month to connect with sales or customer service. The OTIF [15](on time in full) indicators for the three types of customers are 99% for A customers, 97%-99% for B customers, and 95%-97% for C customers.
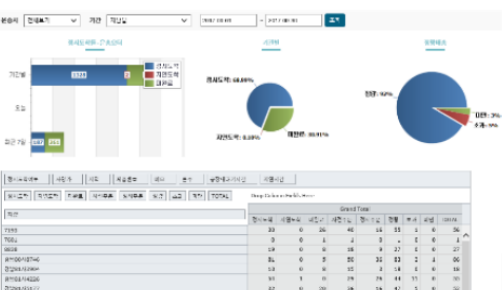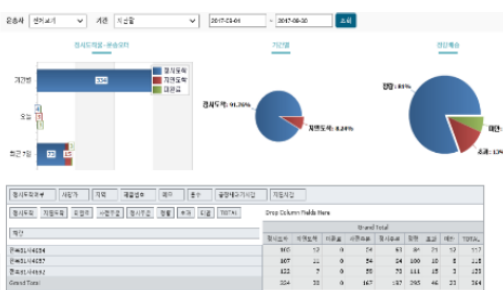

OTIF within 3Hrs by TMS
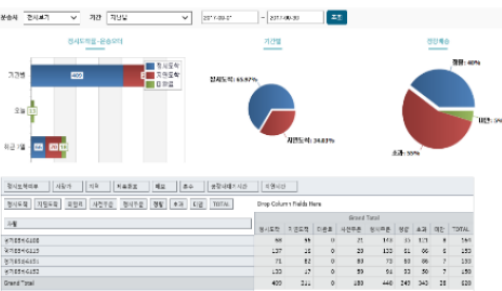
3.0 ICS
Both 1.0 and 2.0 systems allow customers to place orders on their own, while

3.0 ICS system is upgraded to unified management of all orders and supply chain by the company. Inventory control systems are integrated software programs designed to track products, inventory, orders and fulfillment among customers as well as suppliers. In the first two phases, the company provided only products to customers, but in 3.0, it upgraded to selling supply chain services in addition to products. At the same time, the whole real-time inventory count is monitored by the company, and the inventory count of the same customer is scanned by 3D laser within 4 months. A 3D scanning apparatus is installed on top of the silo and the scanning task is performed every 10 minutes and the changes are observed with great accuracy, with an error of only about one thousandth.
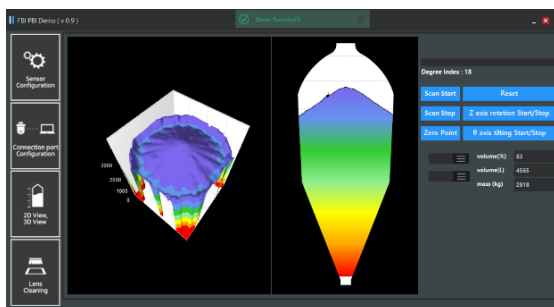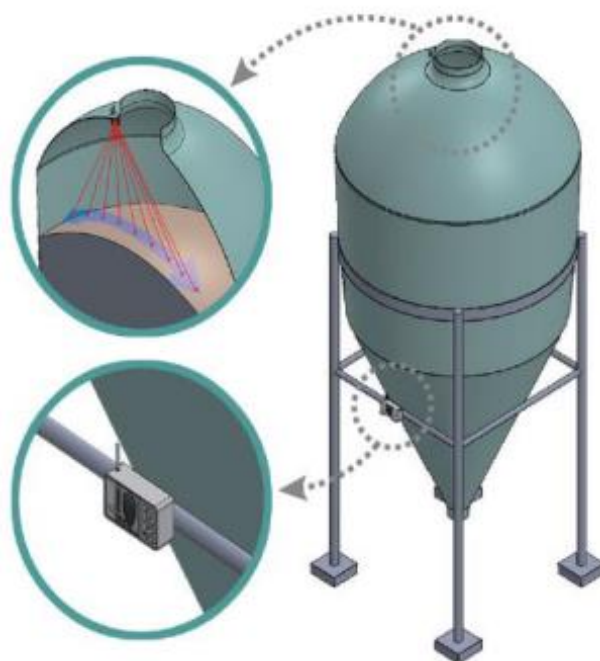
Load cell (Kg)	Sensing Unit (Kg)
2948	2918

Load cell (Kg)	Sensing Unit (Kg)
1240	1196
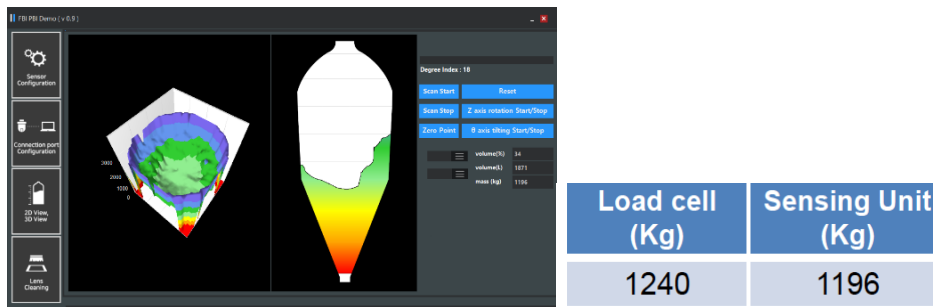
From customers placing their own orders to customers can tr ust Cargill do that for them, which flexibly arranges the company's existing vehicles based on the total inventory of common customers in the same area as well as the total demand, linking the entire OMS/TMS/WMS and ICS installations. From the truck driver to the customer to the customer service, all are seeing the real-time dynamic message on the mobile phone.

4.0 IBP[16]

The latest is the forthcoming 4.0 IBP system, an Integrated Business Planning that consolidates sales, marketing, R&D, operations, logistics, finance, HR and IT all in the single process and prioritizes the finance department over the entire planning process. The impact of business decisions is mirrored in the financial statements, so that financial planning is closely aligned with business planning, thereby ensuring that companies achieve their profitability goals at the planning stage.

IBP's technology empowerment lies in its end-to-end inventory visibility, optimized supply network layout and integrated inventory management across channels, which collectively yield a highly corresponding supply chain along with an optimal combination of cost and service levels. Simultaneously, on the heels of ICS, IBP further elevates accuracy and enhances the efficiency of subsequent supply planning and inventory optimization. Integration with commercial promotion information and analysis of promotions improves overall demand planning accuracy. Orchestrating inventory across all nodes of the supply chain network to enable multi-order inventory planning and optimization. Maximize consumer satisfaction with delivery services while achieving enterprise profit goals and optimizing corporate requirements for working capital.

The Matthew effect of "the strongest getting stronger" is such that companies who implement IBP will emerge as leaders in various industries, stretching the gap between them and their competitors in order to maintain their dominant position in the market and further enhance their competitiveness. South Korea, in contrast, has taken the lead in entering the IBP system ahead of other countries, responding to the current trend and seizing the opportunity for change, paving the way for differentiating with other competitors and being

invincible in the increasingly fierce competition.

All in all, the more it continues to evolve the digital solution used by the company, the more people will appreciate the value of Digital Power, which can then be rolled out nationwide. That is why it took almost three months in total to continue upgrading 2.0, 3.0, and even 4.0, while rolling out the business countrywide. A favorable application of digital transformation should be the basis for standing on digital transformation, which enables us to realize the true sense of digital drive.

Summary

Looking back on the process, the outcomes were satisfactory for all stakeholders, with increased profitability and competitive advantages for the company. All the mentioned Pain Points been resolved with advanced solutions not only solve the problems but improved all stake holders capabilities as well.

For customers, where all orders will switch from manual phone calls and faxes to confirmation via cell phone and later no Order but Replenishment notice. The platform we created will push recommendations on the optimal order quantity, order timing and order type based on big data. This will also be complemented by a manual system that will not interfere with his regular farm management.

Cargill is also delighted that what started with they doing the technology transformation, and after these six months down the line, the model has already brought great benefits in terms of Profit, Customer Loyalty and Continue Growth.

Third party logistics companies are also willing to pay Cargill for the convenience of their operations and cost savings. Looking ahead, with more technological tools and algorithms, including digital models, including business model upgrades, we will expect the whole model to be defined and upgraded step by step, and the whole industry can learn from the theoretical part to the practical part of the digital transformation.

Financial Turn Cost to Profit
Among the innovative models in the digital transformation process, the logistics company finances itself on the basis of Cargill's start-up capital, while the benefits received by the logistics company are translated into returns to Cargill and the software company, with Cargill's revenue as a series of assets acquired by the data property. While IT companies obtained the SaaS model without the previous license model, assuming that the profit of each order is $5, of which $2 is obtained by Cargill and the remaining $3 is collected by IT companies. Collectively, the digital transformation has garnered Cargill a profit of $100,000 after the first year.

Business Targets
Through the digital conversion from 1.0 to 3.0 and even the 4.0 system immediately forthcoming, Cargill's customer loyalty and satisfaction grew. Owing to the transaction level, the previous quality service did have no exchange for considerable customer loyalty, but after the transition from transaction level to process level to system level and finally to interdependent partner, the relationship between Cargill (South Korea) and its customers has reached the 1.0 to The relationship between Cargill (South Korea) and its customers has been upgraded and transformed from 1.0 to 4.0. It is committed to building a mutually beneficial and trusting partnership, but also to sorting and classifying our customers so that the most important ones give us the highest profit return without wasting a lot of corporate resources for the less important ones. Moreover, with digital capability enforcement, Cargill able to provide its VIP customers with better service in terms of OTIF, traceability and total cost reduction.

Next Step
In the long run, the Digital Transformation journey can be expanded from South Korea to other countries in the Asia Pacific region, including China, Vietnam, and Indonesia. It is also incumbent upon us to expand the digital world to other functions, while finance, sales, marketing, and human resources are

increasingly in need of digital transformation. In the near future, nearly all companies will need to compete on Digital Platform, whether willing or forcefully, and this is the biggest Paradigm Shift of business systems globally.

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Appendix

Proper Noun	Interpretation
1. HACCP	HACCP is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.
2. APAC	APAC countries are those located within the APAC geographical region. The APAC region is loosely defined but generally considered to encompass the area in and around the western Pacific Ocean. APAC stands for Asia-Pacific (A-sia PAC-ific).
3. SaaS	Software as a service (SaaS) is a way of delivering applications remotely over the internet instead of locally on machines (known as "on-premise" software). SaaS applications are also known as: Web-based software; On-demand software; Hosted software.
4. ROI	Return on investment (ROI) is a performance measure used to evaluate the efficiency or profitability of an investment or compare the efficiency of a number of different investments. ROI tries to directly measure the amount of return on a particular investment, relative to the investment's cost.
5. COE	A Center of Excellence (COE) brings together people from different disciplines and provides shared facilities/resources. In academic circles, it is sometimes referred to as a "Competence Center" or "Center of Competence".
6. TMS	A transportation management system is a software system that helps companies manage logistics associated with the movement of physical of goods – by land, air, sea, or a combination of transportation modes.

7. IBM AS400	The IBM AS/400 system is the most popular small- to medium-sized, multi-user business computer system in the world today, and remains the best-selling system in the multi-user server segment. The AS/400 has more than 750,000 installations worldwide, covering more than 150 countries, supporting more than 40 languages, with nearly 10,000 business partners and independent software vendors, and more than 30,000 business applications. It is widely used in various industries such as distribution, finance and securities, manufacturing, transportation, and security.
8. DOS	Disk Operating Systems were an early class of operating systems on personal computers. For 15 years, from 1981 to 1995, DOS was a major player in the IBM PC compatible market
9. WMS	WMS is the abbreviation of warehouse management system (Warehouse Management System), warehouse management system is through the inbound business, outbound business, warehouse transfer, inventory transfer and virtual warehouse management and other functions, batch management, material correspondence, inventory count, quality control management, virtual warehouse management and instant inventory management and other functions of the integrated use of management system, effective control and tracking of warehouse business logistics and cost management of the whole process, to achieve or improve the enterprise warehouse information management.
10. ICS	Inventory management systems are integrated software programs designed to track products, inventory, orders and fulfillment among customers as well as suppliers.
11. OMS	The OMS, or Order Management System, is based on information received from customers' orders and inventory information sent from the warehouse management system, which then categorizes orders by customers and urgency level, allocates inventory to different warehouse locations, and determines delivery dates.
12. SKU	A stock-keeping unit (SKU) is a scannable bar code, most often seen printed on product labels in a retail store. The label allows vendors to automatically track the movement of inventory. The SKU is composed of an alphanumeric combination of eight-or-so characters. The characters make up a code that tracks the price, product details, manufacturer, and point-of-sale.
13. TLO	Truck Loading Order
14. NIS/LRT	Cargill operating system then
15. OTIF	on time in full

| 16. IBP | an integrated business planning that consolidates sales, marketing, R&D, operations, logistics, finance, HR and IT all in the single process and prioritizes the finance department over the entire planning process. |