

Chapter 18

Integrated Logistics Solutions Provider in Mexico

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18.1. Introduction

This case study is not about a manufacturing firm but a logistics service provider. The analysis focuses on the increasing number of value added services that third-party logistics service providers now contribute to manufacturing, taking over many tasks that were, in the past, part of manufacturing activities. The case study provides a ‘flip-side’ view of manufacturing-related services, that is, the view from a service provider.

That more services are now outsourced by manufacturing firms to service suppliers have been a result of competitive pressures from a more commoditized manufacturing sector. To improve efficiency and profits, manufacturing firms have increasingly opted to focus on their core competencies and outsource many non-core activities. In the process, service providers, particularly logistics service providers, have expanded the scope of their service offerings. Not only do they provide transportation or customs facilitation services, but they now also offer inventory and warehouse management services, packaging services, and in some cases, even repair and maintenance services. The firm in this case study illustrates the range and the importance of services it provides to manufacturing firms.

18.2. Background Information on the Firm²

The firm is a provider of integrated logistics solutions that was formally established in year 2000 to respond to the changing competitive landscape in Mexico. The signing of the North American Free Trade Agreement (NAFTA) in 1994 ushered expectations of more foreign competition across various sectors including logistics services. In response, 8 customs brokerage companies decided to join together as partners to establish one logistics firm. The 8 partners rotate the presidency of the firm every 2 years and for the purpose of its operations, divide Mexico into 8 different regions. Starting from the provision of customs brokerage services, the firm eventually ventured into domestic trucking and delivery services. It then joined a network of freight forwarders in order to qualify as air and ocean freights agent. It increasingly added more service packages such that today, the firm is an integrated logistics solutions provider offering services ranging from consolidation to packaging and warehousing services to inventory management.

It remains a major customs brokerage firm with its own supply chain consultancy department which provides advice on how to comply with Mexican customs rules and regulations. Its comparative advantage rests on its local knowledge, but it has also since strengthened its own technology and internal procedures to compete with international logistics players such as FedEx and UPS. To supplement its capacity, it uses existing networks to improve service provision, such as participating in online logistics platform whereby customers can choose and book various services such as customs clearance service, trucks, and others. Though it competes with international players for the logistics business, it also provides customs clearance and brokerage services for them, thanks in part to the existing law that reserves customs broker licenses to Mexicans.

The firm currently has 45 offices that are divided into 3 types (Table 18.1). Border offices are located at the US-Mexico border and focused on customs brokering services for both sides of the border.

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² All information about the firm in this case study is from its corporate website as well as from the interview.

Maritime offices are located in various Mexican ports and deal primarily with customs clearance of imports and exports. Internal offices are located in the state's largest cities and act more like sales offices as well as back-office support. It also has 18 distribution centres at the US-Mexico border, 8 of which are located at the US side.

Table 18.1. Examples of firm's different offices

Border offices	Maritime offices	Internal offices
Nogales, Arizona	Altamira, Tamaulipas	Guadalajara, Jalisco
Calexico, California	Tampico, Tamaulipas	Leon, Guanajuato
San Diego, Otay, California	Manzanillo, Colima	Mexico DF
Brownsville, Texas	Puerto Vallarta, Jalisco	Monterrey, Nuevo Leon
El Paso, Texas	Veracruz, Veracruz	Puebla, Puebla
Laredo, Texas	Progreso, Yucatan	Queretaro, Queretaro
McAllen, Texas	Ciudad del Carmen, Campeche	Hermosillo, Sonora
Mexicali, Baja California	Lazaro Cardenas, Michoacán	Merida, Yucatan
Ciudad Juarez, Chihuahua	Guaymas, Sonora	Ciudad Hidalgo, Chiapas
Colombia, Nuevo Leon		Aguascalientes, Aguascalientes
Nogales, Sonora		
Matamoros, Tamaulipas		
Nuevo Laredo, Tamaulipas		
Reynosa, Tamaulipas		

Source: Courtesy of the firm

18.3. Logistics Value-Added Services in Manufacturing Value Chain

The firm provides a range of services to manufacturing firms at various stages of their value chains, starting from pre-manufacturing and manufacturing to post-manufacturing and even after-sales. While in theory, the firm can supply these various services for the entire value chain of a manufacturing firm, instead, the firm provides value-added services to different manufacturers and at different stages of the chain. To one firm, it provides only pre-manufacturing services such as transport or logistics arrangements; to another, it provides post-manufacturing services like packaging and deliveries. Thus, the following discussion of services in the value chain should be seen as the spectrum of value-added services that the case study firm offers, though not in an integrated way to one single firm. While the firm provides services, it is likewise a consumer of services. Thus, services utilized by the firm are also included in the analysis.

For the purpose of this case study, the manufacturing value chain begins with the provision of services at pre-manufacturing stage and ends at the after-sales stage (see Figure 18.1).

Figure 18.1. Examples of services provided by the case study firm at each stage of the manufacturing value chain



Note: All the activities in the value chain are optional and depends on firm's customer on the services that it would like the firm to provide.

Source: APEC Policy Support Unit based on firm interview

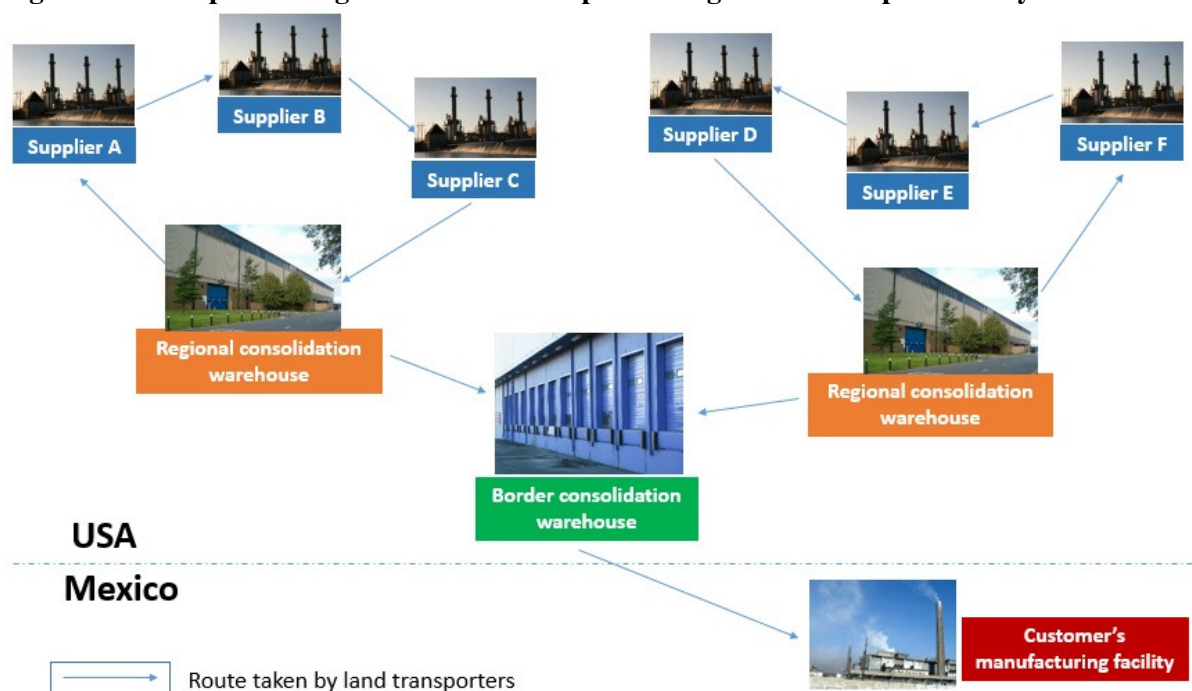
Pre-manufacturing: design, materials sourcing, and logistics

The firm assists its customer in making smart purchasing by advising an optimal procurement and logistics strategy, taking into account the locations and movements of freight. For example, it can advise on how to minimize the number of containers through improved packing of items. Smart purchasing also ensures that its customer only imports what it needs for production and avoids overstocking of production materials. If requested by customers, the firm can also involve itself in material inputs sourcing. The firm may also track and manage its customer's purchase orders. This can include scheduling the truck pick up of inputs from various locations as well as its quantity.

Brokering and logistics services like obtaining all the requisite permits for imported goods and arranging all transports such as ocean carriers, air freighters and trucks likewise remain a traditional part of its business model. On a typical pick-up day in the US, the firm's trucks collect the ordered quantity of inputs, then bring them to different consolidation warehouses for repacking, if necessary, before being moved to the firm's warehouses located near the US-Mexico border for further consolidation. Eight out of 18 firm-owned warehouses near the border are located in the US side. Once the goods are at any of the warehouses, the firm's customs offices from both the US and Mexico sides coordinate with each other to facilitate the border crossing of the goods. If all the required documents are in order, the goods are transported into Mexico, usually by simply changing the US-licensed truck head to a Mexico-licensed one while keeping the trailer containing the goods untouched (see Figure 18.2). This is somewhat different from the experience in ASEAN where the goods have to be physically removed from one ASEAN economy's truck and reloaded to another carrier that is licensed in the importing economy (see for example, Haines (2015), this volume). In the Mexico-US case, at least, reloading need not take place. However, in specific border crossings such as Laredo, Texas, the firm may be required to use a specific border transfer service from the US border to the Mexico border. This means that instead of changing the truck head only once, the change takes place twice. First, the US truck head has to be changed to the transfer service truck head to move the trailer across the customs area into the other side. Then, once at the Mexican side of the border, the transfer service truck head has to be changed again to the Mexican truck head before driving to different Mexican destinations. In terms of maximum capacity per truck, 20 tonnes are allowed on both sides and fines are levied if truck exceeds this capacity.

For the entire logistics process, the firm uses a monitoring system - its own, that of the freight service providers or a customer-provided system. The firm may also provide its customers with the tracking system if it wants to monitor its own goods' trail themselves.

Figure 18.2. Simplified diagram of how smart purchasing services are provided by firm



Source: APEC Policy Support Unit based on firm interview.

Manufacturing process

During the manufacturing stage, the firm can provide value added services such as inventory management, ensuring that there are always sufficient inventory to work on, and renewing orders the moment the materials inventory falls to a specific threshold level.

Importantly, the inventory management service keeps tab of the duration of storage of the inputs. The Mexican government allows for a maximum of 18 months for imported inputs to be used in the exported goods if it were to qualify for import duty exemption and other incentives³. The tax saved by exporting companies through this value-added service by the firm should be considerable if the manufacturing company were to outsource this service.

³ The Mexican Government published the Decree for the Promotion of the Manufacturing, Maquila and Export Services Industry (IMMEX Decree) in November 2006 to increase the competitiveness of its export sector by simplifying the compliance regime and reducing firms' operational costs. The IMMEX Program allows firms to temporarily import material inputs, machinery and equipment without paying the general import tax, value added tax (VAT) and in some cases, countervailing duties if these inputs are intended for use in the production, transformation and repair of goods for exports. However, a maximum limit of 18 months applies (PwC Mexico, 2014), meaning that the exemption is applicable only if the imported goods are used to make the finished products and exported within 18 months. More details of the IMMEX Program can be obtained at: <http://www.economia.gob.mx/industry/foreign-trade-instruments/immex>. It is noted that the 2013/2014 tax reform has led to a revision of the IMMEX Program such that VAT and excise tax exemptions on the temporary import of goods have been abolished. This means that maquiladora now needs to pay VAT rate of 16 percent first at point of entry. It then has to obtain certification from the Mexican tax authorities. If it is certified, the VAT that is technically imposed on the imported goods will be eliminated by a full tax credit. If it cannot obtain certification, satisfying liability for VAT/excise tax on imported goods can be done by placing a security via a bond issued by an authorized entity (Deloitte, 2014). However, regardless of the change, it is understood that there is still a maximum period of 18 months where imported goods have to be used to make the finished products and exported to be eligible for the incentive in one form or another.

Post-manufacturing

Value-added services offered by the firm in the post-manufacturing stage includes storage of finished products at its warehouses (either before export or immediately after import) as well as product quality testing using various product standards.

Another important service provided by the firm at this stage is re-packaging services, for example, providing labels or instruction manuals in Spanish, or changing plugs of electrical equipment to fit the Mexican power source. In one customer case, the firm provided the software installation services for imported computers from Chinese Taipei and the service was done at its own warehouse.

When products are ready, the firm handles the distribution logistics regardless of whether they are to be exported or for the domestic market. Information on where and who they should be delivered to are provided by the firm’s customer.

After-sales services

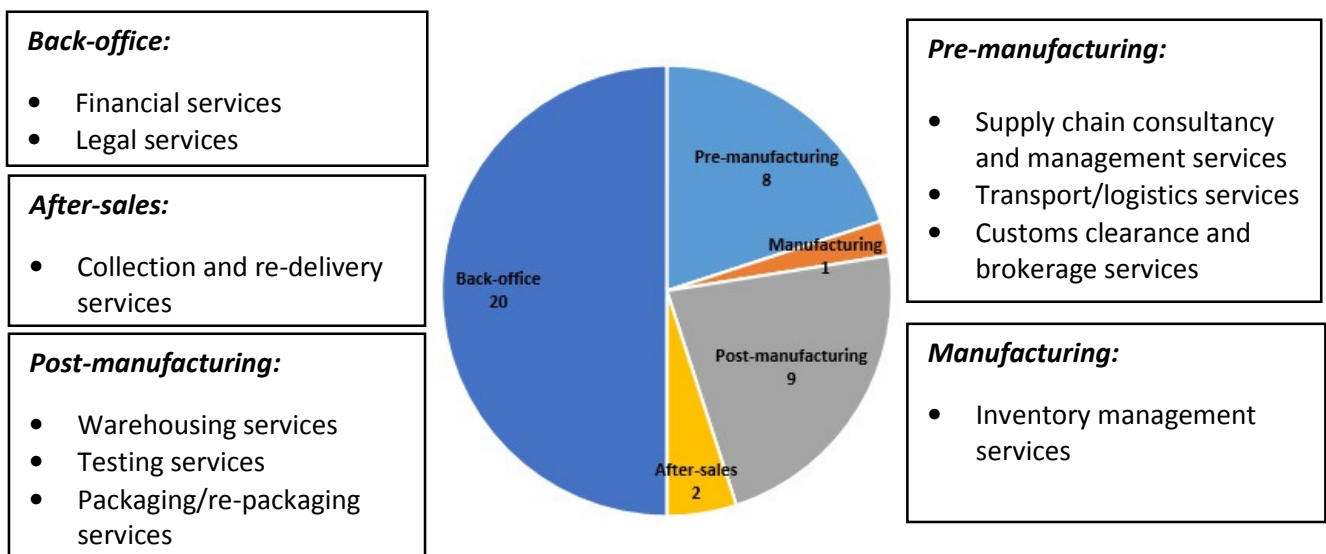
Firm’s involvement in after-sales services usually revolves around collection of faulty products from end-users to the manufacturing firm’s repair stations. For one computer manufacturer customer, the case study firm provided the software re-installation service for the manufacturing firm’s computers because it has no affiliate presence in Mexico.

4. Services along the Value Chain

Services identification and value contribution

A total of 40 services (see Figure 18.3), which are composed of at least 71 services (if classified by UN Central Product Classification, Ver.2) are identified in the value chain and they are categorized according to the various stages within the chain: i) pre-manufacturing services, ii) services during manufacturing, iii) post-manufacturing services, v) after-sales services, and vi) back-office services.

Figure 18.3. Breakdown of services by stage and examples of key services



Source: Compiled by APEC Policy Support Unit

Of the 71 services, the firm supplies 28 services and utilizes 44 services. One service - training services, particularly for tracking/monitoring systems at the pre-manufacturing stage - is both provided and utilized⁴. With the exception of call centre services, all the provided services are found at the pre-manufacturing to after-sales stage. Examples of these services are supply chain consultancy and management services; customs clearance and brokerage services; inventory management services; and packaging/re-packaging services. This is very much in line with firm's strategy and objective of providing services to manufacturing firms at these stages of their value chains.

All the utilized services except training services are found at the back-office stage and this is intuitive because just like its manufacturing counterparts, services firms themselves need these services to ensure the smooth functioning of their operations. Examples of such services are financial services; legal services; human resources services; and telecommunications services.

Outsourcing, bundling and other aspects of services supply

Among the 71 services classified by UN Central Product Classification, Ver.2, 18 services are supplied in-house, 19 are partially outsourced while 34 are fully outsourced (see Appendix A). Dividing these services into whether they are supplied or utilized by the firm prior to analysing its outsourcing decisions reveals interesting observations. Of the 28 services supplied by the firm, 14 are provided solely in-house, 6 are partially outsourced while 8 are fully outsourced. On the contrary, of the 44 services utilized by the firm, 5 are provided in-house, 12 are partially outsourced while 27 are fully outsourced.

The fact that the share of in-house services is higher in supplied relative to utilized services (50 vs. 11 percent) indicates that if possible, firm would keep supplied services, where it has comparative advantage and serve to differentiate itself relative to other logistics firms, in-house. These supplied services include customs clearance and brokerage services, the primary service provided by the firm, as well as value added services such as supply chain consultancy services, testing services and re-packaging services. However, as the statistics show, this does not mean that all supplied services are provided in-house. Indeed, around half of supplied services are either fully or partially outsourced, for reasons such as: i) firm's strategy not to be asset-heavy which requires the purchase of a large fleet of trucks, ocean freighters and aircrafts for logistics services; ii) absence of warehouses in certain cities/towns for warehousing services; iii) strategy of not hiring many headcounts who would only be needed for one-off tasks and for a short period such as labelling certain products; and iv) lack of expertise such as freight insurance services.

On utilized services, services are generally outsourced for the following reasons: i) government services, such as inspections pertaining to environmental, health and safety (EHS); ii) required by laws and regulations, such as external auditing services by third party providers; iii) lack of expertise or specialization in-house to provide certain services, such as IT and legal services; iv) need access to the best services, such as training services; v) lack of feasibility to supply service in-house, such as banking and utilities services; vi) need for strong relationships with government agencies, such as company registration and licensing services; vii) economies of scale such as property management services; and vii) network economies, such as recruitment services.

5. Policies Affecting the Value Chain

An essential part of this study is the analysis of how policies affect the value chain (see Appendix B).

⁴ Training services at the pre-manufacturing stage is counted only once even though it is both supplied and utilized.

Security concerns

The integrated logistics solutions provided by the firm is heavily reliant on the smooth movement of goods from its origin to intended destination. Inputs and products need to be transported in a timely manner and with no or little damage or loss. While there are many reasons why goods could be delayed and/or lost during transport, security is one of the main contributing factors in Mexico⁵. Indeed, in a survey conducted by World Bank for the Logistics Performance Index 2014, the experience of criminal activities (eg. stolen cargo) is reported as one of the major logistics problems in Mexico. Other problems pointed out for shipment delays are pre-shipment inspection and solicitation of informal payments.

Firm representatives estimate that security concerns add about 6% of freight value to the cost of logistics. The increase comes in the form of extra insurance and use of additional measures such as live tracking of trucks and freights or, if necessary, armed escorts and armoured trucks. To address the security issue, the firm has strict rules and regulations concerning confidentiality whereby only the staff who is handling a specific customer know exactly the goods that are being transported and the specific logistical arrangement, i.e. the time and route of the truck. The firm noted that in many cases, crimes happened because of information provided by the staff of logistics providers.

However, it should be acknowledged that security is more of an issue for the transport of finished goods and less for raw materials and intermediate goods because the former can be easily resold in some black market somewhere while raw materials and intermediate inputs are harder to dispose of. In addition, security is a concern only for certain states and/or routes. The usual routes taken to transport goods from Mexico to the US and vice versa are generally safe. The same can be said for routes leading to Mexican ports.

Infrastructure and customs

Relative to the situation 20 years ago, Mexico has come a long way in terms of logistics improvements. Mexico enlarged its ports and allowed management of ports by foreigners. Mexican ports, in fact, now serve as good substitutes for saturated US ports such as Long Beach, California and Houston, Texas.

However, the Logistics Performance Index (LPI) released by World Bank shows that Mexico still ranks at the bottom six among APEC economies based on overall score. This single score takes into account 6 main components, namely: i) the efficiency of customs and border management clearance; ii) the quality of trade and transport infrastructure; iii) the ease of arranging competitively priced shipments; iv) the competence and quality of logistics services such as trucking, forwarding, and customs brokerage; v) the ability to track and trace consignments; and vi) the frequency with which shipments reach consignees within scheduled or expected delivery times. Specifically on i) customs and ii) infrastructure, Mexico ranks at the bottom four and six respectively. In some ports, it still takes up to 3 days to unload a ship. The firm considers port services in Mexico expensive.

Single windows system

The Mexican Government released a decree on the establishment of single windows system in January 2011. The system, which is called Ventanilla Digital Mexicana de Comercio Exterior or Ventanilla Única became effective in June 2012⁶. This electronic system serves as a platform for foreign trade operators including customs brokers to electronically file all foreign trade information required by the

⁵ More details on the state of security in these states can be obtained at: <http://travel.state.gov/content/passports/english/alertswarnings/mexico-travel-warning.html>.

⁶ For the original decree establishing the single windows system in Spanish, please refer to: http://www.economia.gob.mx/files/marco_normativo/D135.pdf.

relevant authorities. It is expected to lead to faster customs clearance and reduced customs costs because it automates and standardize customs processing⁷.

The issue of single windows is an interesting one from the viewpoint of the case study firm. As providers of customs brokerage services, the firm should not be supportive of single windows initiative because by facilitating customs clearance processes, it could take business away from the firm. However, as a provider of integrated logistics solutions, the firm is very supportive of the initiative because the loss of business from customs brokerage services is compensated by the additional businesses spawned by efficient customs systems.

Despite the implementation of single windows, however, customs brokerage services still contribute more than 50% of the case study firm's revenue. This is one evidence that the single windows system has not supplanted the need for custom brokerage services in Mexico, presumably because importers do not want to take the risk of delays in their goods' release due to inadvertent mistakes in the customs declaration or incomplete information or whatever tiny wrongs that customs authorities can find. Customs procedures expertise, not to mention network and connection, apparently fill the gap that the single window system cannot solve.

Transfer services

In certain border crossing such as Laredo (Texas, US) – Nuevo Laredo (Tamaulipas, Mexico), transfer services are mandatory to move goods from the Mexican side of the border to the US side and vice versa at a rate of USD120 per truck. Historically, the long wait experienced by truck drivers (up to 8 hours) to clear the customs motivated the establishment of this service. Mexican or American drivers would hand their cargo (through the change in truck heads described previously) over to the service providers, who would then wait in line until the trucks are on the other side of the border. With improvements in infrastructure, the wait is now relatively shorter and there is supposedly no more economic reason to use transfer services. However, the transfer service providers union, understandably, prefer the status quo in which they have monopoly moving trucks within the customs area, thus creating an additional logistics cost.

The way forward

In contrast to the other manufacturing case studies, this case study is about the perspectives of a services firm that supplies services to manufacturing value chains. The complexity of many global value chains as well as the preoccupation about minimizing cost have created opportunities for services companies that can provide cheaper value added services alternative to manufacturing in-house provision of many services. The integrated logistics company in this case acts almost like a 'jack of all trades', providing services ranging from the traditional services such as transportation and customs brokering, to less traditional services like inventory management, re-packaging and re-labelling, repairs, and ad-hoc services like software installations.

The firm has anticipated the liberalizing trend in Mexico by partnering with erstwhile competitors to be able to compete better with global logistics companies that would eventually have freer rein in the Mexican market. Indeed, policies like port management liberalization had impacted it for the good; at the same time, some policies (like the mandatory use of transfer services in certain customs area) help make their cost higher. Moreover, the fact that the case study firm is a domestic firm operating in its own economy validates the view that improved policies and better business environment will not only benefit foreign firms but also, and in the first place, domestic firms.

⁷ For more information on the single windows system, please refer to:
http://export.gov/mexico/static/VentanillaUnica_Latest_eg_mx_050491.pdf.

Appendix A

Table A.1. Pre-manufacturing stage including sourcing and importation of raw materials

Service	Corresponding CPC Ver. 2 Code	Utilized or provided services 1/	In-house	Outsourced to affiliated companies	Outsourced to third-party suppliers/ government and reasons	Bundled	
1	Supply chain consultancy services	83116 – Supply chain and other management consulting services	Provided	Yes	No	No	n/a
2	Supply chain management services	83116 – Supply chain and other management consulting services	Provided	Yes	No	No	n/a
3	Procurement services	83116 – Supply chain and other management consulting services	Provided	Yes	No	No	n/a
4	Transport services of raw materials	651 – Land transport services of freight	Provided	Yes	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
		652 – Water transport services of freight	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
		6531 – Air transport services of freight	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
		67910 – Freight transport agency services and other freight transport services	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
5	Freight insurance of raw materials	71333 – Freight insurance services	Provided	No	No	Yes, efficiency; economies of scale	n/a
6	Training services	92919 – Other education and training services, n.e.c.	Provided/ Utilized	Yes	No	Yes, lack of expertise	n/a
7	Storage and warehousing services of raw materials	67290 – Other storage and warehousing services	Provided	Yes	No	Yes, absence in certain cities	n/a
8		67110 – Container handling services	Provided	Yes	No	No	n/a

Services in Global Value Chains: Manufacturing-Related Services

	Customs clearance services and logistics of raw materials	85999 – Other support services n.e.c.	Provided	Yes	No	No	n/a
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Note: 1/ In this table and subsequent ones, ‘Provided ‘ means that the case study firm supplies the service; ‘Utilized’ means that the firm consumes or uses the service for its own operations.

Table A.2. Manufacturing stage

Service		Corresponding CPC Ver. 2 Code	Utilized or provided services	In-house	Outsourced to affiliated companies	Outsourced to third-party suppliers/ government and reasons	Bundled
9	Inventory management services	83116 – Supply chain and other management consulting services	Provided	Yes	No	No	n/a

Table A.3. Post-manufacturing stage

Service		Corresponding CPC Ver. 2 Code	Utilized or provided services	In-house	Outsourced to affiliated companies	Outsourced to third-party suppliers/ government and reasons	Bundled
10	Warehousing services for products	67290 – Other storage and warehousing services	Provided	Yes	No	Yes, absence in certain cities	n/a
11	Product testing services	8344 – Technical testing and analysis services	Provided	Yes	No	No	n/a
12	Labelling services	89121 – Printing services	Provided	Yes	No	Yes, efficiency; lack of expertise	n/a
13	Training services	92919 – Other education and training services, n.e.c.	Utilized	Yes	No	Yes, lack of expertise	n/a
14	Software installation services	87332 – Installation services of personal computers and peripheral equipment	Provided	Yes	No	No	n/a
15	Packaging/re-packaging services	85400 – Packaging services	Provided	Yes	No	No	n/a
16	Customs clearance services and logistics of parts and products	67110 – Container handling services	Provided	Yes	No	No	n/a
		85999 – Other support services n.e.c.	Provided	Yes	No	No	n/a
17	Transport services of parts and products	651 – Land transport services of freight	Provided	Yes	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
		652 – Water transport services of freight	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
		6531 – Air transport services of freight	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the

							logistics agreement
		67910 – Freight transport agency services and other freight transport services	Provided	No	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
18	Freight insurance of products	71333 – Freight insurance services	Provided	No	No	Yes, efficiency; economies of scale	n/a

Table A.4. After-sales services

Service		Corresponding CPC Ver. 2 Code	Utilized or provided services	In-house	Outsourced to affiliated companies	Outsourced to third-party suppliers/ government and reasons	Bundled
19	Collection and re-delivery services	651 – Land transport services of freight	Provided	Yes	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
20	Software installation services	87332 – Installation services of personal computers and peripheral equipment	Provided	Yes	No	No	n/a

Table A.5. Business processes (Back-office support)

Service	Corresponding CPC Ver. 2 Code	Utilized or provided services	In-house	Outsourced to affiliated companies	Outsourced to third-party suppliers/ government and reasons	Bundled	
21	Company registration and licensing services (obtaining permit to operate)	91138 – Public administrative services related to general economic, commercial and labour affairs	Utilized	Yes	No	Yes, lack of expertise; strong relationship with government agencies; government services	n/a
22	Government licensing and inspections on fire prevention, health hazards, environmental protection and other aspects	91134 – Public administrative services related to transport and communications	Utilized	Yes	No	Yes, lack of expertise; strong relationship with government agencies; government services	n/a
		91290 – Public administrative services related to other public order and safety affairs	Utilized	Yes	No	Yes, lack of expertise; strong relationship with government agencies; government services	n/a
23	Headquarter services	83118 – Head office services	Utilized	Yes	Yes	No	n/a
24	Management services	83111 – Strategic management consulting services	Utilized	Yes	No	No	n/a
25	Accounting, auditing and bookkeeping services	82210 – Financial auditing services	Utilized	No	No	Yes, required by laws and regulations	n/a
		8222 – Accounting and bookkeeping services	Utilized	Yes	No	No	n/a
26	Financial services	71121 – Deposit services to corporate and institutional depositors	Utilized	No	No	Yes, not possible to supply in-house	n/a
		71140 – Financial leasing services	Utilized	No	No	Yes, not possible to supply in-house	n/a
		71313 – Group pension services	Utilized	No	No	Yes, not possible to supply in-house	n/a
		83112 – Financial management consulting services	Utilized	No	No	Yes, not possible to supply in-house	n/a

Services in Global Value Chains: Manufacturing-Related Services

27	Legal services	82120 – Legal advisory and representation services concerning other fields of law	Utilized	No	No	Yes, lack of expertise	n/a
		82130 – Legal documentation and certification services	Utilized	No	No	Yes, lack of expertise	n/a
28	Insurance services (commercial life and accident/health insurance, property insurance for the factory compound, product quality insurance, management liability insurance)	7131 – Life insurance and pension services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
		7132 – Accident and health insurance services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
		71331 – Motor vehicle insurance services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
		71332 – Marine, aviation, and other transport insurance services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
		71334 – Other property insurance services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
		71335 – General liability insurance services	Utilized	No	No	Yes, better portfolio; not possible to supply in-house	n/a
29	Human resources services	91320 – Administrative services related to government employee pension schemes; old-age disability or survivors' benefit schemes, other than for government employees	Utilized	Yes	No	Yes, lack of expertise	n/a
		8511 – Personnel search and referral services	Utilized	Yes	No	Yes, efficiency; network economies	n/a
		8512 – Labour supply services	Utilized	Yes	No	Yes, efficiency; network economies	n/a

		83113 – Human resources management consulting services	Utilized	Yes	No	No	n/a
30	Corporate communications and public relationship	83121 – Public relations services	Utilized	Yes	No	No	n/a
31	Courier, postal and local delivery services	681 – Postal and courier services	Utilized	No	No	Yes, not possible to supply in-house	n/a
32	Information technology services including for remote monitoring and visibility of freights and stocks	8313 – Information technology (IT) consulting and support services	Utilized	Yes	No	Yes, lack of expertise	n/a
		8314 – Information technology (IT) design and development services	Utilized	Yes	No	Yes, lack of expertise	n/a
		83151 – Website hosting services	Utilized	Yes	No	Yes, lack of expertise	n/a
		8316 – IT infrastructure and network management services	Utilized	Yes	No	Yes, lack of expertise	n/a
33	Telephone-based support services	85931 – Telephone call centre services	Provided	Yes	No	No	n/a
34	Telecommunication services	841 – Telephony and other telecommunications services	Utilized	No	No	Yes, not possible to supply in-house	n/a
		84210 – Internet backbone services	Utilized	No	No	Yes, not possible to supply in-house	n/a
		8422 – Internet access services	Utilized	No	No	Yes, not possible to supply in-house	n/a
35	Maintenance and repair of transport vehicles	8714 – Maintenance and repair of transport machinery and equipment	Utilized	Yes	No	Yes, efficiency; economies of scale	Bundled as part of the logistics agreement
36	Property management services for firm	72212 – Non-residential property management services on a fee or contract basis	Utilized	No	No	Yes, efficiency; economies of scale	n/a
37	Leasing services	72112 – Rental or leasing services involving own or leased non-residential property	Utilized	No	No	Yes, efficiency; economies of scale	n/a
		660 – Rental services of transport vehicles with operators	Utilized	No	No	Yes, efficiency; economies of scale	n/a

Services in Global Value Chains: Manufacturing-Related Services

		7311 – Leasing or rental services concerning transport equipment without operator	Utilized	No	No	Yes, efficiency; economies of scale	n/a
38	Security services	85230 – Security systems services	Utilized	No	No	Yes, lack of expertise	n/a
		85250 – Guard services	Utilized	No	No	Yes, lack of expertise	n/a
39	Cleaning services	853 – Cleaning services	Utilized	No	No	Yes, lack of expertise	n/a
40	Utilities (electricity, gas and water supply)	691 – Electricity and gas distribution (on own account)	Utilized	No	No	Yes, not possible to supply in-house	n/a
		692 – Water distribution (on own account)	Utilized	No	No	Yes, not possible to supply in-house	n/a

Appendix B

Policies affecting services in the value chain

Government policies/services	Authority(ies) in charge	Details	How the policy affects services in the value chain
State of security in parts of Mexico	Various law enforcement agencies	The security situations in certain parts of Mexico raises the probability that trucks may be attacked and goods/freights stolen during transportation.	Firm representatives shared that concerns over security could add to the cost of logistics by approximately 6 percent of freight value. The increase in cost is attributed to extra insurance and additional measures in the form of live tracking of trucks and freights and if necessary, armed escorts and armoured trucks.
Single windows	Servicio de Administración Tributaria (SAT) Secretaría de Economía	Single windows initiative facilitates customs clearance process by establishing a single-stop shop where users could obtain all the required permits for imports. However, despite the implementation, users of single windows face challenges such as getting their goods held at the customs because of wrong declaration, incomplete submission of forms, etc.	Although an alternative to firms, operationalization of single windows indicate that it is still not a good substitute for customs brokerage services. It may end up increasing the cost and time to clear goods at the customs because firms would begin by using single windows only to obtain the services of customs brokerage halfway.
Transfer services in certain US-Mexico border		Transfer services are provided to move goods from the Mexican side of the border to the US side and vice versa at a rate of USD120 per truck. These transfer services were originally established with the intent to facilitate the long wait at the border, which could stretch up to 8 hours. Truck drivers would hand over their trucks over to the service providers, which would then wait in line until the trucks were safely on the other side of the border. However, improvements in infrastructure have made the	The transfer services raises the logistics cost to the firm.

Services in Global Value Chains: Manufacturing-Related Services

		transfer services obsolete and only serve to extract economic rents from users.	
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Source: Authors' own understanding of firm's value chain

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