THE E-BUSINESS POLICY OF GLOBAL LOGISTICS MANAGEMENT FOR MANUFACTURING

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ABSTRACT

Taiwan is famous for its "manufacturing flexibility" all over the world. It has constructed a complete physical supply chain system. In the past ten years, Taiwanese enterprises have transformed from business-oriented to consumer-oriented and have developed internet technology applications. In order to face the rapidly changing business environment, Taiwan government has promoted many business to business (B2B) e-Business projects in different industries. On the other hand, in view of the trend of internationalization and globalization, global logistics management (GLM) becomes a key issue for Taiwan. Another important factor to consider is Taiwan's open economic characteristics is like its geography surrounded by the seas. Therefore, based on these core benefits and capabilities, Taiwan's industries will lift its global competitiveness through optimal e-Business of GLM (e-GLM). For the scope and process of GLM are complex, they involve domestic and overseas business transactions between the supplier and the customer, and require coordinating many business activities from R&D, order, procurement, production, inventory control to distribution. To achieve the optimization of global logistics operations, it needs to carefully estim1ate the inputs of the action project like resources, information, etc. However, in Taiwan industry and academic research, the GLM model is still in a premature stage. This paper is based on literature, the features of supply-demand in manufacturing, industrial policy, and information technology (IT) application strategy, treating two separate types of manufacturing: the "divergence" and the "convergence". We have pointed out their respective industrial attributes and critical bottlenecks of e-GLM. On the other hand, it combines the concept of production (make) type and "check index", which are followed the SCOR model and value chain theory. At last we referred to the optimal e-Business policy contents of GLM for manufacturing.

Keywords: Global Logistics Management (GLM), Supply Chain Management (SCM), Operation Headquarter, e-Business, Manufacturing

1. INTRODUCTION

In the past ten years, Taiwanese enterprises have been facing a rapidly changing environment. This transformation was brought about by both the pressure to take on an international and global outlook, as well as the increase to apply more IT technologies. Moreover, WTO has made Taiwan open its markets to the fullest extent. This has totally changed how enterprises conducted their business and how they cooperated with partners. These are the reasons why Taiwan's manufacturing sector is moving toward a multi-national, collaborative model. The industrial collaboration has been transformed from a vertical, specialized division of labor to a more horizontal, open one. In fact, the cost and quality are always keys to business survival; speed, flexibility and innovation are the factors of an enterprise's competitiveness. Only these business entities that can respond quickly to market needs can survive in today's business environment.

An e-Business model can meet the new market requirements and provide proper solutions to help business secure their competitiveness. It helps enterprises seize digital opportunities to maintain or enhance their competitive edges. Through electronic interactions, it not only saves procurement time and costs effectively, but also improves customized services and increases customer satisfaction dramatically. Altogether, Taiwan's open economic characteristics are just like its geography –

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surrounded by the seas. Taiwan's industry, based on its current core capability and GLM, will become the weapon to lift its global competitiveness.

In the past ten years, Taiwan has been promoting B2B, business to consumer (B2C) and business to government (B2G) e-Business in several industries, as shown in Figure 1, and has also built a mature industrial supply chain system. The department of industrial technology (DoIT) and the industrial development bureau (IDB) of the ministry of economic affairs (MOEA) assisted at least 70 manufacturing B2B e-Business systems of SCM. There are more than 10,000 small middle enterprises (SME) now linked together to meet critical business needs and to increase many e-Business applications in Taiwan's domestic and international supply chains.

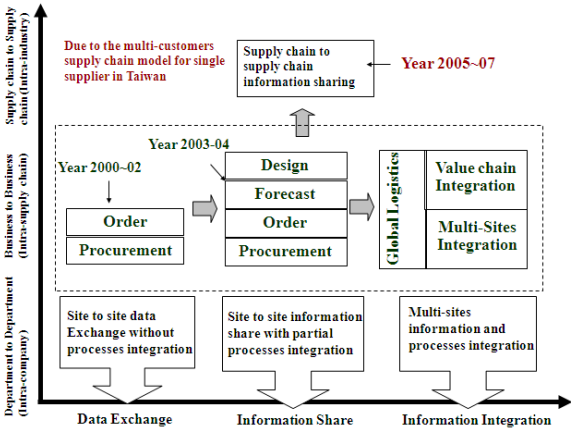

Figure1: Roadmaps and promoting strategies for Taiwan's manufacturing e-Business development [35]

As shown in Figure 1, an enterprise's operational activities include intra-enterprise phase, partner and intra-supply chain system phase, and a cross-system, cross-industry phase. The degree of integration includes the stage of multi-point information exchange but not yet at the workflow level, the stage where information is exchanged and shared, including the part of workflow management, and finally the stage where the information is fully integrated that includes both multi-point exchange and workflow management to form the best operational system. Based on these two dimensions, the supply chain first needs to adopt e-Business applications from e-contents, order management and procurement management to R&D and inventory forecasting. It then can extend to a multi-point division of labor and an integrated value-chain global operation.

These projects focus on promoting and strengthening Taiwan's supply chain systems, and on accelerating the adoption of e-Business applications. It encourages Taiwan's major manufacturers to work with their up-stream and down-stream partners in the supply chain to build an integrated e-Business operation system.

The goal is to cultivate a few model systems applications to supply the industry's knowledge within the next few years. Through successful promotion, we hope to persuade and help other industries in Taiwan to adopt e-Business. Obviously, Taiwan's manufacturers can apply IT technology to enhance supply chain management. Based on these robust supply chain systems, they can collaboratively exchange supply-side and demand-side information through e-Business management systems. That exchange is related to many value chain activities such as procurement, quality control, inventory, forecasting. In all, these e-Business applications generate, from 2002 to 2006, over 7 billion (TWD) worth of benefits for Taiwan's industries.

Taiwan's manufacturing supply chain e-Business projects applications include order management, procurement management, R&D and collaborative management. However, these programs only apply e-Business in domestic supply chains and focus on simple value chain activities. In the face of an era of globally-driven, rapidly development trend of international operation, Taiwan's industry must promote advanced e-Business applications for GLM as her important policy. In the future, based on successful domestic e-Business program experience, Taiwan's industry can enhance procurement, R&D, logistics and finance through e-GLM policy that will increase its global competitiveness.

Altogether, the core concept of e-business model is around the business value, and concerns how the value is created, interpreted and exchanged among multi-party stakeholders across value chain. But for e-GLM, it is more about enhancing information integration (as shown in Figure 1) and it involves widely ranged supply sides and demand sides, as well as their business activities across different countries. So, it is more complex and difficult than what a narrow or simple e–Business model concerns about. Nevertheless, according to Taiwan's industry [36] and academic research, the e-Business of GLM model is still in the premature stage. Based on industry policy and strategy for IT application aspects, the purpose of this study refers to a reference e-Business of global logistics model through analysis by industry type, industry attribute, production type and bottleneck of e-Business. With this research, we expect to promote performance of GLM effectively in the following areas:

1. To identify the assignment of head office and each subsidiary company.
2. To enhance the collaborative management across head office and subsidiary companies.
3. To promote the function of the information flows, logistic flow, financial flow, and IT system.
4. To help set up headquarter or war room function and KPI controls through e-Business policy.

2. LITERATURE REVIEW

2.1 Global Logistics Management

GLM has evolved from logistics management [11]. According to the definition by the Council of Logistics Management [33,34], USA, Logistics management is "part of SCM that plans, implements, and controls the efficient, effective forward and reversal flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements". Logistics management differs from logistics in that the former is more of the high level business activities than the latter. According to Slats' research [26], logistics management is divided into three different chains: supply chain, manufacture chain, and distribution chain. The supply chain's activities are making and distributing supply with raw materials, components and products. The manufacture chain's activities are making products. And the distribution chain's activities are after service and maintaining. Because of globalization, many enterprises move to internationalization, making arrangements between its production facilities and distribution centers, with the hope of managing, planning and bringing closer together the needs of their customers and their own manufacturing [8]. In order to allocate global resources of the enterprise, GLM should take a consumer-oriented and flexibly adjust some operations of the business flow [18]. Since 1980, global competitions have been increasing and product life cycles becoming shorter than in the past. Its key business activities has changed and extended. Rudberg and Olhager [25] examined two research areas based on two structural decision categories in an operations strategy: the facilities and vertical integration. They also presented a typology for the analysis of network systems resulting in four basic network configurations. Ho [12] highlighted major weaknesses of the extant literature with respect to the conceptualization, operation, and modeling of SCM models. They developed SCM models based on a context-practices-performance framework [12]. Cigolini [6] proposed a conceptual framework for SCM strategies and introduced a set of corresponding management techniques and tools. Chen and Paulraja [5] pointed out the origins of SCM from a series of fields including purchasing, logistics, operations, organization, information systems and strategic management. Li, et al. [17] conceptualized and validated six dimensions of SCM practices including strategic supplier partnership, customer relationship, information sharing, information quality, internal lean practices and postponement. There are many difficult problems of GLM or global SCM like market needs, forecasting of raw material amount, product design and abnormal order events. These factors cause a company high loading of inventory, delay in delivery and long lead time. In order to reduce forecasting risk, it is necessary to consider the complete scope of SCM such as the supplier's supply capability of raw materials, factory's manufacture and warehouse's maintenance, distribution and service [7]. Procurement is the most important of global sourcing strategies and it must focus on reducing cost of procurement [16]. Manufacture logistics is concerned with the facility and equipment operation. In order to keep the supply smooth, better capacity management and factory management, the production planning and/or advanced planning and scheduling (APS) become an important issue in manufacture logistics [14]. Distributions logistics focuses on reduce delivery cost. Its decision-making items include: distribution center number, location, delivery type, delivery target (area, customer…etc) [2]. Arntzen [2]also reported many factors for planning global logistics projects including customer's locations, supplier's locations, employee's salary and skill, raw material acquisition model (with principle, time and distance), delivery model (with cost and time), seaport tax law, trade and revenue.

According to industry development and academic research field, in order to improve business competition and benefit, it is necessary to build optimal global logistics that gets better results of inventory turnover, available to promise (ATP) and time to market.

2.2 Global Logistics Strategy and e-Business

There are many studies related to GLM in the academic field. Ferdows [10] referred to six alignments of GLM that include offshore factory, source factory, service factory, lead factory, distribution factory and outpost factory. Collaborative management of e-Business system is an important operation for information exchanging. There are two types of collaborative management: general and multi-tiers. The general collaborative type deals with procurement vs. manufacture, manufacture vs. distribution collaboration and inventory vs. distribution. The multi-tiers collaborative type deals with many activities of e-Business systems [3]. Distribution logistics of GLM contains four sections [22]: raw material/component supply, inbound /outbound logistic and assembly. In fact, the benefit of global logistics need widely concerned strategy, process, integration, alliance, IT system and operation performance [9]. Generally, to build GLM e-Business concerns cycle time speed, productivity, reaching new customers and sharing knowledge across institutions for the competitive advantage.

The core competencies required for successful global operations relate to skill development and

development of special virtual assets within a dynamic yet consistent view of the global market held by these businesses [31]. The development of IT strategy and system is growing every year. On the other hand, the extent of contribution from the infrastructure depends on information intensity in the business value chain [21, 31]. It derives from four related factors: nature of partnerships, internal arrangements, nature of market or industry and the product offerings. In recent years, the e-Business applications of SCM have matured. There are nine global information system (GIS) development strategies: development with a multinational design team, parallel development, central development, core versus local development, best-in-firm software adoption, outsourced custom development, unmodified package software acquisition, modified package software acquisition and joint development with vendor. Meixel [19] also reported e-Business contents of global supply chain, including information flow, logistics flow, finance flow as well as applications like vendor managed inventory (VMI), collaborative planning, forecasting, and replenishment (CPFR) and APS. Besides, XML-based data exchange model of e-Business is also a key issue for global operation [13]. Briefly, global operation has extended from domestic supply chain to the global market. Their transactions of business are running from domestic to overseas between supplier and customer. The scope and process of GLM involve widespread activities including R&D, order, procurement, production, inventory control and distribution. In order to achieve optimal operation for these wide activities, they need an e-Business strategy with IT system (such as manufacturing execution system (MES), enterprise resource planning (ERP), product data management (PDM), SCM, etc.) and decision system (such as decision support system (DSS), business intelligence (BI), etc.).

3. APPLICATIONS OF E-BUSINESS IN TAIWAN

3.1 Industry Chain and e-Business

Taiwan has constructed a complete physical supply chain system from the upstream (raw material side or supply side) to the downstream (demand side). Based on this complete industry chain, Taiwanese enterprises have enhanced many IT applications and electronic commerce systems as a result of facing a rapidly changing environment and globalization. Taiwan government has assisted many B2B e-Business programs to improve industrial competitiveness. According to the e-Business White Paper on Taiwan's NICI and e-Business projects information [35, 36], there are over 70 manufacturing build supply chain B2B e-Business systems through government programs. Gradually, more and more companies have operated smoothly by these projects in the past ten years.

These B2B e-Business systems distribute up-stream (or supply side) and down-stream (or demand side). The up-stream applications include e-Procurement, PDM, collaborative production commerce (CPC), product lifecycle management (PLM), VMI, e-Logistic, e-Factor, APS and e-Forecast like. The down-stream applications include e-Catalog, customer relationship management (CRM), e-Service, e-Procurement, e-VMI, e-Shipment, e-hub, e-Inventory, e-Financing, e-Payment, CPFR, APS, e-Forecast and e-Sale. They are shown in Figure 2 and Figure 3.

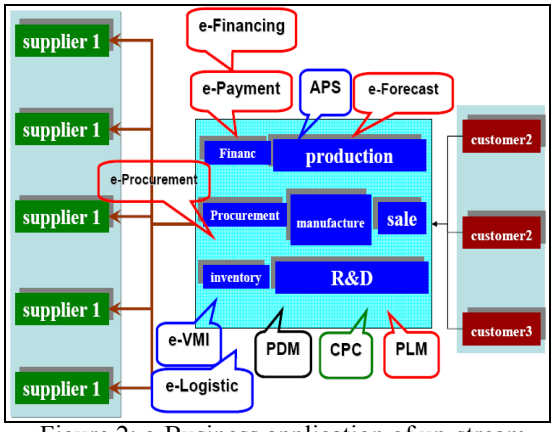

Figure 2: e-Business application of up-stream industries in Taiwan [36]

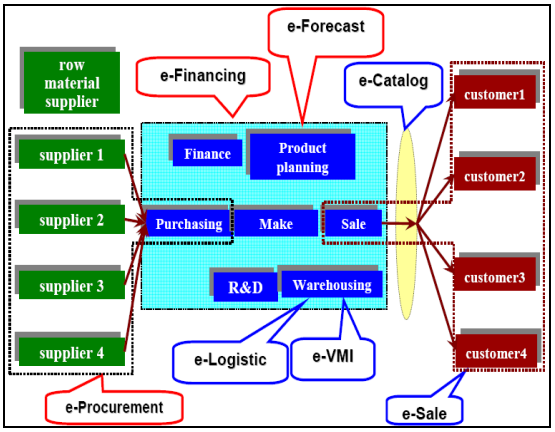

Figure 3: e-Business application of down-stream industries in Taiwan [36]

According to the Institute for Information Industry (III), a non-governmental organization jointly sponsored by Taiwan government her research of Taiwan's industries development in IT applications is shown in Figure 4 & 5. In Figure 4, appreciably, IT applications, such as ERP, CRM, etc., have been increasing in Taiwan. BI particularly has also grown year by year. In other words, the e-Business of GLM is a very important policy for industry development in Taiwan.

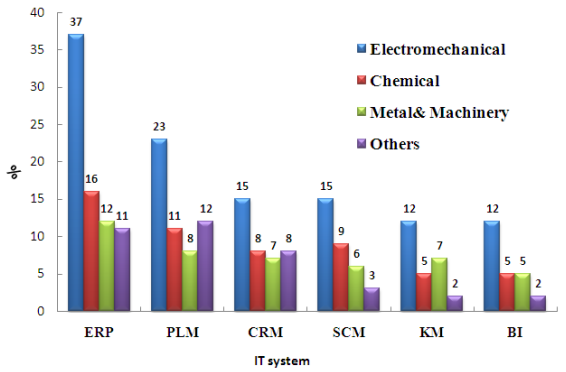

Figure 4: IT applications system of industries in Taiwan (2006)
Source: ACI-FIND, III (Sponsored by IDB, MOEA), Taiwan

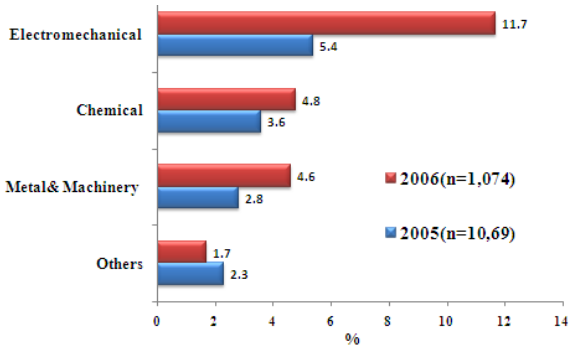

Figure 5: BI system application of industries in Taiwan (2006)
Source: ACI-FIND, III (Sponsored by IDB, MOEA), Taiwan

3.2 GLM e-Business and Industry Type in Taiwan

Taiwan's manufacturing is good at "flexibility" and is famous for it all over the world. Taiwan has constructed a complete physical supply chain system. Furthermore, the MOEA has been promoting supply chain B2B e-Business programs in the past ten years. Today, because of the development trend of globalization, to plan e-Business of GLM is a key issue to Taiwan's industry. However, the process of GLM e-Business is similar to e-SCM in the domestic sectors. Moreover, GLM e-Business has to consider other factors such as industry types, attributes, and e-Business bottlenecks. Firstly, we should consider these factors in constructing the e-Business of GLM.

In this research, we have focused on the industrial scope as shown in Figure 6 [35][36]. IDB pointed out the specific items (industries), in Figure 6, are the priority in implementing an e-business program. These specific items or industries are based on the "e-industry policy" for the manufacture of Taiwan [36]. In other word, IDB promoted industries to built e-business program is depended on the requests for the degrees of E-business and competition for the manufacture. In addition, they are going to promote e-business program for others industries in next stage. According to these priority industries and industry attributes, we can more effectively analyze the e-Business model of GLM for Taiwan's industries.

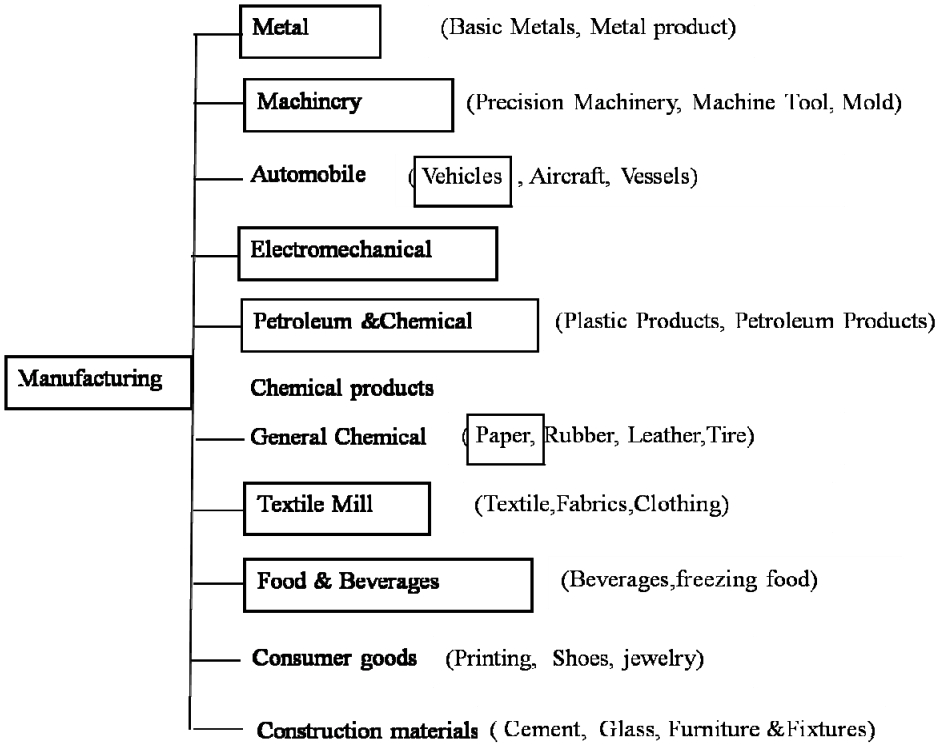

Figure 6: Taiwan's manufacturing e-Business scope
Source: IDB, MOEA, Taiwan (2005)

Lin et al. [27] referred to three types of supply chains. In the convergent supply chains type the suppliers supply varieties and multi-functions of the products. The divergent late-differentiation type is to assemble the product while the enterprise accepts customer orders, then delivering the product to the customer. In other words, the make type of divergent late-differentiation is assembly to order. And the divergent early-assembly type focuses much more on information than the divergent late-differentiation. These supply chain types are classified according to supply chain network structure (network level, members, type), operation form, and goal (make process, enterprise goal, production model, product life cycle and inventory policy).

In this research, we divided Taiwan's industries into two types: divergent type and convergent type, as shown in Figure 7. The logic of the dividing principle follows Taiwan's industry development policy and refers to Lin & Shaw's study. With this, we analyzed and identified e-Business policy of GLM. The divergent industry includes textile, plastic products, petroleum products, paper, rubber, plat steel, bars steel, stainless plate steel, and special bars steel. The convergent industry includes PC assembly, network equipment, communication equipment, electromechanical assembly, vehicles assembly, machinery assembly, food & beverages, printing & publishers, consumer good and clothing. Other industries are distributed between divergence industry type and convergence industry type.

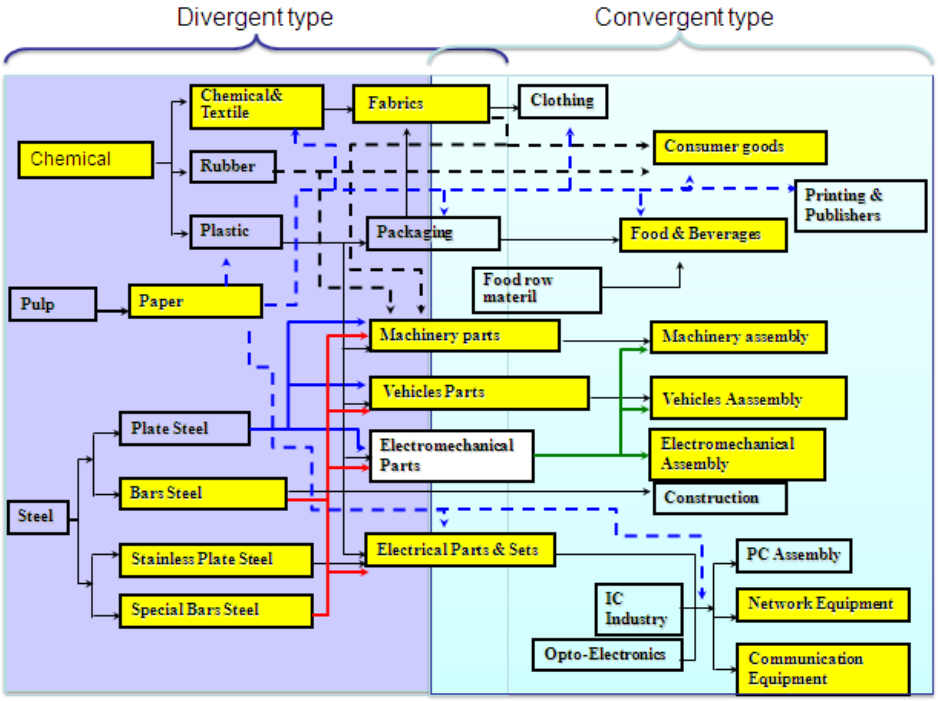

Figure 7: The two manufacturing types and supply-demand relations in Taiwan

4. TAIWAIN INDUSTRY E-BUSINESS MODEL FOR GLOBAL LOGISTICS MANAGEMENT

4.1 Divergent Industry Attributes and the Bottlenecks of e-GLM

4.1.1 Divergent Industrial Attributes

The divergent industry distributes over the up-stream or supply-side, and deals with a variety of industries of the down-stream or demand-side. It supplies a broad market at a large quantity. Sometimes the bargaining power of the divergent industry is equivalent to the customer of the down-stream industry. Divergent type owns a stable market and partners. It operates at a slower pace, and it has a longer product life cycle.

Moreover, divergent industry has a simple structure. The business pressure comes from the down-stream. Since the production model of divergent industry is usually Make-to-Stock (MTS) or Build-to-Stock (BTS), so it must have a good grasp of the demand of the down-stream (about raw materials or parts). Based on these forecasts, they can have a better "heijunka" management to keep supply smooth.

A divergent industry cares more about product quality, material cost control and inventory management. Besides, better warehouse and logistics maintenance are keys to reducing operation cost.

4.1.2 The Bottlenecks of e-GLM

The divergent industry's e-Business bottlenecks in GLM are to keep closer business relationship, to have a better capacity plan, and to satisfy customer's needs. The enterprise should have a good e-Business system and sustain sufficient supply to down-stream and achieve a better global capacity utilization rate.

4.2 Convergent Industry Attributes and the Bottlenecks of e-GLM

4.2.1 Convergent Industrial Attribute

Convergent industry distributes over the down-stream or demand side and they are composed of good products or semi-products. The convergent industry has a more complex structure than the divergent industry. The business pressure comes from both (up and down) streams. They should satisfy customer's needs with better service level and ATP available to promise). Besides, they must have a good grasp of the information regarding the supplier's component/parts status.

The convergent industry's make type usually is MTS (or BTS) and Make-to-Order (MTO) or Built-to-Order (BTO). To select a given make type depends upon the needs of GLM. The bargaining power of a convergent industry is over suppliers but driven by customers. The convergent industry has a broad market which deals with up and down streams. It operates at a faster pace, and it has a short product life cycle.

4.2.2 The Bottlenecks of e-GLM

The convergent industry should keep better inventory management to satisfy customer's needs, or else it would result in insufficient or overflow inventory for global needs. Additionally, they should hold better material management and enough components or key-parts, or else it would result in an increase of material resource and operation cost.

4.3 Summary: The Industrial Attribute and Bottleneck list of e-GLM for Manufacturing

According to prior analysis for manufacturing features, which involve up-stream and down-stream industries (of divergent type and convergent type) and its bottlenecks while building e-Business for GLM, and based on these concepts, we've listed industrial types with its respective attributes and e-Business bottlenecks in Table 1.

Table 1: Taiwan's manufacturing bottlenecks of e-GLM

Industry Type	Industrial Attributes	Global Logistics e-Business Bottlenecks
Divergence	● These industries are widely distributed over the upper stream or supply side. ● Supply various enterprises of the down-stream as well as broad market. ● Somehow a little firm's business bargaining power is more influential that of their customer. ● A stable market side or partners ● A lower business change speed than the convergent type. ● A lower complex variations in its industrial attributes ● Business operative pressure is driven by down-stream. ● Majority of the production type is MTS or BTS ● Operation point: capacity, warehouse and logistics.	✧ Should keep closer business relationship with partners to avoid insufficient supply and lower capacity utilization rate. ✧ Should keep better capacity management of facilities in order to satisfy customers' needs.
Convergence	● These industries are widely distributed over the down-stream or supply side ● Composed of good products or semi-products ● Enterprise have bargaining power over but driven by customer ● Multi-type industries and large competitive markets ● A faster business change speed than the divergent type ● A shorter product life cycle ● Highly dynamic industry. ● Business operative pressure is driven by upper and down-stream. ● Make type: MTS, MTO and mix both. ● Operation point: supply capability, key components and material management.	✧ Should keep better inventory management to fulfill customer's needs to avoid resulting in insufficient or overflow inventory for global needs. ✧ Should have implement better material management and enough components or key parts to avoid resulting in material resource and operation cost increment.

4.4 Taiwan's Industry Global Logistics e-Business Strategy

The key point of enterprise e-Business is to focus on innovation of the business model. According to the supply-chain operations reference-model (SCOR)* [33] and value chain aspects, the factory's "maker" ability is a key factor for a business model. Because of this, enterprises building their optimal GLM e-Business models have to consider not only the industry type (divergence or convergence) but also the production type. In order to achieve an optimal e-GLM model, we can apply a "check index" to effectively measure the performance of different industries and make types.

This procedure is derived from value chain and Balanced Score Card (BSC) theory. We have identified four check indexes to achieve the optimal GLM e-Business policy and contents. The strategic process can be illustrated as in Figure 8.

Combining the bottlenecks of e-GLM in Table 1 and the e-GLM strategies in Figure 8, we suggest four check indexes as shown in Table 2.

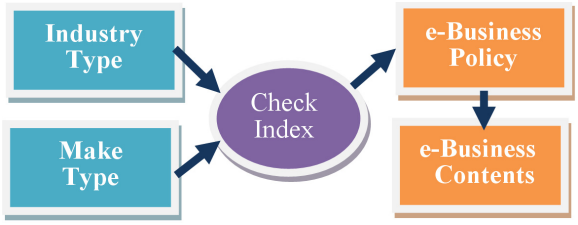

Figure 8: e-GLM strategic process

Table 2: The check index of industry type and production type

Industry type / Prod. type	Divergence	Convergence
BTS(MTS)	Global capacity utilization rate	Global inventory turnover rate
BTO(MTO)	Customer response time	Materials utilization accuracy

For the BTS-type of the divergent industry, the global customer needs are the key operation issue, so the optimal check index is "global capacity utilization rate". As for the divergent industry of a BTO-type, the most operative issue is focusing on global customer needs. So, the optimal check index is "customer response time". The BTS convergent industry's most operative issue is holding a better inventory management to satisfy customer needs. So, the optimal check index is "global inventory turnover rate". The BTO convergent industry's key operation is to hold better material demand management and to supply enough components or key parts. So, the optimal check index is "material utilization accuracy". We suggest these check indexes in Table 2.

Based on the e-GLM bottlenecks with its industry attributes in Table 1 and the e-GLM strategies in Figure 8, after choosing these "check indexes", the next step is to identify the e-GLM policy and its contents which can improve these business indexes or key performance index (KPI). For example, the BTO type of divergent industry's optimal check index is global capacity utilization rate. Therefore, its e-GLM policy has to focus on demand side management and its e-Business policy contents should include global capacity control System, global order pursuit system, global procurement system, global quality control system, global deployment management system, global make & distribution forecast, system global APS system, global product work order (WO) system, global CRM system and headquarter (or war-room) indicator control (these indicators include global capacity utilization rate and global equipment utilization rate). We follow the same process for the BTO-divergent industry, the BTS-convergent industry, and the BTO-convergent industry, respectively, to summarize the e-GLM policies and contents for the each of these industries as shown in Table 3.

5. CONCLUSION

This study builds an e-GLM reference policy based on the features of demand and supply in manufacturing, industrial policy, IT application strategy and value chain aspects. Altogether, it considers Taiwan's manufacturing development policy and refers to Lin & Shaw study in dividing manufacturing into a "divergent" type and a "convergent" type. In order to achieve an optimal e-GLM policy, we applied four check indexes to effectively measure the performance of different industries and make types. This procedure is derived from value chain and BSC theory. Finally, we listed the e-Business options of GLM for manufacturing and the relevant suggestions, as shown in table 3.

For the future studies, this model can be further improved by including optimization techniques as well as consideration of factors like: outsourcing type (such as original equipment manufacturer (OEM), original design manufacturer (ODM), own brand marketing (OBM)), industry cluster and headquarter-subsidiary.

*The supply chain operations reference (SCOR) model is a process reference model, developed by the supply-chain council as the cross-industry standard diagnostic tool for SCM.

Table 3: The e-Business policies and contents of GLM for manufacturing

Industry Type / Production Type	Divergent Type **To relieve the e-Business's bottleneck**: (1) It should keep closer business relationship with partners. (2) It should keep better capacity management of its facilities.	Convergent Type **To relieve the e-Business's bottleneck:** (1) It should keep better inventory management to fulfill customer needs. (2) It should keep better material and components management.
MTS(BTS)	●**Check Index:** Global Capacity Utilization Rate ●**e-GLM policy:** Demand Side Management ●**e-GLM Policy Contents:** - Global Capacity Control System - Global Order Pursuit System - Global Procurement System - Global Quality Control System - Global Make & Distribution Forecast System - Global APS System - Global Product Work Order (WO) Pursuit System - Global CRM System - Headquarter (War-Room) Indicator Control: ✧ *Global Capacity Utilization Rate* ✧ *Global Equipment Utilization Rate* ✧ *Others*	●**Check Index:** Global Inventory Turnover Rate ●e-GLM Policy: Supply Side Management ●e-GLM Policy Contents: - Global Supplier Relationship Management (SRM) System - Global VMI System - Global Inventory Pursuit System - Global Delivery System - Global RFID System - Headquarter (War-Room) Indicator Control: ✧ *Global Inventory Turnover Rate* ✧ *Global Inventory Cost* ✧ *Other*s
MTO(BTO)	●**Check Index:** Customer Response Time ●**e-GLM policy:** Demand Side Management ●**The Contents of e-GLM Policy:** - Global Demand Forecast System - Global Order Management System - Global Sale Information System - Global PDM System - Global CRM System - Global Total Order Management (TOM) System - Global Product Quote System - Global Capacity Utilization Rate - Headquarter (War-Room) Indicator Control: ✧ *Customer Response Time* ✧ *Forecast Accuracy* ✧ *Others*	●**Check Index:** Material Management ●**e-GLM Policy:** Supply Side Management ●**The Contents of e-GLM Policy:** - Global Material Inventory System - Global SRM System - Global Common/Special Material System - Global Online Material Analysis System - Headquarter (War-Room) Indicator Control: ✧ *Material Utilization Accuracy* ✧ *Global Material Cost* ✧ *Others*

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產業全球運籌電子化策略推動模式

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摘要

台灣製造業素以「彈性」著稱，也建立完整的供應鏈衛星體系，而近年來企業由商業導向轉變為客戶導向以及網路科技運用之發展趨勢，台灣政府已積極推動各種不同產業B2B供應鏈體系電子化應用示範案例，以因應此快速變遷的環境挑戰。此外，隨著國際化經營與全球化分工佈局發展趨勢，全球運籌營運管理對台灣產業是重點議題，相對於全球市場，台灣保有環海開放型經濟體之特色，而台灣產業基於現有核心能力，透過全球運籌營運管理，將是提升全球競爭力之利器。全球運籌管理考量的範圍與流程廣泛，包括國內與國外供應商與客戶之交易，以及集團的研發、訂單、採購、製造、庫存管控到配銷一系列各項業務活動；因此，為達到較佳的全球運籌營運，須審慎評估投入資源工具與資訊運用等行動方案，而目前國內產業及學術研究領域尚未較成熟的全球運籌電子化管理參考模式，故本研究在文獻基礎上，以產業供給與需求特性、產業政策及資訊應用策略等角度，整裡提出「收斂」及「發散」兩類型產業特質，基於此特質，本研究深入交叉參考SCOR參考模式及價值鏈方法論，得出影響電子化表現之重要因素-「生產模式」，而為獲取產業全球運籌最佳化電子化策略之取決，最終對應企業所關切之「關鍵績效指標」對應於不同的「生產模式」，建議此兩類產業全球運籌電子化策略之推動內涵。

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