Economic Globalization: The Five Basic Globalization Types

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Current economic theory gives no sufficient practical models to explain the recent economic development with respect to globalization. In fact, the economic globalization is not always the same globalization, which is recognized through the different manifestations of this phenomenon. Based on the four basic business typologies (commodities, standards, specialties, and convenience goods) a new model defines five fundamental types of economic globalization (1a, 1b, 1c, 2, and 3). Globalization Type 1 and subtypes are related to physical material interchange, Type 2 is related to financial participations and Type 3 – to the human factor. This distinction is necessary because each type has its own rational and performs differently from a globalization viewpoint. These basic globalization types help to model the triggering mechanism of their evolution and allow us to understand the competitive constellation and strategic moves of companies as well as the different latent potential for unemployment. The Basic Globalization Types distinguished by the author allows a vivid explanation of the characteristics of economic globalization when teaching.

Keywords: *business types, globalization types, foreign trade theory.*

Introduction

On the one hand, economic globalization is often viewed as an obscure process that apparently yields more profit for the companies, while increasing unemployment for the working classes. On the other hand, globalization is hardly controllable, since it is not only a process but rather a phenotypical manifestation within the causal systemic world of economy and politico-social behavior. But how can economic globalization be modelled? Many books have been written on globalization but none of them presents its integral theory. Basic concepts still go mainly back to foreign trade theory with Ricardian comparative cost advantages and Pareto optimality as well as Heckscher-Ohlin. The gravity model of Isard shows the geographic view on trade but finally did not encounter the merited success. A new view has been developed by Krugman in his *New Economic Geography*. Different business and globalization patterns are observable in different industries. On the one hand, we have the extraction of raw materials in particular geographic regions of the subtropics, or primary aluminium production in distant but low energy cost regions, and, on the other hand, semi-fabricated products manufactured near extensively industrialized regions. Cars produced in highly automated factories in urban area and exported worldwide, fast-food chains or franchised fashion stores covering the globe to conquest market share – different concepts, but the same target: the world market. Why do so many different con-

cepts exist? What are the rules governing the economic structure and the competitive system? Is it possible to give a structure to globalization in order to be modelled?

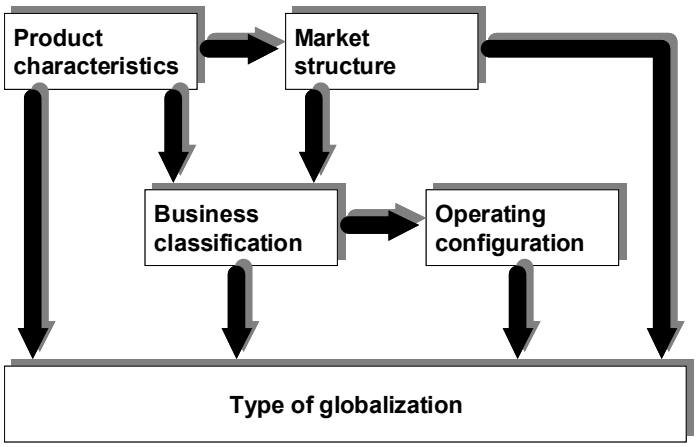
The Determinants for Globalization Type

Going beyond the usual phenomenological description of globalization, let us analyze the intrinsic logic of worldwide competition and the structure of the economic system. Our business system is mainly composed of:

- the transaction object, that is, a product or a service;
- the supply and demand structure, with the related transaction scheme;
- the operating configuration of supply (Rüttimann 2007).

The product is characterized by its attributes, for example, heavy or bulky, complex or precious, perishable or durable, and its customization degree, all these determining the transportability of the product. The transaction scheme describes how supply and demand interact determining the localization degree of the product. The market structures given by the number of market actors and relative concentration curves of supply and demand determine the competitive nature of the business. The operating configuration refers to how products are produced, at one extreme they are produced centrally within a single plant configuration and then distributed worldwide, or production facilities are spread around different geographic regions within a multi-plant configuration and products are sold locally. This leads to the induction scheme of Fig. 1 to classify first the business type and finally the globalization type. Indeed, as we will see, globalization is not always the same.

Fig. 1. Framework of globalization types determinants



As we can see in Fig. 1, it is evident that the typology of globalization is largely determined by the product characteristics. The backward determinants which influence product characteristics, market structure and determine the business classification, and finally the operating configuration, are:

- value of the product;
- transport cost and related range of distribution;
- production factors in terms of cost drivers;
- demand profile;
- supply structure (Rüttimann 2007).

The Four Basic Business Typologies

These main determinants characterize each business type within industrial system. Certain combinations of these determinants reveal clear patterns for each business type. Fig. 2 shows different businesses within the matrix of product-characteristics and market-structure which are the main drivers for business type classification (Rüttimann 2007). The representation of product-characteristics (differentiated or not) as one axis, and market-structure (oligopolistic or fragmented) as another axis within a matrix, leads finally to the following landscape of basic business types:

- commodities;
- specialties;
- standards;
- convenience.

Fig. 2. Selected businesses within the product-characteristic / market-structure matrix

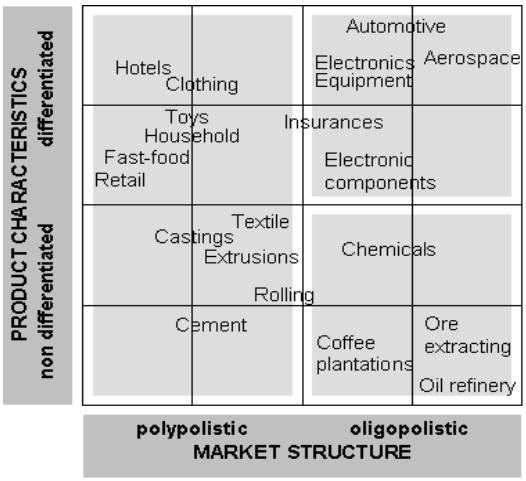


Fig. 3. Basic classification of business types

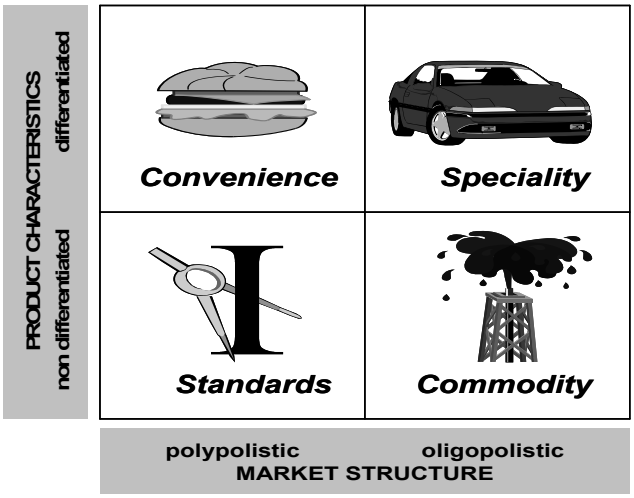


Fig. 3 presents a clear, systematic and structured view with which to classify roughly the businesses in types. It goes without saying that mixed types may exist. The 'commodity type of business' (*e.g.,* primary aluminium or wheat) comprises all kinds of goods listed on efficient market places, such as commodities exchanges with world market prices. The 'specialty type of business' (*e.g.,* electronics or automobile) embraces those durables and consumables, goods with a distinctive brand thus creating imperfect competition. The 'standards type of business' (*e.g.,* cement or extrusions) covers the intermediate or semi-finished products with a rather polypolistic supply structure. The 'convenience type of business' (*e.g.,* hotels or clothing) embraces most products of our life sold in retail stores or offered as services in a very fragmented market to reach the final demand, representing from the supply side an imperfect or monopolistic competition.

The Five Economic Globalization Types

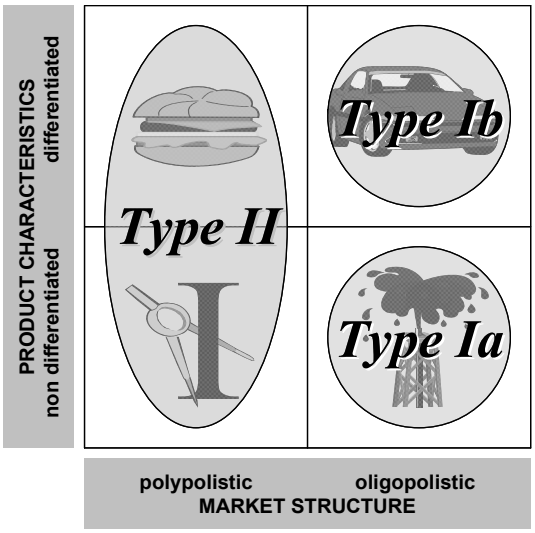
Having classified the business, the question is how globalization is influenced by each business type, or rather how globalization of the business evolves in each business type and according to which pattern. Analyzing the business types, it appears that the operating configuration determined by business is a major determinant for the globalization type. The intrinsic logic reveals two main types:

Type 1 – material (or physical) globalization for commodities and specialties;

Type 2 – immaterial (or financial) globalization for standards and convenience.

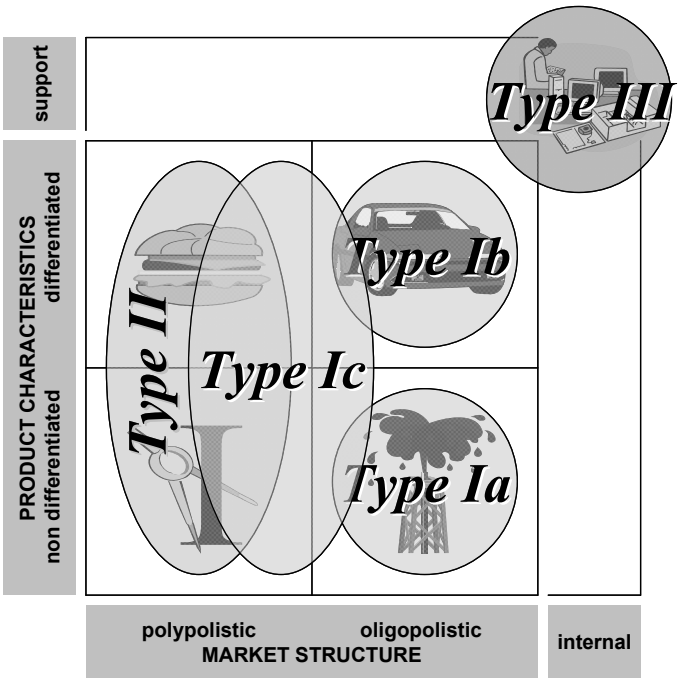
The difference between these types is substantial. Products of businesses following Type 1 globalization could be produced finally within a single plant operating configuration and shipped physically worldwide whereas products of businesses following a Type 2 globalization are produced locally for the local market. MNC (Multi National Corporations) will have in this case a network of local companies by FDI (Foreign Direct Investments) and the business idea is to exploit the know-how in doing business. In this fragmented markets they have to buy or set-up new enterprises to increase market share. But for Type 1 globalization we have to distinguish between commodities and specialties (Fig. 4).

Fig. 4. The natural types of globalization



Let us call Type 1a the 'globalization of commodities'; through the listing on efficient market places such as commodity exchanges, this represents the pure example of business globalization. This type of globalization is inevitable because its effects are spreading all over the world. For the Type 1b 'globalization of specialties' the products characteristics are unique and therefore – to some extent – the price can be fixed by the supplier taking into account the value for the customer. This is due to the possibility of product differentiation within the competitive system. For the second type of globalization the distinction into subtypes is not necessary. Indeed, in markets not accompanied by material (physical) flows of products over a certain distance they, according to Chamberlin and Robinson, represent a local monopoly governed by imperfect competition. Therefore, we need to have no distinction of globalization patterns between standards and convenience type of products. The localization of the business leads to a globalization pattern with a market share adding strategy by FDI in order to grow in businesses of such types.

Fig. 5. The globalization type matrix

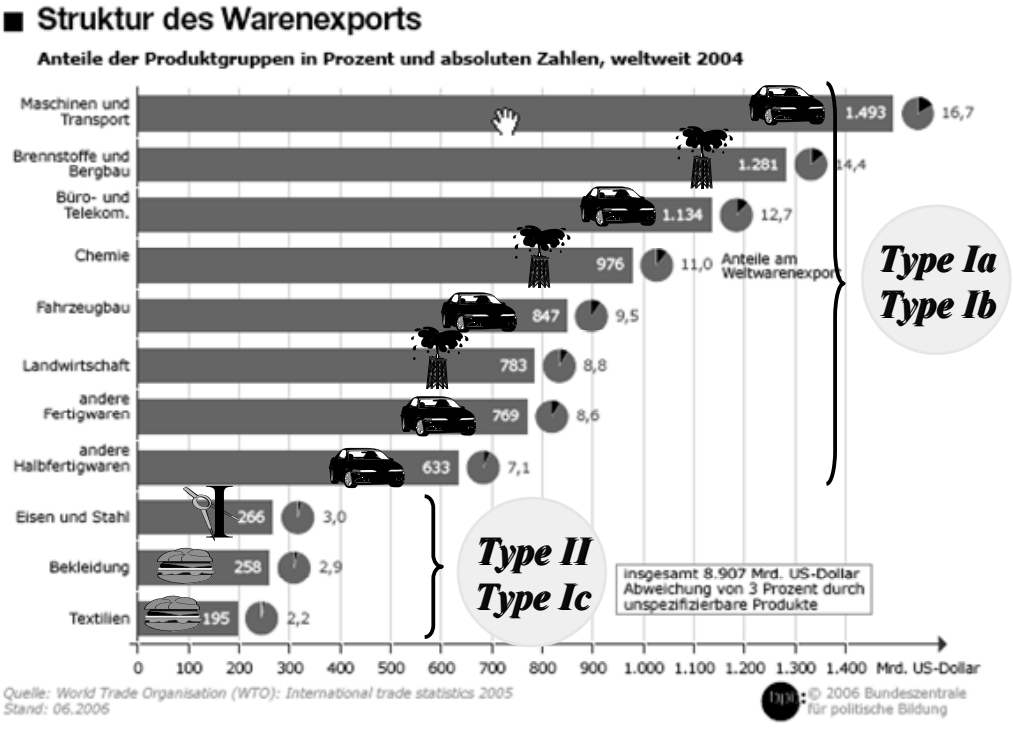


Are there any drivers able to upset this apparently stable situation? Yes, there is one. If the difference in price (intended as absolute cost advantage, according to Adam Smith) for the same goods in different economies exceeds a certain threshold, exports can temporarily become possible also for products following Type-2 globalisation. We may call this 'economic arbitrage'. In these cases we can observe also a material flow of products within the Type-2 globalisation characterized businesses; let us call the Type-1c 'opportunistic or low-cost globalization'. Typical are the exports of low-cost countries such as China. Furthermore, if a price difference between the salaries of white collar jobs also exists in different economies – and the skills are equivalent – then, thanks to today's efficient telecommunication infrastructure, it is also possible that enterprise functions as R&D, call

centres or accounting are outsourced to low-cost countries such as India; let us call the third type 'globalization of human factor or service'. Fig. 5 shows all types of globalization within a matrix allowing us to identify them roughly and with that the possible evolution or competitive issues to face within a certain business (Rüttimann 2007).

Does any evidence exist for this business and globalization type classification? The structure of exported goods for the year 2004 is shown in Fig. 6. The business type symbols have been added to each product group in order to show the pertinent classification according to the business type matrix as well as the corresponding type of globalization. We see that the majority of the product groups belong to the commodities and specialties. The graph shows also a statistical significant difference between the typical type 1 globalization business types of commodities and specialties compared to the type 2 globalization businesses of standards and convenience. The reason why the type 2 globalization businesses show some trade activity is mainly attributable to the opportunistic low-price globalization type 1c. We have to keep in mind that this classification is a rough but useful model, based on economic considerations, giving practical guidelines to structure the economic globalization phenomenon and is far from being a mathematically exact model according to physical laws.

Fig. 6. Goods export and relative business types

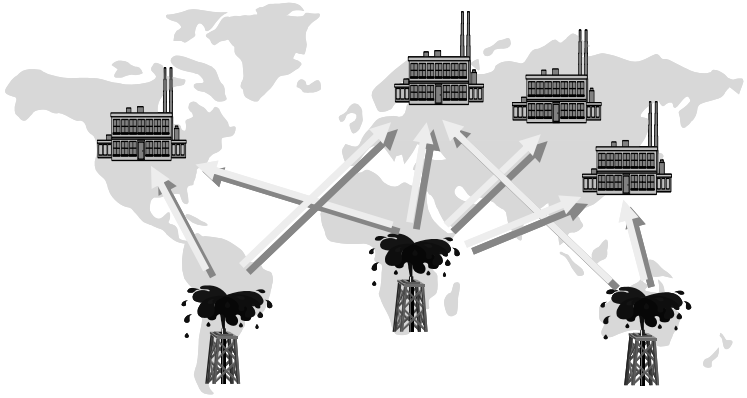


The Intrinsic Rational of Each Globalization Type

Indeed, these different globalization types also follow different economic laws. Type 1a, that is globalization of commodities, is characterized by global price building in efficient dedicated market places, and they are mainly characterized by unidirectional material

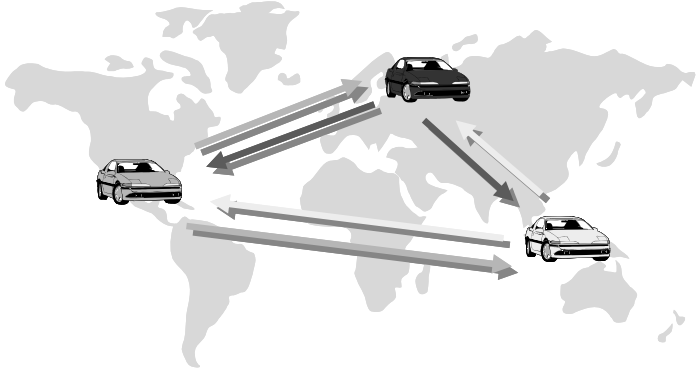
flows from countries of origin to the industrialized countries of transformation (Fig. 7). The preference for a raw material compared to another depends from the 'latent value' of a specific resource compared to another substitute resource. This also takes into consideration the ecological impact or the end-of-cycle aspects. The latent value expresses the value for the customer; it explains why a more expensive resource – like aluminium versus steel – is chosen.

Fig. 7. The foreign trade from the country of origin to the country of destination



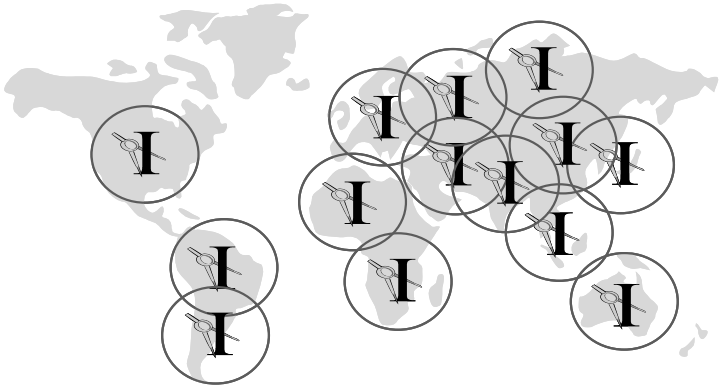
Globalization Type 1b is characterized by bi-directional flows of the same products between different economies (Fig. 8). Similar but differentiated products are produced by different competitors in different countries. The preference for one product compared to another depends on the 'cost-benefit' perception of the customer which can be translated to the 'competitiveness factor' of differentiated products of a producer. This competitiveness factor describes a comparative competitive advantage allowing us to model the behavior of economic actors for differentiated products. The higher the competitiveness factor is, the higher the market share of the producer. This can be seen as the modern interpretation of the Heckscher-Ohlin factors proportion theory.

Fig. 8. Bi-directional flows of the same products between different economies



Type 2 globalization products depend on the 'intrinsic market fragmentation' of the business (Fig. 9).

Fig. 9.

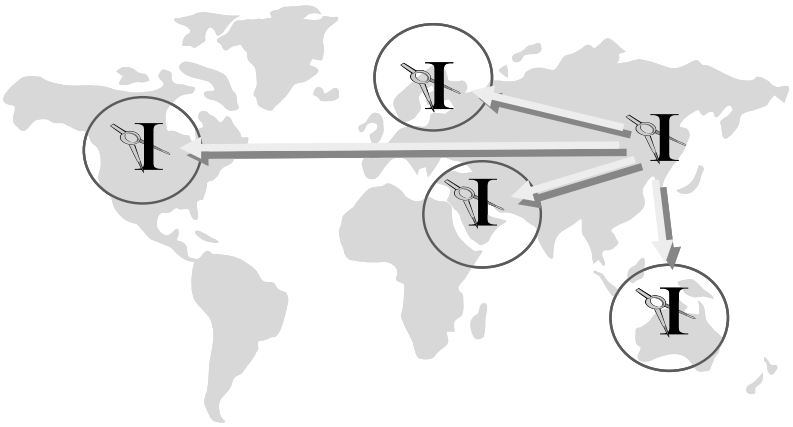


This market fragmentation is given by the characteristic of the product and the related transaction mechanism as well as its transportation cost. The fragmentation is determined as follows:

For simplicity, let us assume that all the companies are the same size in the market; due to the fragmentation of the market, this approximation is valid for most companies in the market. The higher the demand is, the more supplying companies a fragmented market requires. The market share in a fragmented market is fairly irrelevant. The demand is uniformly fragmented in the market and therefore the supply, due to the characteristics of the product, is also uniformly fragmented. The market structure is the driving element within this simplified analytical view. The reason for entering this market, besides the desire to exert control, is to increase one's own added value within the value chain. This reasoning is especially valid for the intermediate products (standards). The reasoning for convenience such as services (hotels) or fast-food is similar, but through the differentiation of the product and the end customers' behaviour, the causal relation has to be reconsidered, taking into account the comparative characteristics of the product or service offered. Indeed, combined with the fragmentation of the final demand, Type 2 fragmentation is an indicator for the necessary polypolistic offer structure to reach the next transformation stage of the value add chain or to be distributed to the final customer.

Type 1c is based on the price differential of the same product with low differentiation properties between two economies. Type 1c globalization is an example par excellence to explain the classic foreign trade theory based on absolute cost advantages. It is interesting to note that propensity of Type 1c globalization is based not on volume and growth but first on price difference and secondly, on capacity utilization. The absolute cost advantage is the most evident driving factor for the Type 1c globalization. We may call the resulting driver the ‘propensity for globalization’ (Fig. 10).

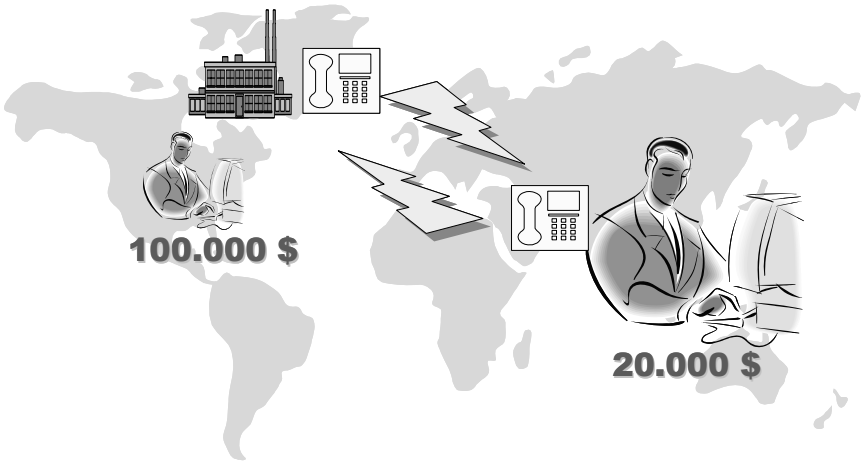
Fig. 10.



The higher the difference is, the higher the material flows of these products from countries of emerging economies to countries of advanced economies, although – from the intrinsic nature of the business – it would follow the Type 2 globalization.

Type 3 globalization is modelled by the 'comparative skill of labor', that is the level of skills available and the respective cost as well as the cost to transfer the service in question to the economy with lower cost (Fig. 11).

Fig. 11.



The theory of factor allocation, in this particular case labor, follows the same theory valid for economic goods. But let us enlarge on the concept and analyze the comparative skills of labor as well. In this context labor is intended to be rather as white collars. Type 3 globalization deals with the supporting function within a company. The main driver for the transfer of service functions to low-cost countries is the cost of salaries including the social contributions for white collar workers. Changes in considerations, according to experiences made, can even overweight the labor cost advantage and lead to outsourcing being reconsidered. This type of globalization is increasing not only for the supporting

functions but also for every service based on human skills where the service can be supported by the new telecommunication possibilities.

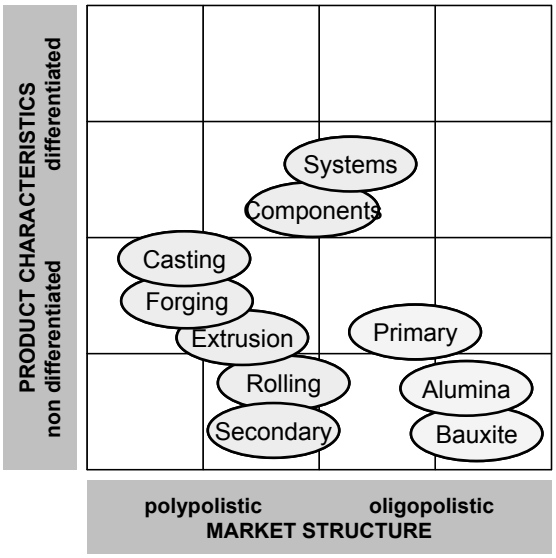
Each business follows its own globalization type. Nevertheless, there are also the mixed types. Especially Type 2 globalization is also observable in superposition to 1a and 1b globalization from MNE to increase market share. These imperialistic expansion strategies are often denounced due to the latent fear of unemployment. But the natural types of globalization (*e.g.,* 1a, 1b, 2) are not responsible for the negative social consequences such as unemployment; the socio-political consequences are mainly caused by Types 1c and 3. But this is another story. The phenomenological modelling of economic globalization presented here is further accompanied by a common denominator for the intrinsic reason of macroeconomic globalization evolution. The rationale behind this will lead to the Central Theorem of Globalization (Rüttimann 2007).

The Aluminium Industry

Big structural changes are occurring in the aluminium industry (Pawlek 2007). These changes have been analyzed extensively (Rüttimann 2008b), and the results were presented during the closing keynote speech at the Aluminium 2008 World Trade Fair and Conference in Essen. The globalization types presented here help us to understand the ongoing fundamental changes in the global industry logic. Let us try to put the aluminium technologies into the business type matrix and then derive the pertinent globalization type. Bauxite mining belongs to the ore extracting operation often performed by big vertically integrated aluminium companies or multinational mining groups, characterized by a clear oligopolistic market structure. Per definition, the differentiation aspect of a commodity is not existent, may be with the exception of the ore content. The same is valid for the calcined alumina. The outcome of the smelting process is primary aluminium, traded as ingots on commodity exchanges mainly in the quality 99.7 per cent. Also for primary aluminium we have the same oligopolistic structure composed of MNC with some independent SME (Small Medium Enterprises) as exceptions. We can classify all these goods as belonging to the commodity type of business, goods flowing from their natural origin to the big conversion centers and where low cost operations are essential (Fig. 12). The world of semi-fabricated products is mainly composed of the technologies rolling, extrusion, castings, forgings, and thin foil rolling. Although these plants often belong to MNC, the operating configuration has a fragmented structure in order to be near to their customers; MNE try to serve a wider geographical extension by setting-up a network of plants (*e.g.* SAPA, Hydro Aluminium, Novelis). The reasons of the fragmentation originate from the cumbrous shape of the products but also the need to interact with customers resulting therefore in a more regional-oriented business, but also the availability of technology and the nonsense of long transportation distances for non-differentiated products. The fragmentation of the business favors the concomitance of SME mainly in the extrusions, castings and forging technologies. For example, in extrusions the SME make up 50 per cent of the plants (Conserva 2007). All these technologies can be classified as belonging to the standards type business. These are intermediate goods with a low differentiation degree of the product. We can even classify the transaction object rather to be a service than only a physical product. Indeed, the customer asks primarily three questions: Can you manufacture this product? When can you supply it? How much does it cost? Thus, the extrusion companies are not supplying a product but performing a service by putting their produc-

tion capacities to the service of their customers and trying to give the shortest delivery time, accurate punctuality and specification-conform quality (Rüttimann 2002). Sometimes in the aluminium industry we can observe the downstream integration in the value-added chain right to ready-to-be-assembled components or systems for the building industry. These products have already a quite advanced differentiation degree for the solution proposed. On the other hand, the concentration degree from the supply point of view may vary. Nevertheless, we can classify it as belonging to in-between of specialties type of business and convenience.

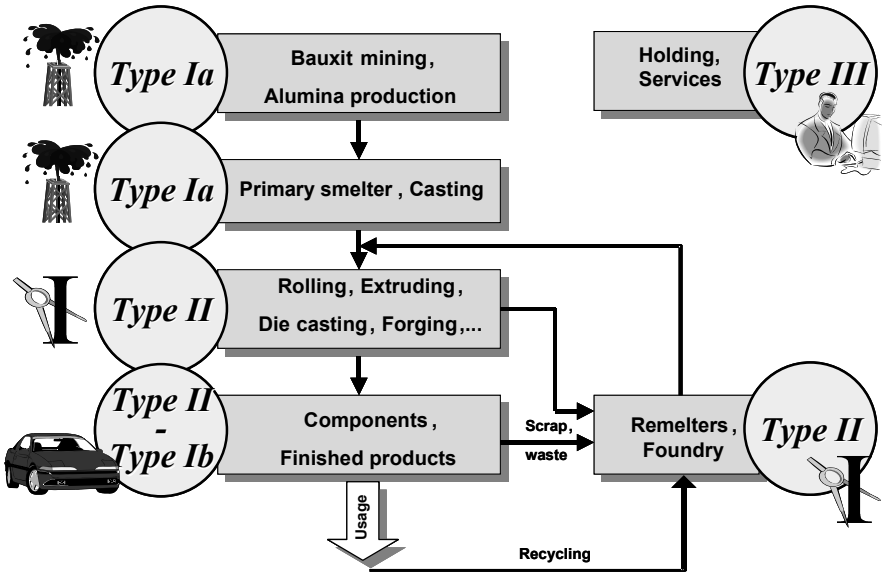
Fig. 12. The aluminium technologies within the Business Typology Matrix



The products (or technologies) of the aluminium industry belong mostly to the commodities and standards type of business (Fig. 12); this seems to be reasonable due to the fact that the transaction type is rather a B2B than a B2C.

The aluminium industry has been mainly composed of fully vertically integrated concerns covering the bauxite extracting, alumina refinery, primary aluminium smelting, different semis production technologies, and sometimes through to the manufacturing of components for the automotive, aerospace or electrotechnical industries (Fig. 13). Interesting is to see the apparently neat cut between the upstream operations (bauxite, alumina and primary) from the so-called downstream technologies (rolling, extrusions, castings, and forgings). Indeed, the basic aluminium production supplies the common basic raw material to all the other aluminium semis operations. Fig. 13 shows the relative business typology as well as the related globalization type on each level of the value-added chain. It clearly shows the co-existence of different globalization typologies within the aluminium industry. Therefore, we cannot simply say that we can observe a general globalization tendency in the aluminium industry but we can also assert it will perform differently along the added-value chain according to the different industry logics with different effects on the competitive system as well as the social system of employment.

Fig. 13. The value-add chain of the aluminium industry



In addition to the predominant globalization type of each value added stage, secondary globalization types may overlap. In fact, globalization Type 2 will mainly face additional competition in the form of opportunistic low-price globalization Type 1c. This has been especially the case of North American extrusion imports from China during the last years (Rüttimann 2008a). Further, in case of MNC, markets with natural physical globalization Types 1a and 1b will also be overlapped by the financial globalization Type 2 with the logic of adding market shares for global growth. This shows that the present disintegration of integrated aluminium companies is also related to the difference in the basic globalization types with different industry logics. Indeed, for globalization Type 1 the CSF (Critical Success Factor) is cost, the price being determined by LME (London Metal Exchange), whereas for globalization Type 2 the CSF is mainly a service. Moreover, despite the fact that the semis operation such as extrusion or rolling have the same globalization type, we find that between the different semis operations there are no relevant synergies observable from management point of view (Rüttimann 2008b) (except for contingent situations). This is underlined by the fact that the alloys are often quite different even with separate recycling loops, and the products out of different technologies are only partly, if ever, substitutable needing different conceptual engineering design. The reason for backward integration is more related historically as well as to have direct access to the aluminium metal, securing the supply side.

References

Conserva, M. 2007. *Global Market Trends of Aluminium and Aluminium Products.* Proceedings of the 6th World Congress Aluminium Two Thousand. March 13–17. Florence: Interall publications.

Pawlek, R. 2007. *The Rio Tinto Alcan Deal – Marking the Dawn of a New Era for Metals.* ALUMINIUM 9/, Giesel Verlag.

Rüttimann, B. 2002. *Strategy and Tactics in the Aluminium Semi-Finished Products Industry.* ALUMINIUM 78 (2002) 1/2 and 4.

Rüttimann, B. 2007. *Modeling Economic Globalization. A Post-Neoclassic View on Foreign Trade and Competition*. Münster: Verlagshaus Monsenstein und Vannerdat.

Rüttimann, B. 2008a. *The Globalization Trap of the Aluminum Extrusion Industry*. Paper presented at the 9th International Extrusion Technology Congress ET08, May 13–16. Orlando, Florida, USA.

Rüttimann, B. 2008b. *Which Globalisation for the Aluminium Industry?* ALUMINIUM, Part 1 in 1-2/2008 and Part 2 in 3/2008, Giesel Verlag.