Deliverable Report

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Objective: The objective of this deliverable was to identify critical success factors for market acceptance for new seafood products in the European market, based on what success factors for new products can be identified in the literature and a success-failure study of comparative cases.

Deviations: This deliverable is delivered three months behind schedule.

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1 Introduction

1.1 Objective of this deliverable

Although essential for a firm's survival, new product launches are also associated with high risks and many new products fail to win over sufficient customers to become a commercial success. While estimates vary from 40% to 90%, depending on the product category, the criteria used to define success, and the stage at which products are included in the analysis, it is clear that new products fail at a significant rate (Gourville, 2006). The objective of this deliverable was to identify critical success factors for market acceptance for new seafood products in the European market. A list of critical success factors for market acceptance is presented, based on what success factors for new products could be identified in the literature and a success-failure study of comparative cases. With these insights, aquaculture producers can seek market opportunities to improve their business. The results of this deliverable could be used for the development of business models for new fish products. DIVERSIFY aims to enhance the European aquaculture production by removing production bottlenecks of emerging species, producing new products and accessing new markets. DIVERSIFY focuses on meagre (*Argyrosomus regius*) and greater amberjack (*Seriola dumerili*) for warm-water marine cage culture, wreckfish (*Polyprion americanus*) for warm- and cool-water marine cage culture, Atlantic halibut (*Hippoglossus hippoglossus*) for marine cold-water culture, grey mullet (*Mugil cephalus*) a euryhaline herbivore for pond/extensive culture, and pikeperch (*Sander lucioperca*) for freshwater intensive culture using RAS.

1.2 Methodology

The identification of success factors was conducted by literature research. We mainly scanned relevant review or meta-analysis articles from the academic marketing literature to identify which factors are distinguished as drivers of new product success. In addition, to get an idea of the position of the European market for new fish products, the Global New Products Database of Mintel, Innova Database and different market research reports were consulted. Finally, for drafting the comparative cases with regard to success or failure of specific fish species in the European market (or one of the specific countries within Europe), desk research was conducted and an appeal was made to experts in the field (based on personal correspondence).

1.3 Set up of the deliverable

In Chapter 2, general background information on success factors for new products and consumer acceptance of new products is provided. In addition, Chapter 2 describes general trends in new fish product launches in Europe over the last couple of years. This leads to the general framework that was used to assess the cases as described in Chapter 3 and a discussion of a number of comparative cases of successful or failed market introductions of fish products. Chapter 4 provides a synthesis of the findings, and draws the main conclusions and implications for the selected species in the DIVERSIFY project.

2 Background information

2.1 Introduction

The introduction of new products necessary for continuity of business is one of the most important marketing activities of companies. However, it is a very risky strategy, in that the majority of new products fail in the marketplace (Goldenberg et al., 2001; Gourville, 2006; Srinivasan et al., 2009). Failed innovations are not only a waste of investment, but also often a missed opportunity to contribute to solve societal problems, such as health and environmental issues. New products fail either because R&D responsible for new product development has not yielded a product that appeals to the marketplace or because the marketing strategy associated with the new product launch has been ineffective. In this respect, the failure of innovations is most often due to a firm's lack of understanding of consumer needs. This chapter describes the main results of the academic literature on success factors for new product acceptance and the European market for new fish products.

2.2 Success factors for new product acceptance

Given the fact that the success of innovations depends on consumers' accepting novel products, it is important to know the needs and preferences of consumers. A vast amount of literature investigated the acceptance of new products by consumers (Gatignon & Robertson, 1991; Im et al., 2003; Rogers, 2003; Steenkamp & Gielens, 2003). For the purpose of this project, one wonders if it is relevant to know which factors have a similar impact on new product success in different countries, and hence could be part of international new product introduction strategies. An answer to this question requires detailed knowledge of the generalizability of factors underlying new product success across countries. Therefore, the framework that we unfold in this study is mainly based on two studies. The first study is a meta-analysis of the new product performance literature by Henard and Szymanski (2001). Based on a quantitative synthesis of the literature, this study provides insights in the success factors behind the marketplace performance of new product initiatives that are generated through a quantitative synthesis of the literature. Secondly, we make use of a study by Gielens and Steenkamp (2007). Their cross-national data allowed the derivation of empirical generalizations regarding factors underlying new product acceptance. This implies that these variables can be used for international, market segmentation. To be more precise, in their study, they examined the following countries: France, Germany, Spain, and the U.K. These four countries are, together with Italy, also the focal countries of the DIVERSIFY project.

Based on these studies, we distinguish the following factors to play a role in the market acceptance of new products:

Table 1. Key determinants of new product acceptance

Drivers of new product acceptance	Definition	Predicted effect on new product acceptance
Product advantage	Superiority and/or differentiation over competitive offerings	+
Product meets customer needs	Extent to which product is perceived as satisfying desires/needs of the customer	+
Product innovativeness	Perceived newness of the product	U
Brand/product category reputation	A brand/product category has a good reputation if consumers believe its products to be of consistent high quality	+
Market power	The power of the brands in the category and the power of the industry in general	+

Market competitiveness	The degree of competitive response to a new product	-
Market potential	Anticipated growth in customers/customer demand for a specific new product	+

Note: + means a positive effect, - is a negative effect and U is a U-shaped effect .

We explain these factors below:

- *Product advantage* - The degree to which a new product is perceived as being better than other similar products that exist at that moment in the market has been widely acknowledged as a prerequisite for new product success in the innovation literature (Arts et al., 2011; Henard and Szymanski, 2001; Rogers, 2003).
- *Product meets customer needs* – Another factor, close to product advantage, is the extent to which new products meet customer needs. This is related to the extent in which a new product is compatible with consumers' existing values, past experiences and life style (Arts et al., 2011; Rogers, 2003).
- *Product innovativeness* – Henard and Szymanski (2001) define product innovativeness as the newness of the product. The relationship between product newness and market acceptance is less clear. On the one hand, the more novel the product is, the greater will be its relative advantage vis-à-vis existing products generally (Gatignon & Xuereb, 1997), which should have a positive effect on consumer acceptance. On the other hand, more novel products are also likely to be more complex, which should reduce consumer acceptance (Rogers, 2003). Gielens and Steenkamp (2007) found a U-shaped relation between newness and consumer acceptance. Products of either incremental or major newness are more successful than products of intermediate newness. Products of intermediate newness appear to be stuck in the middle: too high on complexity compared to products of incremental newness and too low on relative advantage compared to products of major newness.
- *Brand/product category reputation* – The reputation of a product category and its brands plays a role in new product success. For consumers, the quality of new products is often difficult to assess prior to consumption. Therefore, they use the product category or brand name as a cue to infer whether the product will be of good quality. For example, a high-reputation brand name is extended to a new product, and subsequently consumers believe that the new product is also of high quality (Choi, 1998). Hence, it is expected that new products introduced by reputable brands – as opposed to new products introduced under a less reputable brand name – exhibit greater consumer acceptance.
- *Market power* – A more powerful industry with powerful brands is in a better position to secure shelf space and have greater resources to devote to supporting their new products (*i.e.*, marketing budgets and wider distribution possibilities) (Reibstein & Farris, 1995). New products introduced by a more powerful industry are expected to gain greater consumer acceptance (Gielens & Steenkamp, 2007).
- *Market competitiveness* – The degree, intensity, or level of competitive response to a new product introduction in the market has a negative impact on new product success (Henard and Szymanski, 2001). If there is a high possibility that competitors will respond to new product introductions with subsequent new product introductions, markets become rapidly saturated, so that a new product will find it more difficult to find enough unmet demand (Schmalensee, 1978). In addition, new product success chances also decrease if there is severe competition on price within a certain industry, unless the new product is able to differentiate sufficiently itself from existing products (Lypczynski &Wilson, 2001). Finally, Gielens and Steenkamp (2007) found that consumer acceptance is higher in less concentrated, less heavily promoted, and less heavily advertised product categories[1].
- *Market potential* – Market potential is the anticipated growth in customers/customer demand in the marketplace for a specific new product.

[1] On the other hand, informative advertising can also provide information about a product's qualities, which increases market transparency and could therefore also have a positive effect on market acceptance. We will return to this aspect in the final chapter of this report.

Notice that next to these factors, also aspects related to an individual firm and to the consumers in the target market play a role in new product success:

- *Individual firm characteristics* – Henard and Szymanski (2001) differentiate between characteristics of a firm's strategy and characteristics of a firm's resources and processes. The first aspect is related to the strategic choices that an individual firm makes, such as the timing of marketplace entry with a product and the extent to which a firm has committed personnel and R&D resources to a new product initiative. The second aspect is related the proficiency with which a firm executes the new product development activities (*e.g.*, idea generation/screening, market research, financial analyses), the cross-functional integration and communication within a firm and the degree of senior management support for a new product initiative.
- *Consumer characteristics* - Consumer characteristics also play a role in consumer acceptance of new products (Rogers, 2003). In a meta-analysis on consumer adoption of new products, Arts et al. (2011) distinguish between the following aspects: demographics (such as age and education), the degree to which a consumer is involved with a specified product category, the general propensity of a consumer to adopt new products, and the degree to which an individual is receptive for the media (and its message). If systematic, generalizable effects of consumer characteristics on the extent of new product acceptance are found across countries, and this offers a basis for international market segmentation. Therefore, in DIVERSIFY, a segmentation study has been conducted that will give insights into consumer sub-markets (*i.e.*, segments) with the highest market potential across and within the 5 countries examined in the project.

In this success-failure study we do not focus directly on these aspects, since they cannot be taken into account directly in the product development that takes place in the DIVERSIFY project. However, for new product managers of individual companies these are factors to take into account in predicting the success of their new products. Therefore, in the conclusion of this report, we also provide some recommendations on these aspects.

2.3 European market developments with regard to new fish products

2.3.1 The European market for fish

Fish consumption varies greatly throughout Europe, with the highest consumption in southern European countries such as Portugal and Spain, and the lowest consumption in eastern Europe. Fish consumption is generally higher in areas with greater coastal access, reflecting traditional patterns of consumption and distribution (given the short shelf life of fresh fish). In the South, consumers eat a wide variety of seafood including squid, shrimp, tropical fish and locally captured fish. The variety of fish is smaller in western Europe than in the South (CBI, 2014a). Next to regional differences in fish consumption, there is also a difference in what type of fish is preferred in the different countries of the European continent. Traditionally, southern European countries have a preference for fresh (whole) fish, while northern European countries prefer processed fish (*i.e.*, canned or frozen). However, due to market trends, such as the introduction of sushi, fresh fish is becoming increasingly popular in northern Europe as well.

Seafood consumption and production in Europe is relatively stable, although different regional patterns can be distinguished. The largest seafood consumers live in the southern part of Europe: France, Spain and Italy. The largest growth market is eastern Europe where seafood is accepted increasingly by consumers. Western European countries, such as the UK and Germany saw a slight decline in per capita fish consumption over the past five years. This was probably due to market saturation for protein products in combination with the economic downturn in combination with a general increase in price of the fish products. Moreover, some consumers may have eaten less fish because of sustainability issues (although this is less of an issue in southern Europe). The ecological footprint of animal-based proteins, such as meat and fish, are relatively high in relation to insect proteins and vegetable-based protein products (Beukers and Van der Valk, 2014).

However, unless the fact that seafood consumption declined in western Europe, there are several reasons that fish consumption in Europe in the future will remain stable or will even grow, indicating market potential for new fish products:

- Lower fish prices due to improved fishing technologies and more efficient aquaculture production increases the accessibility for fish, also for lower socio-economic groups.
- There is increasing health awareness among consumers. Also demographic developments such as the ageing of the population in the EU will make health issues much more important. As compared to meat products, fish products are in a good position to be promoted as a healthy product.
- Fish is promoted by a lot of countries because of their health benefits (*e.g.*, omega-3 fatty acids), for example in national campaigns or by health centers. This holds opportunities for fish products in the sense that consumers will switch from meat to fish products.
- An anticipated trend is that consumers will show more interest for new fish products (*e.g.*, fish products with low fat and sugar contents, limited additives and/or fortified with omega-3 fatty acids and vitamins).

Potential threats for future consumption of fish are an increase in fish prices in the long term due to global competition for animal proteins and increasing requirements with respect to quality, traceability, sustainability and animal welfare.

2.3.2 New fish product launches

The Mintel Global New Products Database contains new product launches in European countries. This database is used to check the number of new fish product launches in Europe. First of all, as is shown in **Figure 1** below, the number of new fish products on the European market has increased sharply over the last two decades. Europe has the highest share for fish and seafood launches (Innova Database, 2014). In the launched new products there is an increasing focus on local flavors, convenience and health benefits (Innova Database, 2014). The rise of new products appealing to these benefits meets consumers' demand for fish and seafood as part of a modern and healthy lifestyle.

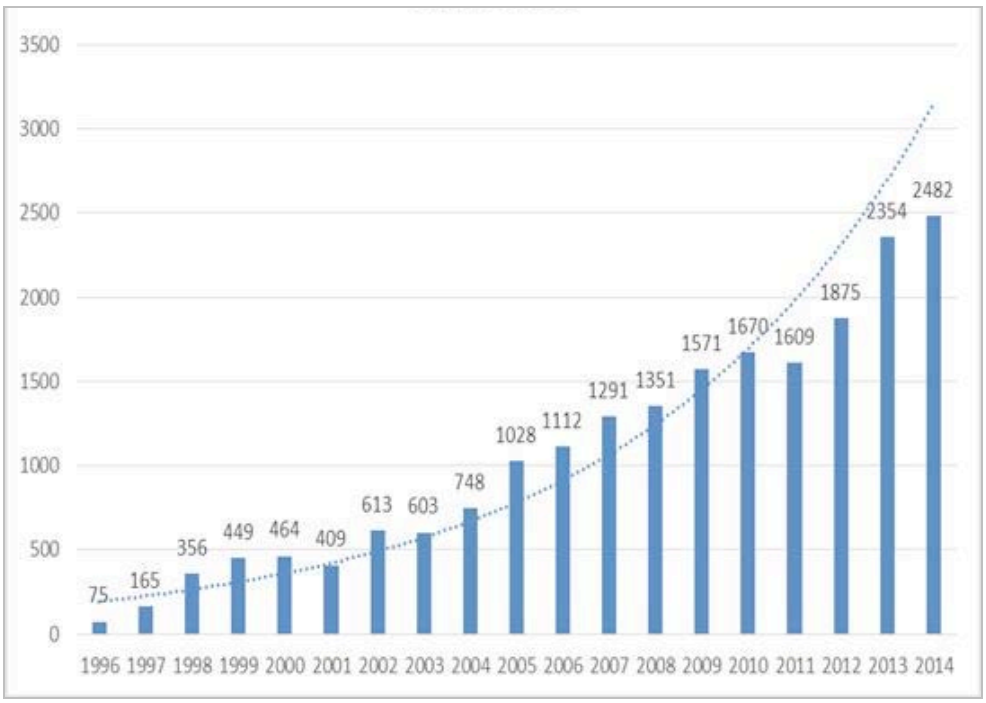

Figure 1. Number of new fish products entered on the European market the last two decades (Mintel GNPD-database, 2014).

The top five countries with regard to launches of new fish products are France, Germany, Italy, Spain and UK. These top five countries correspond with the focal countries of the DIVERSIFY project. As can be deducted from **Figure 2** below, new product launches increased especially for France, Germany and Italy, while for Spain only the last 2 years showed a growth in number of fish product launches. The number of new fish product launches in the UK remained relatively stable over the past 5 years. This can be related to the fact that in the UK, in the same time period, fish purchases declined.

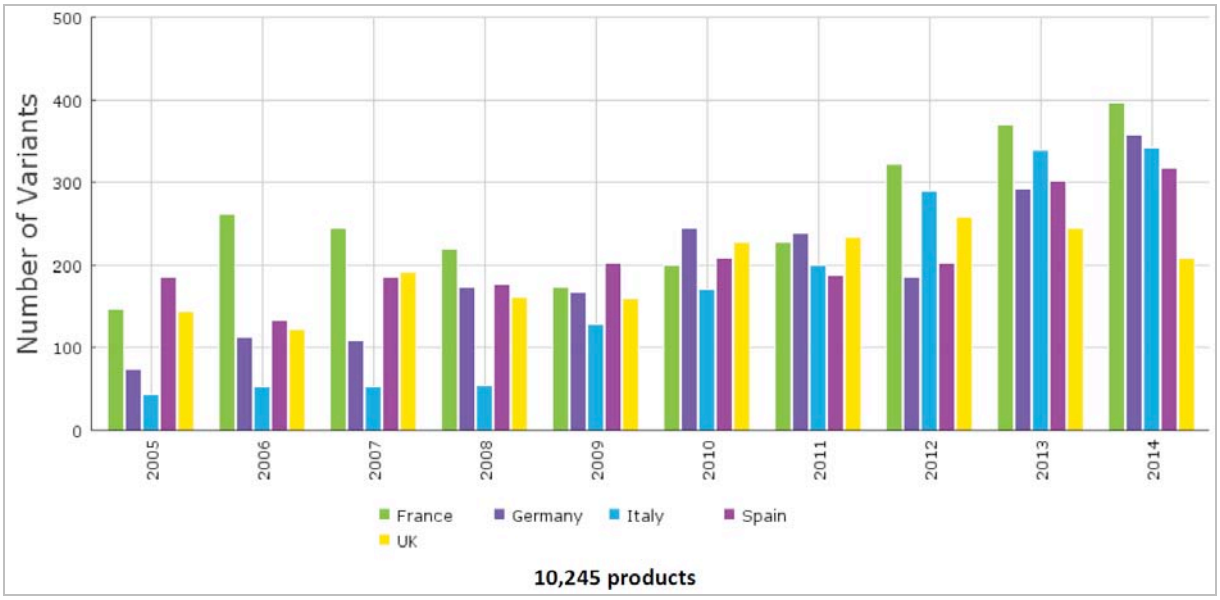

Figure 2. Fish product launches per year, for the top-5 EU countries (Mintel GNPD-database, 2014).

Most new fish product launches are new varieties, followed by new products or new packaging. The majority of new fish products are global brands (68%), but 32% of new fish products are private label products. It is expected that the share of private labels is going to increase over the next years. **Figure 3** below depicts the top 15 fish brands launched over the past 15 years. Notice that the 4 highest ranked brands in terms of

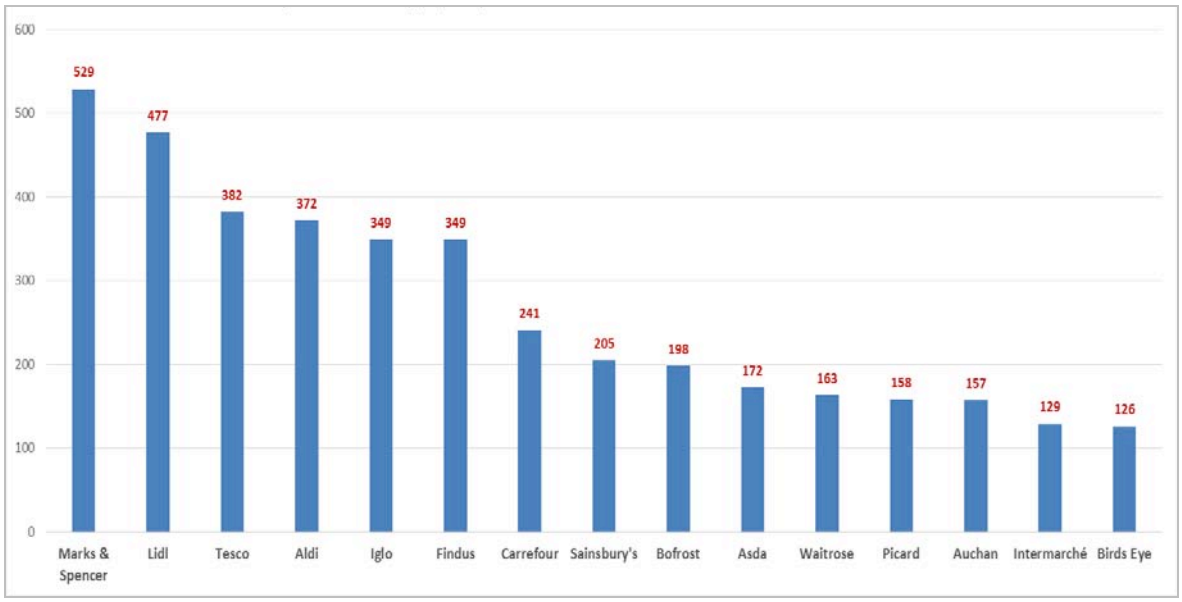

Figure 3. The top 15 fish brands launched over the last 15 years, with the number of products per brand (Mintel GNPD-database, 2014).

product launches are all private labels, from which 2 brands from discount stores (*i.e.*, Lidl and Aldi). This is underlined by the fact that most new fish products are launched through supermarkets or mass merchandise channels. Especially in countries such as Germany, hard discounters like Lidl and Aldi have a very strong position (Kumar & Steenkamp, 2007). Aldi carries no national brands and its market share has grown dramatically over the last decade. Consequently, its private label is often one of the largest in the category. In addition, **Figure 3** reveals that the top 15 fish brands are mainly from northwest European companies (retailers). This corresponds with the aforementioned fact that most processed fish products are introduced in this part of Europe, whereas southern Europe mainly consumes whole fresh fish.

2.3.3 Positioning of new fish products

Position claims of new fish products are related mainly to the environment and ethical aspects, especially in Germany and the UK. This is not strange, since a general trend is the increasing importance of sustainability certification in Europe. Especially in the North and West of Europe, sustainability certification has become a market access requirement for large retail organizations, also because of NGO pressure. For seafood the most important certification initiatives are the Marine Stewardship Council (MSC) for captured seafood and the Aquaculture Stewardship Council (ASC) for cultured seafood. (See also Deliverable 27.2 Current Certification Schemes). However, it remains to be seen to which extent sustainability labels are offering a real market advantage. Most consumers are not aware of these labels, do not know what they mean and/or do not have the motivation to take into account these labels when buying products (Grunert et al., 2014).

Convenience also plays an important role. France and Spain are dominant in this regard. This positioning fits with the growing demand for products that are easy to prepare. This trend has to do with the fact that consumers often have less time to prepare meals, and also that, at least for fish products, consumers do not have the knowledge how to prepare a fish.

Other product positionings are “natural” (*i.e.*, important in France and the UK), specific positionings like premium product (*i.e.*, in the UK), “minus” claims and “suitable for” claims (**Fig. 4**). The “natural” claim refers to the use of natural ingredients and no artificial additives, the “minus” category represents products positioned with low/no/reduced formulations, whereas “suitable for” claims are related to specific diets such as reduced allergen and gluten-free.

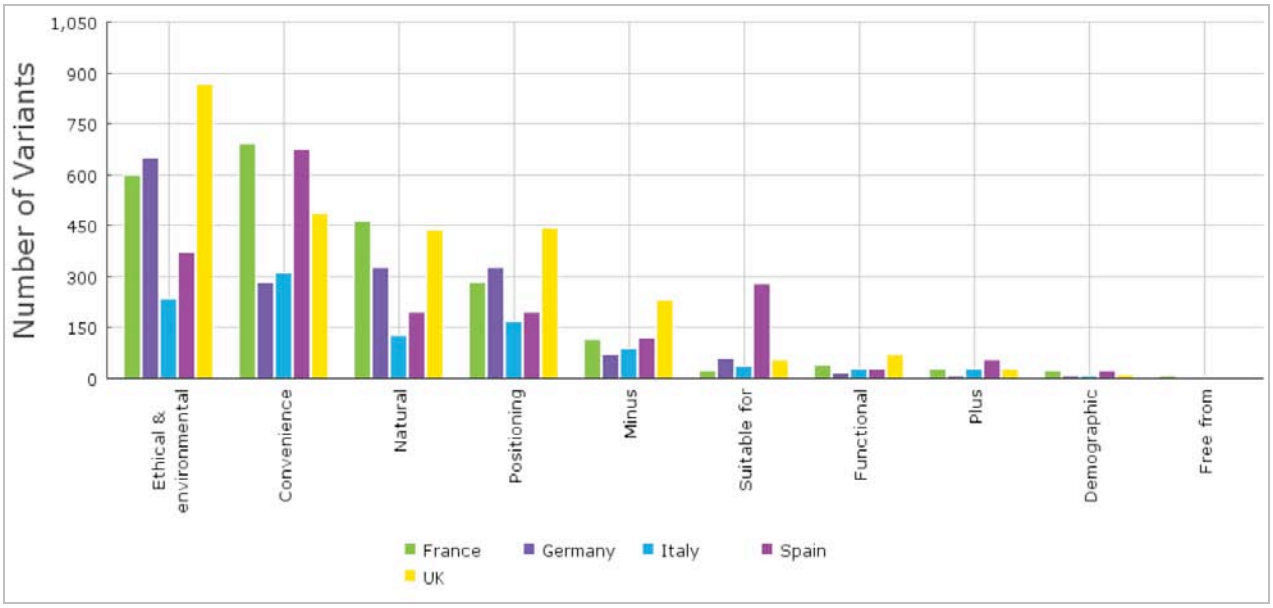

Figure 4. The top 10 position claims of new fish products (Mintel GNPD-database, 2014).

3 Success and failure stories for fish across Europe

3.1 Introduction

This chapter describes comparative cases for four species of fish. These cases have been selected, because they can be related to the new/emerging species that are focal in DIVERSIFY. Gilthead sea bream and European seabass are competing with meagre, while tuna is a relatively close substitute to greater amberjack. The cases will be assessed based on the product success factors as identified in Chapter 2.2.

3.2 Processed gilthead sea bream and European seabass in Greece

3.2.1 Introductory note

Gilthead sea bream and sea bass are the two main farmed species produced in Greece and their production is focused towards export commercialization (approximately 80% of the Greek production is exported to Italy, France, Spain and other E.U. countries mostly). Their farming in Greece is dated since more than three decades and their commercial success has been historically with a lot of ups and downs. The most characteristic price crisis in the branch is dated in the late 90s or early 00s with most of the companies selling at or below cost, driven under the stock-market listed companies (that used this technique as a financial strategy to buy out the smaller companies). Thereafter, the market has been more or less stabilized, but with profit margins significantly lower than those of the decades of 80s and 90s.
Since the story of whole unprocessed gilthead sea bream and sea bass cannot be clearly characterized as success or failure story (it depends on the perspective of the viewer), this section will focus on processed forms of these species that have been a more profound case of a failure story.

3.2.2 Background story

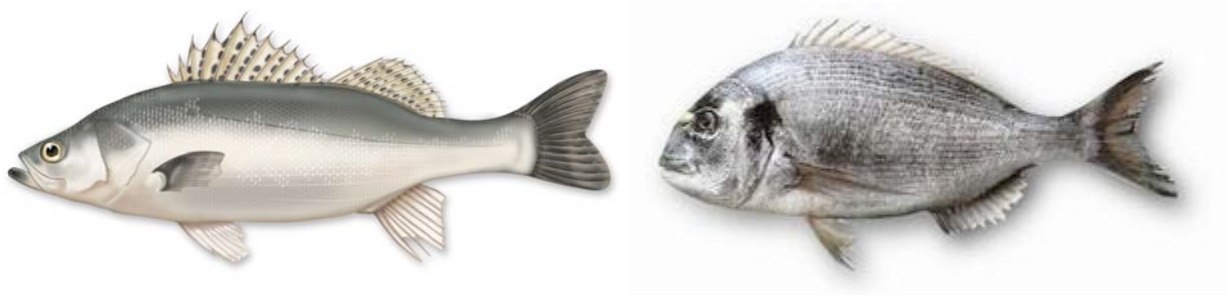

Figure 5. European seabass (left) and gilthead sea bream (right)

The processing of gilthead sea bream and European sea bass (**Fig. 5**) in Greece has started in the late 90's probably linked to the price crisis of that era concerning the fresh unprocessed fish. Filleting and alternative packaging methods (mainly MAP- Modified Atmosphere Packaging), and also some light processing (smoking, light brining or addition of various herbs or natural antioxidants etcetera) have been the main alternatives offered to the market. These processed alternatives offer some advantages as compared to the fresh unprocessed fish:

- Value addition to the product, which is crucial, considering that fresh commercialized aquaculture fish are sold close to cost and the profit margins are very narrow.
- Shelf life extension, which is a main advantage since fresh fish is a very perishable food and should be consumed within very short period.
- Reduction of space and costs in transportation, since no ice is needed, package is smaller and simple refrigeration is adequate.

- The ability for expansion in new markets not previously available due to the limitations of the fresh products.
- Saves the consumers time and effort in preparation and, therefore, is better adapted to nowadays urban needs.

Processed gilthead sea bream and European sea bass have been commercialized locally in Greece in at least the two major national supermarkets in Greece (AB and Sklavenitis) and in Carrefour. Different forms of processed fish remained at the market for about 4-5 years and thereafter disappeared (around 2002-2004). Notice that although some local supermarkets have removed these species, the products themselves are still available in Europe. It is remarkable that regardless of the benefits that these products offer, they never did really well in the Greek market.

It is not clear what the exact reasons were that these products have been withdrawn from the market. However, it seems that the processing operational costs for most of them is too high in relation to the added value they can get (Henry Hellin, personal communication). Another reason could be that the Greek consumer (at least at that time) was very reluctant to trying new seafood (Kriton Grigorakis, personal communication). The Greek consumer prefers fresh whole fish and is consuming processed fish in a much lesser degree. If the latter is the case he/she is very attached to traditional processed forms. At present, the processing industry in Greece is almost exclusively based on "wild" fish products. Finally, there had been very little (if any) advertisement for those products at that time. This should have also played some role.

The processed forms of gilthead sea bream and European seabass that are presently produced include only gutting and filleting products:
- Fish gutted, grilled, scaled 200-1000 g
- Fresh fillets, skin-on, different cuts 60-180 g.

3.2.3 Scores on the drivers of product acceptance for processed European seabass and gilthead sea bream

Table 2 provides the scores on the drivers of new product acceptance for processed European seabass and gilthead sea bream in Greece. The processed products offered clearly an advantage with regard to the existing alternatives. For example, shelf life extension is a main advantage since fresh fish is a very perishable food. Also, these new products could save the consumer time and effort in preparation. In addition, there was of market potential for these types of products. For example, this product suits well in the fast-paced, urban lifestyles and it has the ability for expansion in new markets not previously available due to the limitations of the fresh products.

Table 2. Scores on the drivers of product acceptance for processed European seabass/ gilthead sea bream in Greece

Drivers of new product acceptance	Score
Product advantage	+
Product meets customer needs	-
Product innovativeness	-
Brand/ product category reputation	-
Market power	-
Market competitiveness	?
Market potential	+

Note: + means a positive effect, - is a negative effect and ? is an unknown effect.

However, it is clear that the product did not succeed to meet consumers' needs. In addition, the fact that these were new products evoked resistance from the consumers. Greek consumers have been very reluctant in trying new seafood, especially farmed ones. Moreover, the category of processed fish did not have a good reputation at that time. The Greek consumer prefers fresh whole fish. In addition, in Greece there is plenty wild fish available in fish markets, which consumers prefer. Aquaculture fishes are not of good reputation in the Greek market. So, also the score on brand/product category reputation was negative. Finally, there had been very little (if any) advertisement for those products at that time, indicating market power of these type of products.

3.3 Atlantic salmon in Germany

3.3.1 Background story

Figure 6. Atlantic salmon

Most seafood (including fin-fish) products in Germany are bought in the supermarkets or discount stores (about 86% of all sales). Most popular seafood products in Germany are: 1) frozen fish (30% of sales volume), 2) canned and marinated fish products (27%), 3) crustaceans and molluscs (14%), 4) smoked fish (13%) and 5) fresh fish (8%). From the top 5 fish species that are consumed in Germany, salmon is second with a consumption share of 17%. Alaska pollock is ranked first (consumption share of 22%). See also the **Figure 7** below.

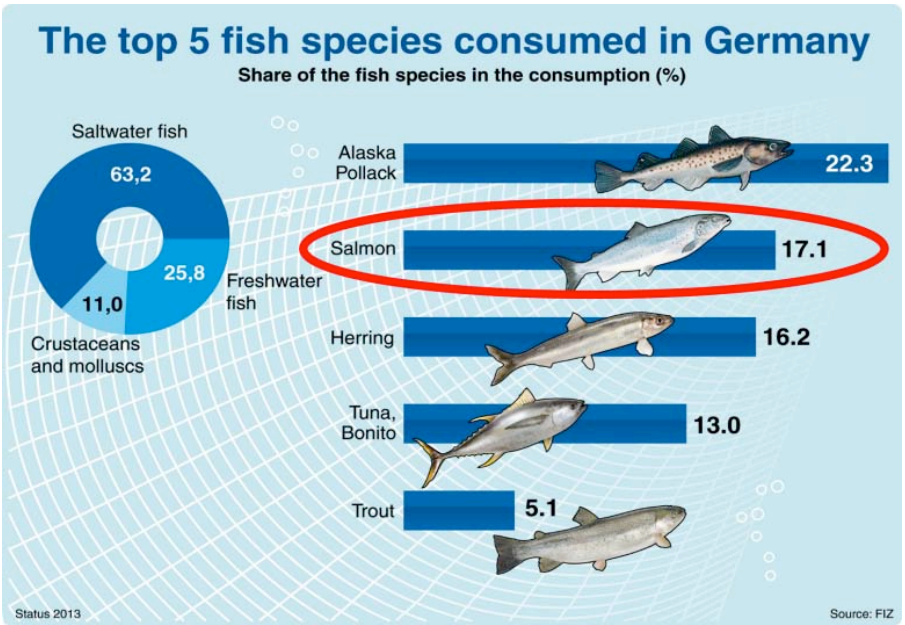

Figure 7. Top 5 fish species consumed in Germany, both wild caught as well as farmed fish (Source: FIZ).

In a saturated and, in terms of volume, even slightly shrinking German fish market, farmed salmon is still growing (around 22% in the last 5 years).

- Especially the market share of fresh salmon increased over the last five years. Market shares of smoked and frozen salmon remained relatively stable. The qualifications „fresh" and „untreated" are more important than price!
- As compared to other retail channels, salmon sales at discount stores grew much faster. They are also responsible for the increase in market share of fresh salmon. Whereas the fresh salmon sales in other retail channels remained equal or even slightly decreased, these sales exploded in discount stores. These discounter supermarkets now also plan to offer MAP (Modified Atmosphere Packaging)-salmon (**Fig. 8).**

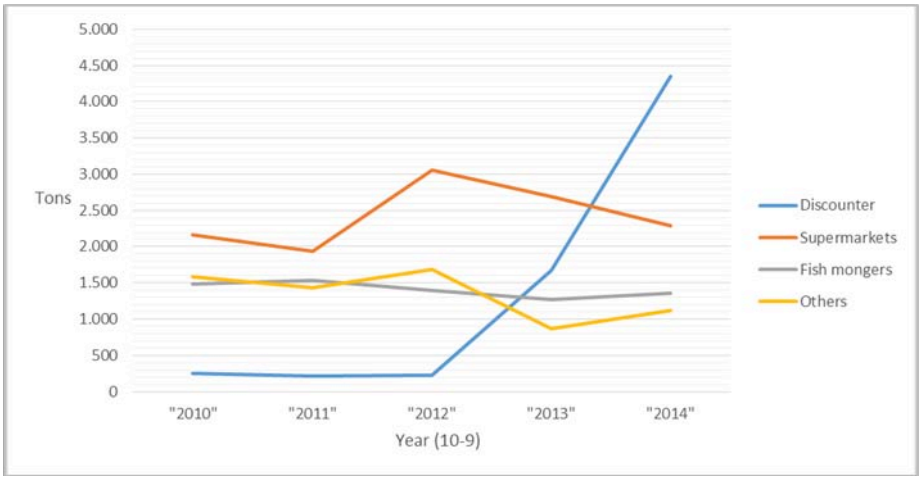

Figure 8. Fresh salmon sales by retail channel in Germany (Source: Matthias Keller, Nordea Salmon Summitt 2014).

3.3.2 Scores on the drivers of product acceptance for fresh Atlantic salmon

Table 3. Scores on the drivers of product acceptance for fresh salmon in Germany

Drivers of new product acceptance	Score
Product advantage	+
Product meets customer needs	+
Product innovativeness	-
Brand/ product category reputation	+
Market power	+
Market competitiveness	?
Market potential	+

Note: + means a positive effect, - is a negative effect and ? is an unknown effect.

The success of fresh salmon can be attributed to a number of factors. First of all, the product clearly meets customer needs. For example, the product offers a clear health advantage since salmon has a relatively high omega-3 fatty acid content (Domingo et al., 2007). In addition, fresh salmon has earned a relatively good reputation based on its versatility in use and due to the growing popularity for Japanese food in which salmon is used, like sushi. Finally, using focus groups in different European countries including Germany, Aarset et al. (2000) found that the main drivers for sales of organic salmon were considerations of health, food safety, environmental concerns, and taste.

Market power of fresh salmon is relatively high since it has been introduced by hard discounters in Germany. In this country, hard discounters like Lidl and Aldi have a very strong market position. In addition, because these discounters started to offer fresh salmon as well, the availability of salmon has significantly increased in Germany. This opens up opportunities for new markets, thereby increasing the market potential.

3.4 Pangasius in Germany

3.4.1 Background story

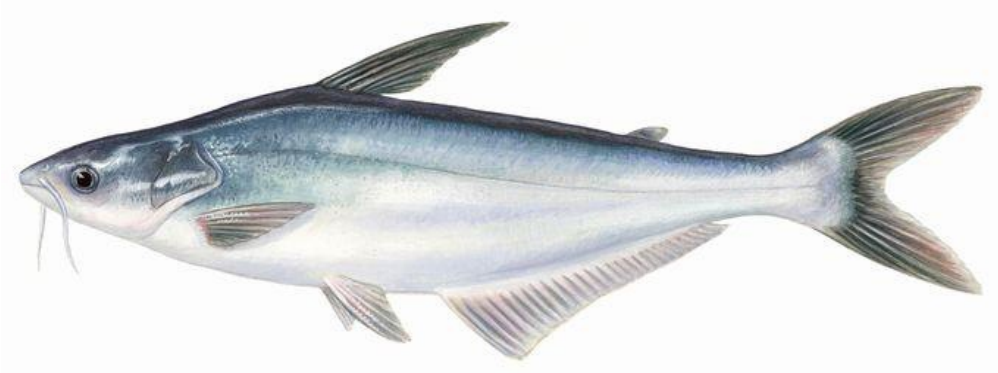

Figure 9. Pangasius

Germany is the third largest market for pangasius in the EU. The scientific name for this aquacultured, freshwater catfish is *Pangasius hypophthalmus*. In Vietnam, the fish is mostly referred to as *basa*, in Germany mostly as *pangasius* or *panga*. The largest pangasius importers in the EU are Spain, Germany and the Netherlands. More than 95% of pangasius is imported directly or indirectly from Vietnam. In Germany, about 75% of the total sales of pangasius are sold in the retail segment, and about 25% through the catering segment. Pangasius showed a sharp rise in imports and market share in Germany between 1998 and 2008. In 1998 it was almost non-existent at the German market. From 2003, imported fish (fillets) became a booming business. In 2005, pangasius captured a market share of 1.5%, in 2007 the market share was grown to 2.8%. Then in 2008, its market share peaked (with about 4.4%). The strong growth of pangasius in these years can be attributed to a number of reasons: the low price resulted in increased market share during the economic crisis, the fish has a relatively neutral taste and can therefore be used for multiple purposes, and at that time there was an increased demand from large retailers for farmed fish to ensure supply (due to supply problems of some important other fish species).

However, from 2010 onwards, imports have declined and the consumer perception of pangasius has become increasingly negative. The two most important reasons for this decline are (1) the negative perception of the product among certain buyers and consumers, and (2) the competition with other white fish species, most importantly Alaskan pollock and in some markets also cod (both from the wild) (CBI, 2014b). With regard to the first reason, a marketing activity by WWF promoting pangasius as a non-healthy and environmental unfriendly food harmed the image of pangasius among consumers (Matthias Keller, personal communication). At the moment it is interesting, whether the ASC-certification of this product can help to increase market sales. Furthermore, it could be that the sales of fish (*i.e.*, pangasius) in 2008 and the following years have suffered from the financial crisis. With respect to actual market figures until September 2014, imports were 11.719 tons compared to 14.461 tons in the first 9 months of 2013.

3.4.2 Scores on the drivers of product acceptance for pangasius

As can be deducted from the table below, the overall balance of the scores on new product acceptance for pangasius is negative.

Table 4. Scores on the drivers of product acceptance for pangasius in Germany

Drivers of new product acceptance	Score
Product advantage	+
Product meets customer needs	+
Product innovativeness	-
Brand/ product category reputation	-
Market power	-
Market competitiveness	+
Market potential	+

Note: + means a positive effect and - is a negative effect.

First of all, the product suffered from a negative reputation over the last couple of years. In recent years, there have been several NGO campaigns that have harmed the image of pangasius among consumers in Germany and the EU. Although serious improvements in the market perception of pangasius have been made, the image of the product can be further improved. Consumers and NGOs have to be convinced about the sustainability of pangasius and examples of best practices and farming must be widely communicated. ASC certification may contribute to a more positive perception of pangasius in the EU market.

Furthermore, strong market competition put prices under pressure. The average import price per kg for frozen fillets in Germany on September 1st 2014 was €2.28, while this was €2.41 in 2012 (Destatis, 2015). In Germany, Alaskan pollock is the main competitor of pangasius. The German market for white fish traditionally has a strong focus on Alaska pollock. Currently Alaska pollock is often preferred over pangasius because of a better consumer perception. The market position of pangasius in Germany is therefore highly influenced by changes in the supply of Alaska pollock.

Related to this is the fact that the market power and product advantage of pangasius is not very high. There is a lack of strong brands for pangasius and in German retail chains pangasius is often used for promotional offers. Purchase managers do not see the potential for repositioning pangasius (even of it is ASC-certified) as a higher value product. In addition, the strong competition with Alaska pollock, which is sometimes sold at a lower price than pangasius, with rather stable stocks and MSC certification, does not provide opportunities for positioning pangasius as a higher value product.

Finally, there is still market potential for this product. The product specifications of pangasius, a thick fillet and neutral taste, make it suitable as an ingredient for convenience and ready-made products. Pangasius could therefore target on market segments that are interested in ready-to-eat products. Furthermore, ASC certification has become the main sustainability certification scheme for pangasius. This certification scheme has already become a buyer requirement for large retail and catering companies. ASC certification can be seen as an opportunity to promote good practices and to improve the image of the product. Besides the necessity of ASC certification of pangasius for the German market, organically produced pangasius has also been available since 2012. As there is a significant market niche for organic products in Germany, it could be worthwhile investigating the market potential of organic pangasius in Germany.

3.5 Fresh tuna in northern Europe (sushi, sashimi)

3.5.1 Background Story

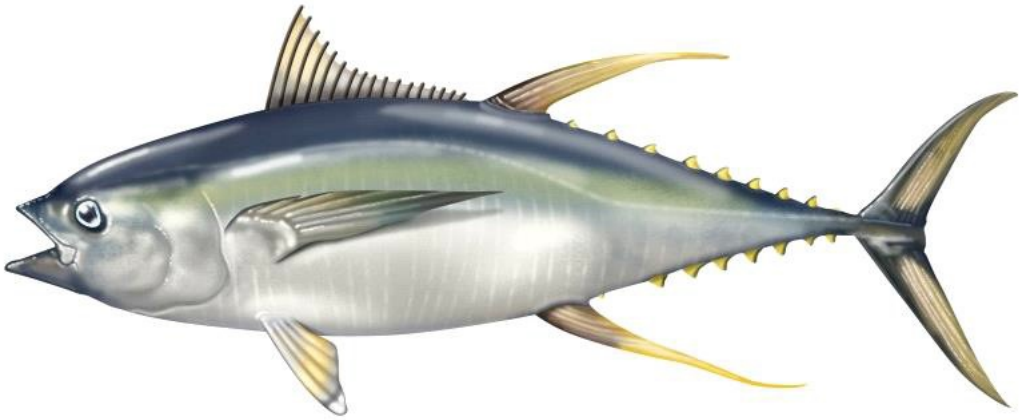

Figure 10. Yellowfin tuna

Traditionally, the main market in the EU for fresh tuna is southern Europe (France, Italy, and Spain). However, due to the growing popularity for Japanese food, with tuna an important element thereof, the market is growing in northern and eastern Europe. Fresh tuna is a high-value product in the EU. The five marketed tuna species are skipjack tuna (57% of catches), yellowfin tuna (28% of catches), bigeye tuna (9% of catches), albacore tuna (5% of catches), and bluefin tuna (1% of catches). Average prices for bluefin, albacore, and bigeye tuna increased between 2011 and 2013, while the price for yellowfin and skipjack tuna declined in the same period. The price changes may be caused by the availability of the product. Compared with 2010, prices of bluefin tuna faced the strongest price increase (69.1%), while the price of skipjack tunas fell by 17.5% (CBI, 2014c).

The market for sushi in Europe is still expanding and the number of Sushi restaurants is increasing rapidly. One of the reasons of the growing popularity of Japanese seafood in Europe is people's preference for healthier food in combination with the fact that people have become much less conservative in trying foreign foods (FAO, 2010). Sashimi is prepared from fresh raw tuna, or from tuna frozen at temperatures below -40°C immediately after capture. Bluefin, yellowfin and bigeye are mainly used as sashimi tuna. In 2010, the consumption of sashimi tuna in Europe was estimated at between 4,000 and 8,000 tons.

3.5.2 Scores on the drivers of product acceptance for fresh tuna

Table 5. Scores on the drivers of product acceptance for fresh tuna in Europe

Drivers of new product acceptance	Score
Product advantage	+
Product meets customer needs	+
Product innovativeness	+
Brand/ product category reputation	?
Market power	?
Market competitiveness	?
Market potential	+

Note: + means a positive effect, - is a negative effect and ? is an unknown effect.

It is clear that the success of fresh tuna is due to the introduction of Japanese cuisine (mainly sushi-sashimi) in the European market. The product has high scores on product innovativeness and on meeting customer needs. It is perceived as a high-value product in Europe (especially compared to processed and canned tuna) and is aligned to consumers' needs for trying foreign food (sashimi or sushi). Moreover, it is clear that there is still market potential, especially in rural areas (most of the Japanese restaurants are located in urban areas).

Tuna has a doubtful reputation, especially when it comes to sustainability. Since most tuna species are migratory, it is difficult to get them MSC-certified. However, sustainable tuna is on the rise. Eleven tuna fisheries are now certified, with 7 fisheries currently being assessed, and there are 330 labelled MSC tuna products available on the global market (CBI, 2014c). Alternatives are Friend of the Sea certification (more popular in southern Europe) or Fishery Improvement Project supervised by NGOs such as the World Wildlife Fund (WWF) or Sustainable Fisheries Partnership (SFP). WWF, for example, invests 10.3 million dollars a year in tuna projects.

4 Conclusion and implications

The objective of this deliverable has been to identify critical success factors for market acceptance for (new) seafood products in the European market. Based on a review of the main academic articles on new product success factors, we distinguished the following success factors: product advantage, product meets customer needs, product innovativeness, brand/ product category reputation, market power, market competitiveness and market potential. In addition to the description of some general tendencies on the European market for new fish products, we analyzed four specific cases on the basis of these factors.

Market orientation
Although all four cases showed relatively good market potential and they showed to have a good value for money (price-quality ratio) when introduced in the market, the success of products like fresh salmon and fresh tuna can be attributed to the fact that they offer a clear product advantage, and, maybe even more important, that they appeal to customers' needs. In order to accomplish that, companies offering new products within fish supply chains should be market oriented. *Market orientation* involves four important steps: (a) information generation on customers' needs, (b) taking that information into the business, (c) ensuring that this information is disseminated and shared among all relevant parties in the supply chain, and (d) responding to the market with new fish products that meet consumers' needs. As such, we recommend that, in the new product development process, companies listen selectively to "the voice of the customer" (Morrison et al., 2000). This process ensures that the best possible information is included in the innovation process, allowing aquaculture producers to look for real market opportunities to improve their business. This process also underlines that a 'one size fits all'-approach probably will not work: market orientation leads to the identification of different target groups with different wishes and needs (*i.e.*, market segments), within as well as across countries.

Product and brand reputation
Next to market orientation, another important factor of success is the reputation of the product. We saw in the case studies that especially the success of fresh salmon can be partly attributed to the fact that the product has a relatively good reputation. Notice that with regard to the focal species of the DIVERSIFY project, reputation is a major point of attention since farmed fish has to deal with a bad image, also because of farming conditions at fish farms in Asian and African countries. Instead, European aquaculture should start building a good reputation, also given the fact that farmed fish is in a good position to provide a sustainable advantage: they relieve pressure from the wild stocks and they provide more reliable and controlled supplies. Marketing communication plays an essential role in building brand and/or product reputation. The introduction of new aquaculture products should therefore be accompanied by a well thought out communication strategy.

Market power
Finally, market power appears to be an important aspect for successful product introduction. A more powerful industry with powerful brands is in a better position to secure shelf space and have greater resources to devote to supporting their new products. Especially retailers could play an important role in securing this market power: either through the introduction of private label brands or by partnering with fixed suppliers. The latter is especially relevant for smaller retailers, who have to rely on their trusted suppliers for the specialized transportation of fish. Notice that, in order to gain retailers' support, market demand is the main buying criterion for them. In addition, sustainability certification is increasingly used as an industry quality indicator: important is how farms are managed, and how the supply chain is managed (Van der Borgh et al., 2014).

In summary, what ultimately determines the success for new fish species is providing products that offer advantages that meet consumers' different needs, that can rely on a positive image and that have a strong market position based on cooperation between suppliers, the industry and retail.

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