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## **Information and Communications Technologies in New Zealand: Nine Case Studies**

### **Case Study 7: Southfresh/Freshnet B2B Exchange**

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## ***Southfresh/Freshnet B2B Exchange***

### ***Overview***

The Southfresh B2B exchange was created to connect customers and suppliers of tangible products. The software provides a platform for suppliers to post offers and customers to obtain information about product price and availability. It also provides 'back office' support functions such as invoice processing, dispatch management and stock management. Southfresh created this platform upon realisation that their internal brokerage processes could be automated, enabling lower cost and more timely transactions that would be beneficial to the New Zealand fish industry. This triggered entrepreneurial expansion into marketing a B2B portal that served a number of tangible products. The Southfresh portal was disestablished in 2002, as it was proving less successful than anticipated. The software was subsequently purchased by supermarket chain Foodstuffs, who re-branded it Freshnet and now operate it as a proprietary supply chain management system for perishable products such as fish and meat.

Although conceptually sound within its fish brokerage application, implementation of the Southfresh B2B exchange highlights many issues that businesses must consider in order to capitalise on innovative solutions both within and between industries. The case highlights a need to understand all the elements of a business process, including cost structures, relationships, the nature of the industry and the players in the market when both computerising existing processes and generalising successful models into other sectors.

The most cogent lessons from this case study hinge around participants knowing their business, their industry and the way that money is made in that industry. This is important not just for the design and implementation of ICTs, but also in the design of institutions such as marketplaces that serve these value chains. Some of the problems encountered by Southfresh can be partially explained by an incomplete understanding by the designers of the Southfresh marketplace of the economic reasons for the particular organisational forms prevailing in the fish industry, and the consequent incomplete understanding of the applicability of these models to other



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product markets. Whilst there are clearly other issues relating to the levels of understanding by the suppliers and buyers in this market in relation to their business models and transaction costs, if the operator of the marketplace does not understand the underlying economic structure of the particular marketplace then the marketplace is more likely to fail.

The Southfresh case is an example where an ICT application can perform perfectly to specifications, but the system fail due to inadequate marketplace design specifications. Nonetheless, it also demonstrates that learning from such experiences is a valuable step in a technology application and innovation lifecycle. Whilst the marketplace model in this application has failed, the technically well-designed software has been applied in a new business model that recognises its limitations as a marketplace and utilises the applications in a proprietary supply chain management system. Southfresh was an important and essential part of the product development cycle without which Foodstuffs would have never developed the applications or acquired the benefits of the technology.

### ***The Industry***

The New Zealand fishing industry is characterised by a quota system that limits the amount of fish of a particular type that can be harvested over a given period of time in any particular region. This places a limit on the total quantity of any species that is offered for sale in a given period. Sale of 'wet fish' by the 'harvesters' – those who catch fish or farm it - is strongly dominated by exporting. Suppliers prefer to export wherever possible because costs per kilogram are lower when fish is aggregated up into large lots in refrigerated containers for bulk shipping for export, than when distributed in low volumes to very dispersed locations around New Zealand. Demand is also more certain given that the markets to which the fish are exported (eg Asia) are significantly larger than the New Zealand market. Consequently, less than 10 percent of fish harvested in New Zealand is available to the domestic market.

As a consequence, supply of fish to the New Zealand consumer market (wholesale distribution, retail, restaurant, etc) is one where supply factors effectively determine both the quantity and types of fish available, and the prices at which this fish is sold.



Suppliers thus have some market power in the New Zealand fish industry. From the wholesale and retail perspective, therefore, players with little ability to influence the price of the product must look to other factors to differentiate themselves from competitors. Greater margins will be available to those who can secure cost economies in purchase and distribution processes whereas others may choose to increase profits by increasing throughput, generally by offering a wider variety of fish types to end consumers.

### *Information, Economics, Technology and the Evolution of the New Zealand Fish Supply Industry*

The current organisational forms in the New Zealand wholesale and retail fish industry have emerged as a consequence of the nature of the product, the status of information exchange about fish availability and quality, the geography of New Zealand and the size of the market. The model that has emerged is one of information brokerages, where information exchange mechanisms are used to link up buyers with suppliers.

The (relatively) small scale of the New Zealand market, the (relatively) small number of traders on both sides (ie buyers and sellers), and the large geographic spread of the country, has meant that even prior to the emergence of enabling technologies, open outcry 'fishmarkets' were never economically feasible. Instead a brokerage model, with lower transaction costs than the 'outcry' market could offer, emerged. Aggregation at a broker level reduces the transaction costs of retailers negotiating with individual suppliers, enables some scale economies in distribution to be captured (eg sharing transportation costs between end retailers, etc), and enables better price discovery.

Traditionally, brokers would buy fish from suppliers, in a classic wholesale model, and sell the fish on to buyers. Brokers effectively aggregate information about the offerings and prices of suppliers and provide this information to their customers, who then place orders with the broker to be fulfilled ultimately by the supplier. The broker thus takes on the role of the marketplace by acting as 'introducer' and 'clearing house', bringing suppliers and customers together, billing customers, paying suppliers, arranging delivery, guaranteeing title and quality of the fish to buyers and ensuring that suppliers



get paid. Brokers earn a commission on sales, collected from both buyers and sellers, typically collected from the accounts passing through the clearing house.

Furthermore, although there are multiple suppliers and buyers, with wide variation in size of business in any one location, the perishable nature of the product makes location and availability a critical issue for buyers. Historically, suppliers sold to brokers who supplied customers in the same location (ie the same town) as this enabled lower cost communication of quantity, variety and price information from supplier via the broker to the end consumer. The suppliers also 'knew' the broker, and therefore received an increased degree of certainty that fish supplied would be paid for than if the supplier was dealing with unknown end customers. It became the responsibility of the broker to 'know' his customers, in order to be sure of payment himself, and therefore ultimate payment to the supplier. Physical proximity also enabled the broker to physically inspect the quality of the fish, reducing the risk of the end customer being supplied with unsellable product, and helped ensure that the fish would be fresh on delivery.

The introduction of improved communications (eg the telephone) and improved storage and transportation services (eg refrigeration, rail freight, air freight) enabled suppliers and brokers in increasingly more distant locations to trade, and enabled brokers to arrange supply to customers who were physically distant. Personal relationships between traders still remained important as a 'guarantee' of payment to suppliers and of fish quality supplied to customers. The relatively small size of the New Zealand market means that mostly, market participants are known to each other, and that information about dishonest players would be quickly circulated around the industry. As communications to and about individual suppliers and end customers of brokers became more readily available (eg national business news distribution via newspapers, television, radio, paper, telephone and later electronic industry 'grapevines'), in a small market the need for brokers to 'vouch' for individual customers and suppliers became less important. The 'clearing house' role was removed, and sellers invoiced buyers directly for sales arranged by brokers.

As transport became relatively cheaper (eg introduction of door to door courier services), even the role of brokers as consolidators of orders to specific locations



became less important. The brokers' role became almost solely one of 'introducer' hence reducing the costs of suppliers advertising their offerings to customers. Customer could ascertain the availability and price of fish from suppliers and effectively trade directly with each other on the basis of information they received from the broker. The broker is remunerated typically with a commission paid by the supplier.

The result is that, in New Zealand in 2004, there is effectively a single 'marketplace' for supply of wet fish covering the entire country. Suppliers in Bluff, for example, trade with customers in Auckland, utilising a variety of communication methods. Typically, however, the exchanges are organised on the telephone or fax as a result of either information provided by a broker, or direct negotiation.

#### *Daily Supply and Procurement Processes*

Suppliers compile a daily list of all fish for sale, information about which is provided to brokers and customers. Orders are received typically over the phone, generating the creation of picking, packing, dispatch (eg liaison with couriers) and billing processes. Depending upon the systems employed by each supplier, these processes may be manual, computerised or a mixture of both. Throughout the day, stock status updates by fish type and quality must be maintained, and changes in prices and quantities communicated to brokers for those suppliers maintaining dual broker and individual customer sales. Typically, suppliers and brokers use manually managed computer spreadsheets for this process. Aged stock analysis is especially important given the very short shelf life of fresh fish.

Throughout the day, brokers must remain in communication with suppliers about the changing prices and quantities of fish available. Thus, when customers phone in, brokers can advise them of current supplier offers.

Customers (e.g. restaurant buyers, supermarket fish department buyers) generally begin the day by auditing current stock and assessing supply needs. For a typical supermarket fish department, this takes approximately an hour of buyer time each morning. Buyers then telephone brokers or suppliers to ascertain offers, negotiate prices and place orders. As the stated objective of retailers is to never be out of stock,



at least ten suppliers may be contacted on average to secure delivery. Each confirmed order generates receipt and accounts payable activities for the buyer.

### *Information Costs of Supply and Procurement*

For all participants, this process is costly in terms of time and the possibility of error. Phone calls are a significant cost, both in terms of call charges and time taken. It is difficult to isolate the actual amount of time taken for each call to determine the prescient facts, as some of the call content may comprise 'relationship building' or social interaction tasks. It is estimated that each call from a retailer to a broker or supplier lasts approximately three minutes where buyers are fish specialists. Inexperienced staff, however, may take longer. The supporting processes generated by activity may be either manual or computerised. The processes also require subsequent exchange of information both within and between firms. All of these processes take time, and all involve manual transcription of information between media (eg paper to paper, paper to computer) at some stage. This can lead to errors and inaccuracies, which raise costs to all parties. For fish purchasers in particular, facing few other opportunities to manage their costs of fish procurement, the incentives to reduce these costs are presumed to be high.

As identified above, suppliers generally set the prices for fish in the New Zealand market. With the current processes, it is difficult to determine if fish buyers have in fact secured fish at the best price. Time budgets rather than full information of the offers determine the price paid. The buyer will typically end up purchasing a fish type at the lowest price or best combination of desired factors (price, freshness, delivery conditions etc) discovered during the time available to collect information. There may have been a better offer available, but the method of collecting the information means that not all offers are transparent to all buyers. The order in which buyers contact sellers and brokers will also influence the range of offers the buyer is exposed to, and hence the likelihood of striking the 'best' deal. Hence employers of the fish buyers have little information from which to assess the performance of their buying staff. These employers must rely upon metrics such as market share changes and volumes of trade in order to determine whether the buyers are outperforming their competitors in the respective industries.



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## ***The Companies***

Within the context of the New Zealand industry, two significant players at the beginning of the 1990s were Southfresh and Foodstuffs. Southfresh was a fish broker, and Foodstuffs a supermarket chain buying fish suppliers from brokers or other suppliers, and on-selling it to retail customers.

### *Foodstuffs*

Foodstuffs is New Zealand's third largest business totally owned and operated by New Zealand interests. On the basis of Nielsen surveys, the Foodstuffs banner groups of New World, Pak'N Save and Write Price accounted for a 56.3 percent share of the New Zealand supermarket sales for the twelve months to 2 November 2003. The collective turnover of stores affiliated to the Foodstuffs companies is estimated to exceed \$7 billion annually (including GST). Staff employed by the Foodstuffs group, including retail members, is estimated to exceed 17,000.

The organisation consists of three separate, regionally based, retailer-owned co-operative companies, together with their Federation body, Foodstuffs (NZ) Ltd. The co-operatives are: Foodstuffs (Auckland) Ltd, which covers the North Island from Gisborne, Turangi, Taumarunui north; Foodstuffs (Wellington) Co-operative Society Ltd, which covers the southern half of the North Island; and Foodstuffs (South Island) Ltd which covers the entire South Island. The central warehouse purchases one third of the product line for its franchises. All other lines are purchased directly by the owner operators. Most Foodstuffs stores offer fresh fish products, although the range differs between stores. Whilst large stores have their own fish buyers, others rely upon supply from buyers based at other stores or at the regional co-operative. Fish buyers at the supermarkets have complete freedom to source fish from any supplier.

### *Southfresh*

Southfresh started out in 1990 as a small fish broking enterprise connecting suppliers to buyers. Its primary customers were initially retail outlets such as restaurants, grocery outlets and wholesalers. Some individual Foodstuffs supermarket buyers were Southfresh customers. The business was built upon the lifetime fish industry experience of CEO Toby Warren. However, Toby was also aware that the much-



reduced role of the broker was being further eroded as more business was being transacted directly between suppliers and customers. Brokers were effectively competing with both buyers and sellers, and were being “squeezed by both sides” in their endeavours to reduce margins further. Toby was faced with finding new ways of leveraging off Southfresh’s role as an information broker to stay in business.

### ***Decision to Implement Technology***

As an experienced fish broker, Toby was very familiar with the ‘information exchange’ role that the brokerage played in the New Zealand industry. Toby was also aware of the opportunities that computer technologies offered in the management of information. As his product was information, not surprisingly he looked to information management as a way of finding a new business rationale for Southfresh. Motivated by the challenge of reducing transaction costs in the industry, Southfresh began by automating and computerising its own operations. This began with the supply, order entry and accounting functions, using an SBT system. Up to seven Southfresh telesales staff would phone suppliers to ascertain product, quantity and price details and enter them into the database. Telesales staff would then supply the relevant details from the computer system to customers phoning in. As new technology became available, the system was upgraded to a “Stay-in-Front” application based on FoxPro database. Version three, however, based on Progress, was web-enabled to provide real time information to buyers and suppliers.

A web-enabled connection directly with customers and suppliers offered significant possibilities for the transaction cost savings that Southfresh had been enjoying to be shared amongst other participants in the industry. By extending the ability to suppliers to directly enter their own supply details, Toby saw that all of Southfresh, suppliers and customers would accrue timesavings from telephone conversations. Furthermore, suppliers would gain flexibility from being able to enter supply details at times that suited them, rather than when phoned by Southfresh telesales staff. Customers could scan all line items and all offers directly themselves, again at convenient times (eg during the evening), and be exposed to different products that they may not have previously considered purchasing. Customers would benefit from being able to see all available offers made via the Southfresh system and negotiate via the system directly



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with the preferred supplier by placing a 'bid'. The supplier would then assess the bid, accept or decline it and proceed with the necessary subsequent actions. While a negotiation was underway, stock status information made available to other buyers would reflect the stock tied up in the 'pending' transaction, so the buyer saw only uncommitted stock. This would save time for customers pursuing orders that could not be fulfilled due to prior sales not being recorded as a result of time delays in the previous system.

Clearly, the system offered significant savings for Southfresh, as the more suppliers and buyers that used the web interface, the lower the telesales costs at Southfresh. However, Toby also saw the potential for the system, having captured the information, to further reduce transaction costs for suppliers and customers by assuming management of accounting processes on behalf of the transactors (eg invoice production) and managing other processes such as preparation of picking, packing and dispatch documentation, liaising with couriers, preparation of receipt advices and other such activities. By centrally managing the information via the system, but displaying and printing the requisite information remotely, the Southfresh system could substantially reduce the transaction costs for buyers and suppliers who had not already installed automated systems to undertake these processes. Alternatively, the Southfresh system could provide direct transfer of information into computerised systems at these sites, reducing time and error relating to data capture and media transposition. Moreover, for customers, the potential existed for the system to create detailed order history reports and to undertake stock management for customers, creating automatic orders to specific criteria when stock fell below a specified level.

Toby Warren estimates that in total, transaction costs amount to around 10 percent of invoice value, meaning the potential for supplier and customer savings was substantial. Southfresh applications, he estimated, would reduce this to around 2 percent of invoice value. The value of improved management information, timeliness and the ability for customers to get better deals was real, but extremely difficult to quantify.

Southfresh commissioned the initial system development of the application from a software development house, then recruited developers to continue to develop the



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software portal in-house. The web portal was introduced as an option for suppliers and customers, whilst the business continued trading as a fish broker using traditional forms of communication such as the phone and personal visits. To run the new operation, Southfresh employed a team of 5 brokers and expanded to employ a team of two developers to enhance and modify the Varenti software application. Although the initial application was developed for fish sales, Toby was aware of the possibilities of using the same model for other products. The investment in the web marketplace was seen as a way of reducing the reliance of Southfresh solely on fish broking. Toby admits that he was aware that “there was more to life than fish”, and that he was looking towards creating a business “beyond fish”.

### ***Implementation of ICT***

The web portal, which went ‘live’ in 1999, introduced a new ‘business model’ for Southfresh. Whilst initially fish broking was the mainstay of the business, the company was now faced with not just with bringing together buyers and sellers of fish, but also selling a new way of introducing customers and suppliers. This involved not just selling the concepts of using the web-based ordering system, but also selling the concepts of Southfresh acting as much more than a broker by undertaking agencies for activities typically undertaken within the respective firms. In effect, Southfresh was asking customers and suppliers to ‘outsource’ these functions to the firm. Moreover, in undertaking support of applications within (especially) suppliers, the company was also becoming a supplier of software.

The first challenge for Southfresh was to convince existing brokerage suppliers and customers to participate in the web introduction process. This necessitated parties from both sides of the transaction signing up to become participants. Only registered suppliers and customers could participate. Sign-up to the web system incurred a registration fee, and was accompanied by a physical and online documentation including training modules, a half-hour teaching session in the system’s use over the phone, and provision of both online and phone help lines. Additional modules beyond the basic matching of suppliers and customers were fully optional, with software and hardware support provided according to the application. Learning by doing was the method of learning encouraged.



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The web ordering model very closely replicated the existing processes, in that suppliers held absolute control over decisions about who they sold to, and Southfresh was paid a fee per successful sale by the supplier, just as in the traditional broker model. Customers were free to continue phoning around to ascertain prices from suppliers and brokers not participating in the Southfresh process, whilst suppliers were free to negotiate deals with customers outside of the Southfresh system. Southfresh's success as a fish exchange thus relied upon the credibility of the brokerage signing up enough suppliers to make the transaction cost savings for buyers large enough to induce them to use the system. Savings for buyers would be greater the larger the number of suppliers enrolled, as the number of phone calls would reduce. More suppliers would also enable buyers to access a larger range of line items (around two hundred in total) in one place. In turn, suppliers would sign up if the transaction costs to them from the Southfresh system were less than those associated with other brokers or the phone orders system, and if they could be ensured that their products would be exposed to a larger number of buyers. This is a classic network effect.

As an 'information network', the aim of a brokerage in a competitive market such as Southfresh is to become the biggest in the market, becoming the point of first resort for both suppliers and buyers when they embark upon their search for a trade. If the brokerage has sufficient sign-on from the participants on both sides, it will 'tip' the market in its favour. The remaining buyers and sellers forego existing deal-making processes, and flock to sign up with the now dominant brokerage ('marketplace'), making it uneconomic for other brokerages to remain. This is the business model that has seen similar purely information-based brokerages (marketplaces) matching buyers and sellers, but not undertaking the clearing house functions, such as e-Bay and TradeMe, becoming dominant. Other marketplaces become dominant where there is some form of compulsion forcing the bulk of marketplace trades to occur via that mechanism. For example, a large manufacturer may refuse to deal with suppliers using any mechanism other than a specific marketplace, or an industry association may require participants to become compulsory members of the 'marketplace'.

Whilst Toby Warren says that Southfresh had no difficulty in signing up suppliers to the brokerage/marketplace, he observed significant reluctance at the buyer level. This



was despite the fact that the transaction cost savings at the buyer level were significant, and many benefited from the expanded range of products available. Mark Baker, General Manager, Information Management at Foodstuffs Auckland Limited confirms that benefits for customers were real, and extended beyond merely the transaction costs. He says that one supermarket in Auckland using the Southfresh system increased its seafood sales significantly by being able to increase its range and attract customers typically purchasing from a specialist fish seller to buy their fish from the supermarket. For a supermarket, this is especially important, as supermarket shoppers tend to buy items of more than one category during a visit. Increasing foot traffic is vital for supermarket, as increased foot traffic translates into the higher turnover so vital in the low margin supermarket business. By changing fish purchasing habits, the supermarket was able to also influence changes in the purchasing behaviours in other product categories. Fish shoppers were now buying their other grocery items from the Foodstuffs store rather than from a competitor, increasing the market share for that supermarket. Individual supermarket owners who could see these sorts of market share changes became very strong advocates for the system. Over a twelve-month period, sales brokered through Southfresh went from 13 percent to 30 percent of fish purchased by Foodstuffs Auckland stores.

### *Beyond Fish*

Undaunted by the lack of success in inducing fish buyers to join Southfresh, the company management began looking outside the fish business for other products for which the brokerage and transaction cost reduction system would be beneficial. The fish suppliers and buyers who used the system had proved the viability of the web model and reliability of the software and hardware systems that had been developed, so that was not in question. Neither was the knowledge and ability of the company staff, or the culture of the company in question. Most staff at Southfresh were tertiary qualified – according to Toby Warren “staff had an average of 1.3 degrees per person”. It had a functional structure where Information Technology personnel, Sales personnel and Accountants all interacted with the customer in their respective areas, but were a cohesive team with a strong commitment to making the company successful.

Household goods, building and hardware supplies, nursery plants, flowers and automotive parts offered a likely opportunity, as like the fish industry, these industries



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are characterised by the need to bring suppliers of materials together with retailers and wholesalers, and where the traditional model had been the use of the phone and personal relationships to bring together trading parties who then dealt with their own sale and purchase processes. Signing up buyers in this market was less of a problem, with major players Mitre 10, Placemakers, The Building Depot and Palmers signing on. The charging model for these customers became more flexible, with customers having the option of paying a 2.5 percent fee per transaction, as per the fish sales, or paying a monthly subscription. The subscription was negotiated between Southfresh and the client, and varied between participants depending upon the range of services offered. Typically, the subscription was between \$2000 and \$4000 per month<sup>i</sup>. Special terms and conditions could be negotiated. For example, one client concerned that data held by Southfresh could be sold on to third parties negotiated the retention of a property right to all information held by Southfresh that related to that company (the default clause was that all information held was the property of Southfresh, subject to the provisions of the Privacy Act and a standard agreement not to disclose it to other participants).

Southfresh management then looked to signing on other large customers. Existing supermarket buyers also needed to access supplies of many of the new goods handled by the marketplace. Whilst individual supermarkets expressed interest, getting sign-on or endorsement from the larger businesses such as Foodstuffs at the regional co-operative level, and chains such as the Warehouse, was much harder. These businesses tended to hold off from committing to the system, preferring to rely upon their own mechanisms to locate and negotiate with suppliers. Southfresh also considered expanding the product to cater for supermarket management of fresh produce (fruit and vegetables), but this elicited little support from supermarket chains either.

Growing into new markets, however, required the development of additional capacities. New software had to be developed and marketing effort had to be increased. Financing the venture required more capital. Endeavour Ventures, a venture capital firm, bought into Southfresh to fund the growth strategy<sup>ii</sup>. Unable to extract returns from the portal sufficient to satisfy the returns required by Endeavour Ventures, Southfresh ceased trading in August 2002.



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### *Rebirth as Freshnet*

The Southfresh story could easily have ended when the business ceased operating. However, the software applications and associated database technology managed by Southfresh were technically functioning exactly as required. Indeed, the software and operating processes were so reliable that the technology had operated continuously for two and a half years without a single fault. This is rare in computerised marketplaces and brokerages. The system thus had some salvage value for the hardware and software technology alone.

Furthermore, in the original fish marketplace, there were some key buyers who valued the benefits that Southfresh had delivered. In particular, a number of Foodstuffs supermarkets that had used the system to build up their market share saw the removal of the marketplace as a significant threat to their businesses. Using the power of their co-operative association, they pleaded with Foodstuffs national operations to buy the system. After a careful consideration of the costs and benefits, Foodstuffs purchased the Varenti software from Southfresh, hired two of the Southfresh system developers and re-opened the marketplace, rebranded as Freshnet. It retained UNISYS to host the system.

Mark Baker confirms the existence of a positive value to Foodstuffs in owning Freshnet. When Southfresh closed, Foodstuffs was faced with increased costs one way or another. Either the company could buy Southfresh, at the cost of assuming responsibility for owning and operating the software<sup>iii</sup>, or incur costs from reverting to the manual phone-based process. In trading off the differences, Foodstuffs also had to consider the effect that a change of owner and contractual relationships would have on the number and types of suppliers supporting the system. The purchase also had to be considered in the light of the rest of the group's operations. Fresh fish sales account for only 1 to 2 percent of turnover in a small store to 5 percent in a large one, so the purchase could not create significant additional risks to the business. Although the system had potential uses beyond seafood (for example, software that automates linkages between ordering and accounting operations offers potential in a business that processes thousands of paper invoices a week), immediate returns had to be generated from seafood alone to justify the investment. The cost-benefit trade-off was



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delicately poised, Mark says, until Foodstuffs management persuaded their largest seafood supplier to participate in the electronic system. This 'tipped' the balance in favour of purchasing the software.

### ***Restructuring to Accommodate ICT***

Freshnet, however, operates with a distinctly different business model to the third party-owned Southfresh brokerage model. Rather than operating the marketplace as a brokerage bringing together buyers and sellers, the software is now used as a proprietary system enabling Foodstuffs buyers to purchase products from the suppliers who wish to supply the co-operative. Whilst Foodstuffs fish buyers may still purchase fish using traditional methods, buyer use of Freshnet is being strongly advocated, especially within Foodstuffs Auckland. Under Foodstuffs ownership, Freshnet purchasing has expanded to include the purchase of boxed beef. Despite the investigations done by Southfresh into the use of the system for fresh fruit and vegetable purchases, Foodstuffs management has rejected use of Freshnet for these functions.

Freshnet is thus not fulfilling a 'marketplace' function of bringing buyers and sellers together as the Southfresh system did. The system is now an automated stock management, order processing and management information system for a group of three regional co-operatives covering New Zealand. Despite the lack of compulsion for either suppliers or buyers to use the system, Freshnet bears a closer resemblance to the 'powerful buyer requiring suppliers to use a specified model of supplying' than a marketplace. Indeed, the business model it most closely represents now is a supply chain management system. By buying the Varenti software and 'privatising' the system, Foodstuffs has ensured that the storeowners in its co-operatives have secured the transaction cost savings and product availability benefits, whilst 'closing out' rival supermarket chains from enjoying these benefits.

The Foodstuffs purchase of the software was thus a strategic investment in the highly competitive low margin supermarket industry. Benefits previously available to non-Foodstuffs buyer-users of the system, such as restaurants, have been lost. Fish suppliers who were previously using the system to supply non-Foodstuffs buyers have



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also lost benefits. However, it is plausible to conclude that, in a competitive market for the purchase of the system (it was offered for sale on the open market), the incentives for Foodstuffs to buy were greater than for any of the other marketplace participants to succeed either singly or collectively in outbidding Foodstuffs. Whilst it is acknowledged that Foodstuffs had a co-ordination advantage in that the co-operative was able to collectively represent the interests of many individual buyers in the purchase process, whereas suppliers and other purchasers did not necessarily have access to umbrella groups to undertake such negotiating, had the losses been sufficiently large that they threatened the viability of these businesses, then one might have expected such coalescing and co-operative bidding activities to occur. One might also have expected to see disadvantaged companies trying to work with Foodstuffs to maintain the products traded in the marketplace that Foodstuffs was not trading, such as automotive parts, once the sale to Foodstuffs was finalised. That this has not occurred confirms the market's assessment that the perceived benefits in total for all traders in the products supported by the Southfresh marketplace did not exceed the costs of owning and operating the system. In the perishable goods market segment, however, where positive benefits have been perceived, the system has been reincarnated.

### ***Analysis***

The demise of Southfresh and the rise of Freshnet raise the significant question of why the application was commercially unsustainable under one business model but is apparently thriving under another. There is little doubt that the technology (software and associated hardware) has performed exceptionally well to the specifications for which it was designed. Unlike many other marketplaces, the demise of Southfresh cannot be attributed to a lack of market participant confidence due to unreliability of the technology. Indeed, the actual system operation appears to be very efficiently designed, with operational costs at Foodstuffs comprising only 10 percent of the Information Technology operational resources. Neither can it be argued that the original concept of the marketplace failed because the actual benefits did not exceed actual costs, at least in respect of some participants in the fish market. Had this been the case, Foodstuffs would not have purchased it.



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Three significant explanations for the findings in this case are presented. The first relates to the size of the New Zealand marketplace. The other two relate to the design and operation of marketplaces<sup>iv</sup>. Technically well-designed marketplaces can fail if they cannot generate the confidence of participants. Marketplaces can also fail if the product design is inappropriate, or if the design of the market is inappropriate for the products being exchanged. An analysis of the Southfresh/Freshnet case facts indicates that there are elements of all of these factors at play. Whilst the presence of any may have been sufficient to topple the marketplace, the presence of all has compounded the viability problems faced by Southfresh. That some value has been salvaged through Freshnet has enabled some clarity to be gained about the relative importance of each.

### *Market Size*

The New Zealand fish industry is small and characterised by a small number of buyers and sellers. The New Zealand retail industry, and the grocery market in particular, is also small, and characterised by only two players of significant size. Supermarket stock purchasing has a significant influence on the buyer-side behaviours of the market. In Toby Warren's assessment, the Southfresh fish market was well endowed with suppliers. However, signing on buyers was a problem. Endorsement of Southfresh by one of the major supermarket players would have had a significant impact upon the desirability of additional suppliers signing up, thereby bringing along even more buyers with whom these suppliers traded.

Whilst individual Foodstuffs supermarkets signed on to Southfresh, at the corporate level management held off endorsing the system. Neither was endorsement forthcoming from the other major chain, Progressive Enterprises. Without participation from either of the major supermarket chains, in Mark Baker's assessment Southfresh lacked the critical mass offered by an 'anchor tenant' with sufficient retail market share to attract more suppliers to the marketplace. Thus, no matter how good the technology and the model, it could be interpreted that the inability of Southfresh to get corporate supermarket endorsement doomed it to fail in a concentrated buyer market. Conversely, under Foodstuffs ownership, with endorsement and encouragement from top management, investment in technology, training and service at the individual store



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level, and product champions supporting the implementation at middle management level, the product has achieved some success.

Failure to get an anchor tenant in the fish market, however, did not hinder the ability to secure key participants in the other products offered by Southfresh. Yet these markets too may be 'thin', either in supply or demand, due to the small size of New Zealand. Where participants are few, individual relationships may play a greater role in negotiating trades than price or availability alone. Security of continued production and supply for many businesses may mean that long-term contracts are the norm and 'spot trades' on a daily basis are the exception. Furthermore, the business case that Southfresh used to appeal to potential buyers and suppliers was predicated upon large transaction cost savings. These are more likely to accrue in markets where the volume of trades is high, and occurring on a very regular basis. The perishability of fish and uncertainty of daily supply were the critical factors that led to the pattern of daily spot trades as the natural method of fish trading in the first place rather than long-term contracts.

If the other product markets entered into lacked these characteristics, then it is much less likely that spot trades, such as those supported by Southfresh, would have been the economically efficient way of trading. If the number of exchanges for which the transaction cost savings were possible were been small, the potential number of participants for whom the marketplace offers benefits would be reduced. Moreover, businesses unable to afford the overheads of maintaining two (or more) transacting systems would most likely opt to retain the one that supports the greater earning capacity. If the normal method of trading was with long-term contracts, then Southfresh may have offered few benefits. These factors may have contributed to the reluctance of traders in products other than fish participating in the Southfresh market.

Whilst the authors have not examined any of the other industries in the same detail as the fish industry, some questions are raised about two. In the automotive parts industry, franchised dealers are often committed to using the proprietary parts management systems provided by the large vehicle brand distributors. This may reduce the size of the pool of potential buyers and sellers to those not already affiliated to other marketplaces. Furthermore, in the plant seedlings industry, where production



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lead times may be long, buyer tastes may change during the lead time, and the number of potential buyers is small, contractual commitment in advance may be required for breeders to make the investment in breeding specific, unusual plant variants, in order to avoid the risks of being left with unmarketable stock. These examples reinforce some differences in the New Zealand environment that may have led to Southfresh sign-ups being small, even though similar electronic marketplaces in more populous environments have succeeded.

Nonetheless, there are other elements of the marketplace that prevented other participants signing up, and thus undoubtedly contributed to the reluctance of potential 'anchor tenants' to participate.

#### *Gaining Participant Confidence In the Marketplace*

As outlined above, marketplaces act as 'networks', bringing together buyers and sellers. Marketplaces compete with each other on their ability to have buyers and sellers using them as the 'place of first resort' when seeking to trade. A critical mass of participants, both buyers and sellers, is required to make any marketplace function. If there are insufficient participants, the marketplace will fail, as it cannot cover its costs. Network effects tend to lead towards a small number of very large marketplaces for specific products.

Brokers are effectively competing marketplaces. As a broker, Southfresh was competing with other brokers to become the 'broker' or 'marketplace' of choice. The development of the original technology was spurred initially by a desire to lower broker operation costs in order to stay ahead of the competition. It was modelled on accruing benefits by reducing transaction costs. The extension of the initial system into an electronic 'marketplace' was predicated upon attracting buyers and sellers to use Southfresh as the broker of first choice as the system offered lower transaction costs to participants. Despite the clear benefits to the players who opted to participate, it would appear that Southfresh could not generate sufficient participation, even in the fish market, to become the either the broker of first choice or the broker that offered a better deal than direct dealing.



### *Trust in the Broker and the Fairness of the System*

Marketplaces can sometimes fail, even in the face of positive benefits, if the participants cannot trust the broker, or if as part of the process the participants expose themselves to risks of exploitation that they cannot manage, due to an inability to bind the activities of the broker either with contracts or through the rules of the marketplace.

As operator of the marketplace, Southfresh made the market rules, and participants either agreed to these rules or chose not to participate. On face value, there appears to be little difficulty with the 'market rules'. Participants were not precluded from using other methods of transacting with each other outside the market, so the marketplace was not 'holding them captive'. Hence it is unlikely that lack of 'trust' in the rules or the rule-maker was a significant factor in the demise of Southfresh.

Some marketplaces fail when the processes for matching buyers and sellers advantage some participants over others. If the processes are not transparent, then a lack of trust may develop, dissuading participants. However, as Southfresh was acting only as an introducer, with all deals being done directly between buyers and sellers on the basis of the Southfresh 'introduction', none of these trust problems were a factor. No 'automatic' deals were done without participant agreement, and no participants were forced to trade with each other as a result of any 'introduction' made by Southfresh. Nor were price or any other trading conditions set by any of the Southfresh processes. Participants could negotiate any deal as a result of the Southfresh 'introduction'. Neither was trust in Southfresh as a clearing house required, as the clearing house function had been rendered unnecessary by market participants having other methods to vouch for each other. Southfresh was purely a 'matcher'<sup>v</sup>.

However, moving from a pure brokerage model to one where the Southfresh system was undertaking operational tasks on behalf of participants (eg stock management, accounting data interfaces) did require the participants to develop a different commercial relationship with the marketplace. For many participants, these types of relationships would be 'breaking new commercial ground'. Without an understanding or experience of these types of relationships, Southfresh was faced with the task of both educating the participants in these types of relationships and attaining sufficient trust to embark on the first contract. For those who took the risk, learning occurred,



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trust developed and the benefits accrued. Undoubtedly, however, some potential participants were reluctant to take the risk, despite the presence of benefits. The number of participants in this category was probably sufficient to prevent the Southfresh marketplace in fish, at least, from reaching the critical mass necessary to engender sufficient confidence in these reluctant participants to overcome their fears and 'trust' the system. Toby Warren acknowledges that this may have been a problem, as Southfresh did not have the proven track record, and was competing against large consulting and outsourcing firms to sell both the marketplace and the software.

Toby Warren also believes, from his experiences marketing Southfresh, that the 'fear' problems were exacerbated by a lack of business skills required to both understand the value chain and the source of costs in the respective businesses, and the methods of making decisions where risk assessments are involved amongst some potential participants. Irrational fears associated with low cost, low probability risks and an inability to conceptualise the entire value chain led, he believes, to many decisions not to participate. This was especially evident with buyers for large businesses.

Often the decision to participate would be made by the fish department buyer, who was aware only of the savings directly relevant to the fish buying function. The requisite technology (a PC and an internet connection) was seen as a cost, in many cases one which exceeded buyer benefits, but not necessarily organisational benefits. However, participation would be dismissed merely on the basis of the costs and benefits faced by the buyer, as the buyer was remunerated on the basis of the buying department budget alone and potential Southfresh investment was seen as a project in the domain of the buyer. Without the understanding of the wider business (eg the whole supermarket), buyers were also unable to know who in the business to refer the project on to.

Moreover, Toby also believes that the lack of organizational power held by fish department buyers within each supermarket meant that even when the potentials were recognized and the projects forwarded 'up', fish buyers were not in a sufficiently strong position to advocate for the project. In contrast, when sales approaches were made to accountants, the probability of a successful sign-up was greater. Accountants were



“talking the same language” of transaction cost savings, had a broader understanding of the business, and could make more knowledgeable assessments about the risks. The down-side, however, was that accountant-driven sales did not always see the buyers appropriately resourced to implement the system in their departments, due to their low status. For example, access to Internet connections outside work hours to ‘get ahead’ in the tasks for the day was problematic for some buyers.

It is also conceivable that potential participants who lacked the ability to measure and assess the benefits themselves may have doubted Southfresh’s estimates of potential benefits. This might explain why, under management sponsorship, Foodstuffs has been able to induce the same fish buyers that Southfresh could not convince, to voluntarily use the same, albeit rebranded, automated system to receive the same benefits. This merely reflects the well-proven economic principle that an uninformed principal places greater trust in the same information when provided by an agent with whom he has an established trading history or contractual relationship than when it is provided by a stranger with whom he has neither.

One area where trust in Southfresh may have been problematic for participants related to the use of information collected by Southfresh about individual businesses in the process of their transacting through the system, or having other tasks undertaken by the Southfresh system. Despite the provisions of the Privacy Act and Southfresh’s privacy policy and guarantees, some potential participants fear the potential use or accidental disclosure of their information by third parties. Once again, Toby Warren believes that a lack of understanding by individuals about the value of their information and the ability to participate in the system with contractual provisions about the use of information, prevented sign-up. Although he admits that the pro forma contract vested all property rights to information collected in Southfresh, one company that was uncomfortable with this clause negotiated a variation that enabled the retention of a property right in the information collected. Rather than lose the customer, Southfresh management struck an acceptable arrangement with the participant.

### *Trust In the Technology*

Despite the proven operational reliability record of the Southfresh technology, Toby Warren believes that there were still a small number of people who feared the



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automated and computerized Internet model because they did not understand the technology, or who merely preferred not to use it. For example, Organic Food general manager Lachie Revell is quoted as never having had a great deal of faith in the system, even though transacting around \$60,000 per month on Southfresh. The concern was with the way in which the computerized brokering removed personal contact: “In our market you’re probably better off with face-to-face contact”<sup>vi</sup>. Whilst the system perfectly substituted for the crucial information exchange needed for the transaction to occur, it did not substitute for the human contact.

Although it is debatable that this human contact added any value to the individual transaction, it may have increased job satisfaction for buyers to talk to a human being. By deliberately opting not to participate in the computerized system, market participants are signalling that they are placing a value on this human contact to the extent of the total benefits foregone to maintain the existing way of trading. Likewise, Revell’s comment that “chefs find it easier to use the phone; they’re not online all the time”<sup>vii</sup> can also be interpreted either as a statement that there were additional costs in user processes that meant that the benefits accrued were not equal in all business types, or that some potential users are prepared to pay a price (again foregone net benefits) to avoid having to confront using a technology with which they are uncomfortable.

That such behaviours occur is not necessarily a failure of the system. However, Toby Warren argues that unless the abstainers are able to conceptualise these decisions as the price paid for choice, then reluctance to use the technology becomes a default excuse. Only education in business process understanding will allow participants to assess the cost of their abstention, and then assess whether the choice is worth the price.

Whilst the technology itself was reliable, it is conceivable that some potential participants may not have chosen to use the web portal due to lack of access to infrastructure. However, even here, Toby argues that this was never really a significant factor. All participants already transacted by telephone so had access to a dial-up connection. Web pages were also designed to have low bandwidth requirement, enabling the system to run satisfactorily on dial-up Internet connections



using a 56kbps modem. If there were issues with allowing staff access to the Internet, these were internal organizational barriers rather than system problems. As Toby identifies, the staff involved were hardly likely to be subject to toll bars as they had to telephone suppliers all around New Zealand. Staff who could be trusted to not abuse a telephone privilege could most likely also be trusted not to abuse the Internet connection, especially a dial-up connection on a business line, where calls to the ISP could be monitored just like any other telephone call.

### *Becoming the Dominant Broker*

Ultimately, the viability of the fish marketplace relied upon whether the model was indeed the lowest transaction cost/highest benefit model available. Therefore, its performance must be measured against the 'competition for the marketplace'. As Toby Warren has articulated, the Southfresh brokerage was competing principally not with other brokers, but with direct negotiation between buyers and sellers. Improved communication technologies (principally the telephone and fax) were leading to the disintermediation of the industry. In many ways, the Southfresh electronic marketplace could be interpreted not as the 'introduction of a brand new electronic marketplace', but as a 'last-ditch attempt to retain the role of the broker in the New Zealand fish industry'. In effect, web-based technology offered the brokerage model a lifeline as it offered a cheaper way of communicating supply information to buyers than the current one of fielding telephone calls and phoning suppliers<sup>viii</sup>.

Neither was Southfresh actually providing all of the components that typically distinguish marketplaces from brokerages. As previously identified, Southfresh was acting only as a 'matcher', not as a true 'market maker' as defined in Evans (2001)<sup>ix</sup>:

*"To assess B2B exchanges it is useful to understand what determines whether trade is conducted privately through negotiated transactions – perhaps through dealers and brokers – or through transactions at publicly observable prices posted on some 'market maker' exchange. Potentially, all the factors that are important in the contract enter the calculation. In particular, the transaction costs of search, negotiation, monitoring and enforcement all affect the ultimate determination. Private agreements will specify the exchange of goods and the concomitant exchange of money and will provide for surety in various extents and ways. Typically, private agreements are not directly replaceable with an exchange that simply posts prices. If it is to duplicate private, or broker, agreements, the B2B must provide enforceable financial surety to the extent that a private agreement does. In short, the economic principles of contracting cannot be bypassed if B2B exchanges are to provide superior services to those of brokers or direct B2B search and transaction."*



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In competing with its style of exchange which replicated only the brokerage function, Southfresh was offering both buyers and suppliers transaction cost savings only in respect of search, with the back-office savings from accounting and distribution functions being offered as an optional extra. Whilst replicating the search function may have enabled the company to compete at lower margins with other brokers, it did not provide any additional benefits in respect of other aspects of the trade – for example, negotiating, monitoring and enforcement – that might be expected in typical marketplaces. These functions were not present in the New Zealand brokerage model as the industry had already benefited from other factors that reduced these costs - for example, the small size of New Zealand market, and the fact that ‘everybody knew each other’ had removed the necessity for any instruments to act as guarantees of contractual completion. Thus, Southfresh was struggling to offer any additional benefits to compete with direct contracting apart from reduction in search costs and additional ‘back-office’ functions that arose from, but were not critical to sealing, the transaction.

Nonetheless, Rust and Hall (2001)<sup>x</sup>, cited in Evans (2001), show that a market maker that acts only as an ‘information gatekeeper’, and holds no inventories, can be profitable, economically efficient, generate higher trading volumes and reduce price dispersion if it has a lower marginal cost of processing transactions than the corresponding costs of the least efficient broker. Such a broker will not necessarily drive all brokers out of the market – some will remain and have the effect of limiting the power of the ‘market maker’. Hence, the potential existed for Southfresh to be successful if its search costs were indeed lower than the alternatives.

It is debatable even whether the savings from reduced search costs were necessarily as large as the Southfresh proprietors may have hoped or portrayed to customers. Fish buyers were already phoning a mixture of brokers and suppliers, as they could never be sure that any one broker had canvassed a sufficiently large number of suppliers to ensure that the buyer received a good sample of the available offers. Despite Southfresh’s claim to have significant support from suppliers, unless a critical mass of significant suppliers were participating in the Southfresh market, Southfresh buyers would still be making phone calls to suppliers with whom they regularly traded whose offerings were not represented on the web system. Only if the Southfresh



system was the only ordering route used would buyers gain full transaction cost savings. Buyers would only have the confidence to use Southfresh alone if the costs of missing out on a better deal than could be negotiated through the Southfresh 'introduction' were less than the costs of phoning another broker or supplier. As long as a sufficiently large number of suppliers 'held out', then there was always a benefit in making at least one other phone call in addition to using the Southfresh website, and the net buyer benefits were less than the full potential. This probably explains why buyers were reluctant to recommend use of the system, because until Southfresh was the dominant marketplace, the reduction in buyer workload was less than if more suppliers were represented, and may have been minimal. Foodstuffs, whose major supplier was not using Southfresh, provides evidence of holdout by significant suppliers. Foodstuff's ownership of Freshnet was only worthwhile from a transaction cost perspective once this supplier agreed to participate.

Furthermore, the benefits of using Southfresh would also have to outweigh the benefits customers already received from direct deals with suppliers (e.g. discounts for buying all fish types from the one supplier. As long as suppliers retained the ability to transact deals outside the Southfresh system, and trades occurred in stock that was not listed on the web exchange, the credibility of the entire marketplace was at stake. Just as with buyers, suppliers would also be dealing with customers not using Southfresh. Suppliers that chose not to join may have had lower transaction costs anyway, and if the workload was not substantially reduced because they were still on the phone to buyers and brokers, the lack of the need to pay the 2.5 percent commission to Southfresh may have become a significant 'decider'. In a marketplace where suppliers meet the costs, it is essential to get 'buy-in' first from that sector. Southfresh's initial supplier base would have most probably been the suppliers with which it already had brokerage agreements. To build up its supplier base, it would have had to convince suppliers using other brokerages to give Southfresh an exclusive brokerage contract or offer a deal that bettered suppliers dealing directly. The first objective the marketplace should have been to eliminate all other brokers and then to eliminate trades off-market. This would have provided the ultimate monopoly brokerage, thereby ensuring that benefits to buyers were highest.



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Ironically, it also appears that Southfresh's desire not to require any compulsion on suppliers or buyers in order to reduce the 'threat' of a 'new' way of trading may have contributed to the 'undoing' of the marketplace. B2B marketplaces often overcome the 'problem' of the viability of new marketplaces being able establishing the critical mass to 'tip' the market in the presence of existing trading methods by whole industries collectively undertaking together to participate in the marketplace, thereby overcoming the problem of only slow or partial accrual of benefits. It is for this reason that industry associations often take the lead in developing marketplaces, as membership of the association brings with it the obligation to follow one set of rules and to trade in the one place. Likewise, rather than run the risk of losing potential benefits whilst competitive pressures move participants towards new, more efficient marketplaces, participants will voluntarily (or via an industry association, compulsorily) agree not to trade in ways other than those of the two or three market models, and let competitive forces determine which one 'tips' the industry in its favour. This way of developing marketplaces is independent of the mechanism under which the marketplace operates – physical or electronic. For similar reasons, physical markets in a town would fail equally if the organizer of the market could not guarantee that all traders would meet at the town square, rather than having mini-markets on every street corner.

In sum, therefore, it would appear that Southfresh lacked the ability to provide buyers with sufficient supplier participation assurances, even in the fish market, to cause the market to 'tip' in its favour. Without industry contacts, ensuring large scale 'buy-in' by either suppliers or buyers in the new product markets that it expanded into was a challenge. In short, in the products it chose to participate in, it could not generate a sufficiently compelling brokerage offer to become the dominant marketplace.

#### *Nature of Price Discovery in Southfresh*

The Southfresh marketplace model also differs from traditional two-sided markets in its methods of price discovery. Southfresh provided only sellers with the ability to post offers to sell. Buyers cannot post bids to buy. Rather, buyers search through a range of offers and then select a seller with which to negotiate. The Southfresh model, therefore, is not like traditional commodity markets, that take on the role of allowing a market price to be determined or 'discovered' for each type of fish on a daily basis. It does not even follow the e-Bay or TradeMe model of introductions, in that buyers



compete against each other for an item offered. Rather, the Southfresh model more closely resembles a shop or village market, where suppliers display their wares and negotiate with buyers on a 'first come, first served' basis, using the initial offer as a starting point for negotiation.

'First come, first served' markets reduce transaction costs for the buyer as they reduce the cost of discovering the range of offers available – all available goods are displayed in one place. If the transaction costs for buyers undertaking discovery are high, competing suppliers in such a marketplace may be able to charge higher prices than others, as the costs to the buyer of ascertaining whether a better deal is available are high. However, when a buyer can easily assess all offers (eg at the market square, or on an internet exchange), the ability for any supplier to offer product for sale at a price that is higher than the lowest offer is reduced. Thus, marketplaces that reduce transaction costs for buyers by making price discovery easier also potentially reduce the margins available to suppliers who have previously relied upon the high costs of search to discourage buyers from passing by his offer. This price reduction from altered search costs comprises part of the 'lower price' benefit that Southfresh offered buyers in addition to the lower transaction costs.

However, lower prices to consumers are not guaranteed outcomes of such marketplaces. The marketplace also increases the ability for suppliers to act collusively to keep prices high. Cheap price discovery by buyers also enables cheap and rapid discovery by suppliers of others' offers. This mechanism makes identification of suppliers reneging on collusive pricing agreements easier to detect. If the supply side of the industry has sufficient players to make collusion unwieldy, then the possibility of it occurring is less than if there are only a small number of players. In the absence of any established relationships between suppliers, it is possible that the costs of establishing such an agreement in the New Zealand fish industry were high. This would provide a double disincentive discouraging suppliers from joining the marketplace – they might lose access to small price premia already enjoyed from higher search costs and would find it costly (and in New Zealand, *per se* illegal under the Commerce Act) to enter a collusive agreement to recoup the losses.



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### *Lack of Real Price Transparency*

Whilst the Southfresh model promised greater price transparency and lower transaction costs for buyers, its price discovery design may have limited its ability to actually deliver the substantially lower prices that auction-based marketplaces have achieved, or that Southfresh promised. Rather, the posted price was used principally to signal prices for the opening round of a multi-player, multi-round, repeated game<sup>xi</sup>. Potentially, a supplier could sell fish of an identical type to several buyers in one day at different prices, even though the buyers all initially viewed the same offer on Southfresh.

Marketplaces that operate on an auction-type basis enable buyers to observe the bids of other buyers and adjust their bidding behaviour accordingly. The 'private' nature of the deals struck 'off market' or 'behind closed screens' on the Southfresh system prevented buyers and suppliers from observing the prices at which trades actually occurred. Prices displayed by suppliers were not necessarily the final prices paid by buyers. The real negotiating could continue in private. Southfresh still got the commission if the sale was completed on the basis of a Southfresh introduction, due to the order and its completion being tracked by the computerised system, but the prices paid were never revealed to other buyers, as occurs in typical commodity markets (for example, the Stock Exchange posts highest, lowest and closing prices each day on each share type transacted). Hence, buyer expectations of prices for various types of fish could not be informed by the prices actually paid by other buyers. Nor could other suppliers be informed about the levels at which to price their offers by any willingness to pay information supplied by buyers. The prices displayed were only the opening offers for the day, or any revisions made to the offers by suppliers in the course of the day. Indeed, failure to include daily marketplace statistics may actually have reduced the efficiency of the marketplace<sup>xii</sup>.

### *Marketplace Design and Market Power*

Traded price opacity was probably necessary in the design of the Southfresh market in order to get any suppliers at all to participate. It is also perfectly replicated the processes of the brokerage model. It also ensured that the broker would be paid for transactions that were completed on the basis of the introduction. That suppliers paid the commissions is also indicative of the nature of the New Zealand market. For the



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most part, suppliers determine quantities available, and hence price. Price-taking buyers are always 'shopping around' for better deals, so have no real loyalty to brokers. Hence, they are unlikely to pay for a typical 'brokerage' model. Suppliers pay brokers to reduce their transaction costs by limiting enquiries from buyers that are never going to result in a trade. Thus, the benefits of the system appear to disproportionately favour buyers. Yet, buyers paid few of the costs beyond a licence to join the market. Suppliers would choose to participate only if the returns were at least neutral to them. Providing a system that perfectly replicated the 'status quo' from the suppliers' perspective was thus less threatening and more likely to gain support.

Thus, despite claims of it being a generic B2B electronic exchange that offered benefits similar to those in the fish market to other product markets, Southfresh was in effect a highly specialized marketplace designed for a perishable, frequently-traded product where fish suppliers held the balance of market power. However, even in that market, it appears to have lacked the fundamental economic underpinnings to succeed. Funded by supplier commissions, it needed to attract a critical mass of suppliers in order to offer the transaction cost benefits upon which it was marketed to buyers. However, the risks that a large, industry-wide transacting forum would emerge threatened margins that suppliers, who held some market power, could command. Hence, despite replicating the existing brokerage model as closely as possible, supplier commitment appears to have been insufficient to provide real transaction cost reductions of the size that would justify more buyers joining. Even if a critical mass of sellers and buyers joined on the basis of transaction cost savings alone, the promised price reduction benefits would be limited by the ability of trades to occur 'off-market'. Indeed, a single marketplace may have actually enabled suppliers to collaborate on the basis of offers posted to keep prices up, as the discovery process revealed neither buyer bids nor prices paid.

The development of Southfresh into other product markets was also likely to be problematic as the brokerage model is not necessarily the most appropriate for product markets where neither supplier nor buyer has market power. Such marketplaces require mechanisms that allow multiple suppliers and buyers to interact with bids and offers to reach a price – that is, a classic auction. The 'one to one' 'buyer to seller' matching of the Southfresh model makes no allowance for products that fit this



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category. Its appeal in other product markets again relied upon getting a critical mass of participants. In 'thin markets', the sustainability of the model required signing up large players on both sides who traded with each other regularly (eg, daily or weekly, rather than monthly or sporadically) in order to glean significant transaction cost savings, irrespective of the effect of participation on the price of the product. Otherwise, the only other appeal is for suppliers to use it as the 'marketplace of last resort', to sell stock that cannot be sold elsewhere, or for buyers who have been unable to secure purchases via private negotiation. As these participants are not necessarily reliable or regular traders, then the ability of the marketplace to recover its costs on a day-to-day basis, and thus its sustainability, is put to the test. Furthermore, it is competing against other marketplaces of last resort, such as e-Bay and TradeMe for these effectively 'casual' customers.

There is little evidence of significant supplier market power in relation to any of the other product markets into which Southfresh ventured to the same extent as the fish market. If anything, it is more likely that there may have been some buyer power in the home products market in relation to certain lines, as large chains such as Mitre 10 and Placemakers have large market share and may have the luxury of being able to pick amongst suppliers. If this was indeed the case, it may have been a disincentive for suppliers of these products to use Southfresh, in order to prevent their offers becoming transparent to competitors.

With the market design not being conducive to real price discovery, the solitary benefit remaining was the ability to use the system merely to reduce transaction costs in the 'back office' functions. In other words, this required Southfresh giving up the pretence of it being a marketplace at all, and selling the system primarily as a way of reducing transaction costs between parties that trade regularly. Whilst Southfresh technology offered that possibility, there was no role for a third party broker if the parties were already transacting. Southfresh could assist such companies only by acting as a 'transaction bureau'. However, in this market, it was competing with a host of other outsourcing companies. It could also sell licences and install components of the system for firms to run on their own virtual private networks. However, in this market it was competing with software providers. Whilst the company was staffed with skilled individuals, its market profile positioned it as neither an outsourcing bureau nor a



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software supplier. It was primarily a brokerage selling subscriptions to a marketplace, with the capability of offering other services.

### *Acceptance of the Supply Chain Management Focus*

Whilst undoubtedly all of the factors identified in the above analysis have contributed to some extent to the fate of Southfresh, the marketplace design issues appear to pose core difficulties that go far beyond the nature of the technologies used, and the willingness of market participants to engage in electronic trading. Whilst elements of the electronic nature of the marketplace have raised some interesting symptoms that have gained a significant amount of press coverage, the underlying design issues transcend technologies. The fish market may have been sustainable in a different set of economic conditions, but the fundamental tensions between the role of buyers and sellers, and the role of marketplaces as information discovery mechanisms do not change. Technologies change the costs, may offer some possibilities to change the balance of power in industries between buyers and sellers, and even alter the models of doing business (eg disintermediation). However, they do not change the fundamental economic conditions that make up industries. No amount of technological intervention can alter the fundamental fact that quota and export markets give price-setting capability to suppliers in the New Zealand fish industry. Neither can technology alter the scale of New Zealand that has led to an oligopoly in the supermarket business (although technologies have made it easier for individual businesses to capture scale economies by lowering transaction costs that have enabled large businesses to be the most economic). As Evans (2001) enunciates, “the problem with most public B2B exchanges has been that while they enabled matching of buyers and sellers they did not duplicate the key contractual requirements of transactions”<sup>xiii</sup>.

Thus, there is almost a sense of competitive and economic inevitability that Southfresh has found a ‘second life’ at Foodstuffs. Transaction cost reductions to buyers was always a key component of the Southfresh design. By eliminating the middleman, and making the technology exclusive, Foodstuffs is indeed using Freshnet principally as a transaction cost reducer by operating it as a proprietary supply chain management system. Foodstuffs share of the supermarket industry is sufficient that it could, if it chose, apply subtle pressure to suppliers to either use the Freshnet system or forego the possibility of selling to half the New Zealand supermarket fresh fish customers.



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Thus, a solitary buyer may be able to succeed where Southfresh failed, by using its large market share to get all fish suppliers eventually registering on Freshnet. Thus, Foodstuffs will get benefits from lower transaction costs and cheap discovery of the lowest offer, but in a way that does not disclose the Foodstuffs offers and prices to other buyers. The benefits of greater range and spin-offs for individual supermarket market shares continue. Foodstuffs can also use the stock management and invoice-processing functions to better manage inventories and costs. Meanwhile, supermarket customers benefit from a wider range of product.

Whether by design or accident, however, Foodstuffs has so far only used Freshnet for daily ordering processes for fresh fish and a limited number of meat products. Ironically, these are two markets where export criteria grant suppliers a significant degree of market power in local supply. Despite Southfresh endeavours, Mark Baker says Foodstuffs management has resisted the temptation to use Freshnet for fresh fruit and vegetables. Mark uses a transaction cost argument to support not using the system here, as he says the size of the fruit and vegetable departments, and the number of line items mean it is still more efficient for buyers to use paper data capture system and central negotiations to stock individual departments.

However, it is also possible that the number of products mask a variety of product-related issues which mean that the 'one size for all' model of suppliers posting prices may not be appropriate for all items. For example, the best way to trade in tomatoes, where suppliers are presumed to have little market power, may differ from the market for some rare produce such as orchid blooms or products that are sourced from overseas, such as mangoes. Furthermore, some products such as flowers may be subject to supply on the world market, to the extent that all goods supplied on the spot market are purchased at the current world price for that day, irrespective of the actual physical supplier. In this case, playing suppliers off against each other is futile. He also cites significant market model differences in the way deals are negotiated in grocery items as a justification for the model not being extended into other products. For example, whilst central co-operative staff may negotiate bulk deals for basic stock, individual stores can also play off individual company representatives against one another to negotiate even better one-off deals on the basis of factors such as representatives needing to reach a certain number of sales to meet monthly targets or



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bonus reward status. Information leading to this sort of deal is unlikely to be the type of information posted as offers on the Freshnet system, and reflects the different market power dynamics of the participants in grocery negotiations.

Notwithstanding the design issues, Mark Baker acknowledges that in taking on Freshnet, Foodstuffs now has a company-wide incentive to make it work, which wasn't present when it was operated by Southfresh. Support, training and encouragement in its use at both store and supplier level is being strongly advocated by regional fish buyers, with particular success in the Auckland area, due to the efforts of one especially ardent individual. Implementation of Freshnet has also benefited from the simultaneous introduction of computers and scales into all stores in order to comply with new food labelling regulations. Whereas the Southfresh sales required fish departments to have a dedicated computer, the additional applications have enabled the fixed and operational costs of the computer to be shared by a number of departments.

### ***Implications for Marketplaces***

Design of marketplaces is not just the simple task of designing a mechanism that brings buyers and sellers together. It is a complex process that requires a deep understanding of the nature of the products, the economics of supply and demand for that product, the relationships between the participants, the role of information in the relationships between participants, the role of the marketplace itself as a source of information and a distribution mechanism of information to participants, and the ability of the marketplace to enable the contractual requirements of transactions to be met. ICTs can play many different roles in supporting the activities of marketplace participants other than merely providing the platform on which they meet. If the design of the marketplace and the utilisation of ICTs in the marketplace operation do not recognize all of these factors, then failures will occur. Although market participants have significant knowledge about some industries, especially markets for especially problematic products such as electricity, the design of effective and efficient marketplaces requires a blend of economic and industry knowledge. Designing governance and trading rules is likely to be far more important to a marketplace than selecting the electronic platform on which to operate it. If the governance rules, the



product design or the market structure are inappropriate, then eventually the faults will be exposed. ICTs often serve only to speed up the time it takes to expose the faults. Good marketplace design thus requires the participation of all parties – buyers, sellers, brokers, etc – and experts in the economics of marketplace design. Neglecting to include any one of these will likely raise the risk of failure.

Marketplaces are continually evolving. Collapse of a marketplace is a difficult thing for the parties involved at the time. However, collapse allows learning to occur that will ultimately lead to better designs. Marketplaces may also collapse not because the original design was poor, but because changes in the environment have rendered the original models inappropriate. Operators of marketplaces must therefore be continually scanning the environment and reviewing their rules, structures and processes in light of environmental changes in order to anticipate likely problems and make the necessary adjustments.

### ***Implications for Policy***

Government is a participant in many marketplaces. Thus it has multiple roles to fulfil in both marketplace design and operation. It is also a party with significant power, in that it has the legislative ability to influence marketplace design, rule setting and operational conditions. Exertion of these powers necessarily brings with it the responsibility of understanding the consequences for the marketplace of such actions. As marketplaces are often very complex, this responsibility is not necessarily easily managed at the political level of government. Appropriate interventions or lack of them are not always easily explained to voters. This is even harder to do when participatory roles conflict with regulatory ones. Thus the standard of understanding of markets where Government participates, and the level of disclosure of the rationale for action, is possibly greater for Government than for any other participant.

More directly, the role of Government as owner of e-procurement applications needs to be assessed against the sorts of tests of marketplace design raised here, and by authors such as McMillan. Making it an 'e' model is no guarantee of success if the underlying rationale for having a marketplace at all has not been soundly assessed.



There is nothing special about 'e' marketplaces that render them immune to the forces that have always shaped the design of marketplaces, or the benefits of analysis based upon the fundamental economics of the trading markets that they serve.

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<sup>i</sup> <http://www.istart.co.nz/index>

<sup>ii</sup> Ibid.

<sup>iii</sup> As commissions in the fish-trading model were paid by suppliers, fish buyers were achieving savings without having to outlay any costs other than those incurred for additional services (eg automated exchange of accounting data) from Southfresh.

<sup>iv</sup> For a general discussion of the design and operation of marketplaces, see: McMillan, J. *Reinventing the Bazaar: A Natural History of Markets*. WW Norton & Co. New York, 2002.

<sup>v</sup> Evans, Lewis. 2001. *The New Economy: A Force for Competition or Market Power?*. Paper presented at the 27<sup>th</sup> Pacific Trade and Development Conference, Canberra, 20-22 August 2001.

<sup>vi</sup> Doesburg, Anthony. Southfresh demise proof of F2F value. *Computerworld*, 2 September, 2002. [Http://www.computrworld.co.nz/webhome.nsf/](http://www.computrworld.co.nz/webhome.nsf/)

<sup>vii</sup> *ibid*

<sup>viii</sup> Evans (2001) *op. cit.*: 13-16

<sup>ix</sup> Evans (2001) *op. cit.*: 13.

<sup>x</sup> Rust, John; and George Hall. 2001. *Middle Men versus Market Makers: a Theory of Competitive Exchange*. Mimeo, Department of Economics, Yale University.

<sup>xi</sup> *ibid*

<sup>xii</sup> Evans, Lewis; and James Mellsop. 2002. *Exchanging Price Information Can Be Efficient" per se Offences Should be Legislated Very Sparingly*. <http://www.iscr.org.nz>.

<sup>xiii</sup> Evans (2001) *op. cit.*: 17.