

# Porter Prize

## Winners Selection Rationale

---

This report has been written based on: (1) the materials submitted by the winner for Porter Prize screening purposes; (2) interviews conducted by the Porter Prize Organizing Committee; and (3) publicly available information. It is being published with the winner's permission.

### Selection Criteria

The essence of strategy is to do things differently from others. Based on this premise, the Porter Prize recognizes those companies and business units that have chosen to compete in a distinctive way in a particular industry by delivering a unique value proposition, based on innovations in products, processes, and ways of management.

#### First-stage Selection Criteria

1. Superior profitability
2. Unique value proposition
3. Consistency of Strategy over Time
4. Innovation that Enabled Strategy

#### Second-stage Selection Criteria

5. Utilization of capital analysis
6. Distinctive value chain
7. Trade-offs
8. Fit across activities

### Note

In the analysis of capital utilization, the key focus will be placed on ROIC (Return on Invested Capital) and ROS (Return on Sales). The following report of the winners includes these numbers in comparison with the industry averages. A positive difference from the average indicates that the capital utilization of the company/business is better than the industry average. The five-year average is calculated by aggregating the numerators divided by the aggregated denominators. Thus, the derived five-year average is not equal to the simple average of the ratio for each year. The data used in calculating the industry average was obtained by carefully selecting truly comparable companies among those classified as being in the same industry.



Organizing Committee

Hitotsubashi University Business School  
School of International Corporate Strategy

Sponsor

Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.

<https://www.porterprize.org> E-mail: [porterprize@ics.hub.hit-u.ac.jp](mailto:porterprize@ics.hub.hit-u.ac.jp)

# Porter Prize 2008 Winners

Organizing Committee  
Graduate School of International Corporate Strategy, Hitotsubashi University  
2008 Sponsor  
Daiwa Securities Group Inc.

---

## ◆ Single Business Category Winners

Oisix Inc. (Online grocery store)

On-line retailer specializing in safe food

Tokaibane Mfg. Co., Ltd. (Spring manufacturer)

Specializes in production of small lot orders of a wide variety of springs.

Mani, Inc. (Medical tool manufacturer)

Specializing in small medical consumables made of stainless steel

## Selection Rationale (Recipients are addressed in no particular order):

### Oisix Inc.

On-line retailer specializing in safe food

#### Industry Background

---

Although Japan's natural food market has grown rapidly in recent years (from \$13.5 billion in 1999 to an estimated \$24 billion in 2008), it is still very small compared with the US and Europe. The organic food market, at \$2.6 billion, accounted for one tenth of the health food market in Japan, compared with \$17 billion in the US and \$18 billion in Europe. Increasing growth is expected in this market as concern over food safety grows.

#### Executive Summary

---

Oisix started its business in June 2000. At that time, homemakers did not usually order vegetables online, nor did many farmers sell their produce directly to small independent retailers.

Oisix specializes in online sales of organic and natural food based on the concept of promoting "food that producers would feel good about feeding to their own children." Offering 2,300 items, it is the largest web-based food retailer and the fastest growing one among the top three natural food retailers. Sales have grown at 35% annually since the company reached profitability in 2002. Both number of customers and sales per customer have grown, with 30,000 members in the Oisix Club regular purchase program spending on average 12,750 yen per month (2008). Sales of its closest competitor are one tenth of Oisix's sales. The other two sell through catalogs, and they do not sell online.

#### Unique Value Proposition

---

Oisix's target customers are people who care about food safety and taste. Its target segment is broader than the niche segment of organic food enthusiasts.

Oisix's product assortment is as follows: 1) perishable food items (fruit, vegetables, meat, and seafood), 2) nonperishable food items (frozen foods, prepared foods, liquor, canned & dry goods, teas & drinks, baby food, and pet food), and 3) food-related products (books about food and cooking, kitchen products, and bath products). Fruit and vegetables are the main products, comprising 30% of total sales.

All the products Oisix sells must meet its safety standards, which cover farm products, stock farm products, aquatic products, processed foods, liquor, pet food, and home and kitchen products. These standards have been posted on the company's website.

After safety, the next most critical element in the value offered is taste. Oisix emphasizes the flavor of fruits and vegetables over their size and appearance, and in particular the flavor when eaten not when harvested.

The third critical element of value offered is ease of shopping. Oisix charges no membership fees, and customers can order as even just one product. Deliveries are available seven days a week, with a choice of six different time slots. This is very different from catalogue-based organic food retailers, who charge membership fees, sell a variety of merchandise as a basic package, and offer additional options with a less flexible delivery schedule.

Oisix's prices are similar to the prices charged by organic food retailers selling through catalogues and those charged for organic food items sold in organic food stores.

## Unique Value Chain

---

### **Technology development**

Oisix's R&D efforts focus on improving web site usability and on packaging that prevents loss of flavor and freshness.

Most Oisix customers finish shopping in less than 15 minutes and purchase 14 items on average. Importance is given to enabling customers to find what they want quickly so that they can buy small amounts of many items in a short time. Customers can select certain products as a set (called "My Set,") and have these items automatically placed into the shopping cart each time they log onto the website for shopping. Oisix also makes recommendations based on each customer's shopping history.

Since Oisix relies on third party shippers for delivery of its products, it is difficult for the company to control the care with which products are handled during delivery. Thus Oisix has been improving its product packages to better protect perishable products. Examples include special boxes for tomatoes, special shock-absorbing egg cartons and film for preserving freshness. The delivery process is analyzed by such means as placing on shipping boxes devices that record temperature and impact.

### **Procurement**

Oisix procures vegetables, fruits, etc. directly from producers. Oisix's procurement policy is "food that the producers would feel good about feeding to their own children." All the products Oisix sells must meet its quality and safety standards. Oisix regularly consults the cultivation control logs submitted by the producers to verify production methods. Food items other than vegetables and fruit have to be approved by the Audit Committee for Food Safety, which Oisix established. This committee, which meets once a month, comprises six members, including a nutritionist, cooking experts, and homemakers. It checks items such as whether additives are within approved limits, whether main ingredients are certified as non-GMO and whether acceptable animal feeds were used. For fruits and vegetables, cultivation control logs obtained from producers show growing methods and history of use of fertilizers and pesticides. Oisix only purchases products that have received less than half the pesticides and fertilizers of conventionally farmed products.

Oisix conveys to producers customer complaints and feedback in order to deepen the producers' understanding about what customers expect in "delicious" foods. Oisix motivates producers by giving a "Farmer of the Year" award to the top three farmers, selected from among the 1,000 farmers who sell their produce through Oisix. Some 200 farmers attended the award ceremony in 2008.

### **Inbound logistics**

Oisix places orders with producers only after receiving customers' orders. This result in lower inventory costs and an inventory disposal rate of less than 1%.

### **Operation**

Oisix takes orders online only, which allows it to swiftly respond to fluctuations in production volume, which is one of the major challenges of selling organic food. When Oisix can buy popular products in large quantities, it displays this item prominently on its website to encourage sales and reduce inventory. When a large harvest of an item is anticipated, Oisix places it prominently on the web site to promote demand. When orders reach the expected harvest amount, the order management system displays "sold out" for that item.

### **Outbound logistics**

Oisix delivers its products to the customers using third-party next-day delivery services. As a result, customers can select the delivery date and choose from six time slots per day.

### **Sales and marketing**

Oisix does not spend much to acquire new customers. It places advertisements in blogs on the Internet, by paying a contingency fee, and posts advertisements on the websites of catalog retailers. It also increases its

exposure by selling its products at Natural Lawson, a convenience store chain that specializes in natural products.

Oisix communicates detailed information for each perishable item, and also for prepared food items. It states the place of production, provides the name and a photograph of the producer, indicates the method of cultivation, and gives nutritional information, as well as cooking instructions.

### **After-sales support**

Since order management is automated, Oisix can operate with a small support organization. Instead, the company focuses its sales support on advice about how to prepare its products for maximum enjoyment. For example, it sends occasional e-mails about products purchased including seasonal suggestions. First-time Oisix purchasers receive a message from the producer on the evening of the delivery day.

### **Human resource management**

Oisix conducts the following activities in order to develop better understanding of products and producers:

1) Once every quarter employees of Oisix, including those who work for the IT and accounting divisions, visit producers and cook the food items being provided. For example over 100 people including 76 employees and some family members participated in such an event in April 2008. 2) Four or five times a year all Oisix employees spend one hour interviewing customers face to face. 3) In June 2008, Oisix started providing employees with a ¥ 10,000 stipend when they took paid-leave of longer than two consecutive days, to encourage them to enjoy eating good food.

#### Fit of Activities

Oisix's activities are selected and combined to focus on achieving differentiation through the three factors of building trust through safe food that customers can feel good about, achieving top flavor and offering convenience.(See Oisix activity system map on next page.)

### **Fit among Activities**

---

Oisix's activities are selected and combined to focus on achieving differentiation through the three factors of building trust through safe food that customers can feel good about, achieving top flavor and offering convenience. (See Oisix activity system map on next page.)

### **Innovation that Enabled Strategy**

---

- Oisix aims to establish a new business that has no precedent in the US, the leading market for online businesses.
- Logistics model of harvesting fresh foods after order is received.

### **Consistency of Strategy over Time**

---

- The policy of selling only “food that the producers would feel good about feeding to their own children” and the Audit Committee for Food Safety have been implemented since founding of the company in 2000.
- Since founding, orders have only been taken on-line.

## Trade-offs

---

- Does not take orders other than via the Internet.
- Does not sell food items in pre-determined sets.
- Does not sell vegetables produced by conventional methods and prepared foods with many additives.
- Does not sell products unrelated to food. For example, it does not sell diapers and tissue paper, which are popular among expecting mothers or mother who stay at home (and who would be happy to order these items online).
- Does not enter the wholesale business to pursue an increase in sales.
- Does not undertake actual food production.

## Profitability

---

Both return on invested capital and return on sales exceed industry average.

### Return on invested capital (ROIC)

(Unit=percentage point)

Difference from industry average over 5 year period 78%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	-121.3%P	14.4%P	19.4%P	11033.6%P	406.9%P

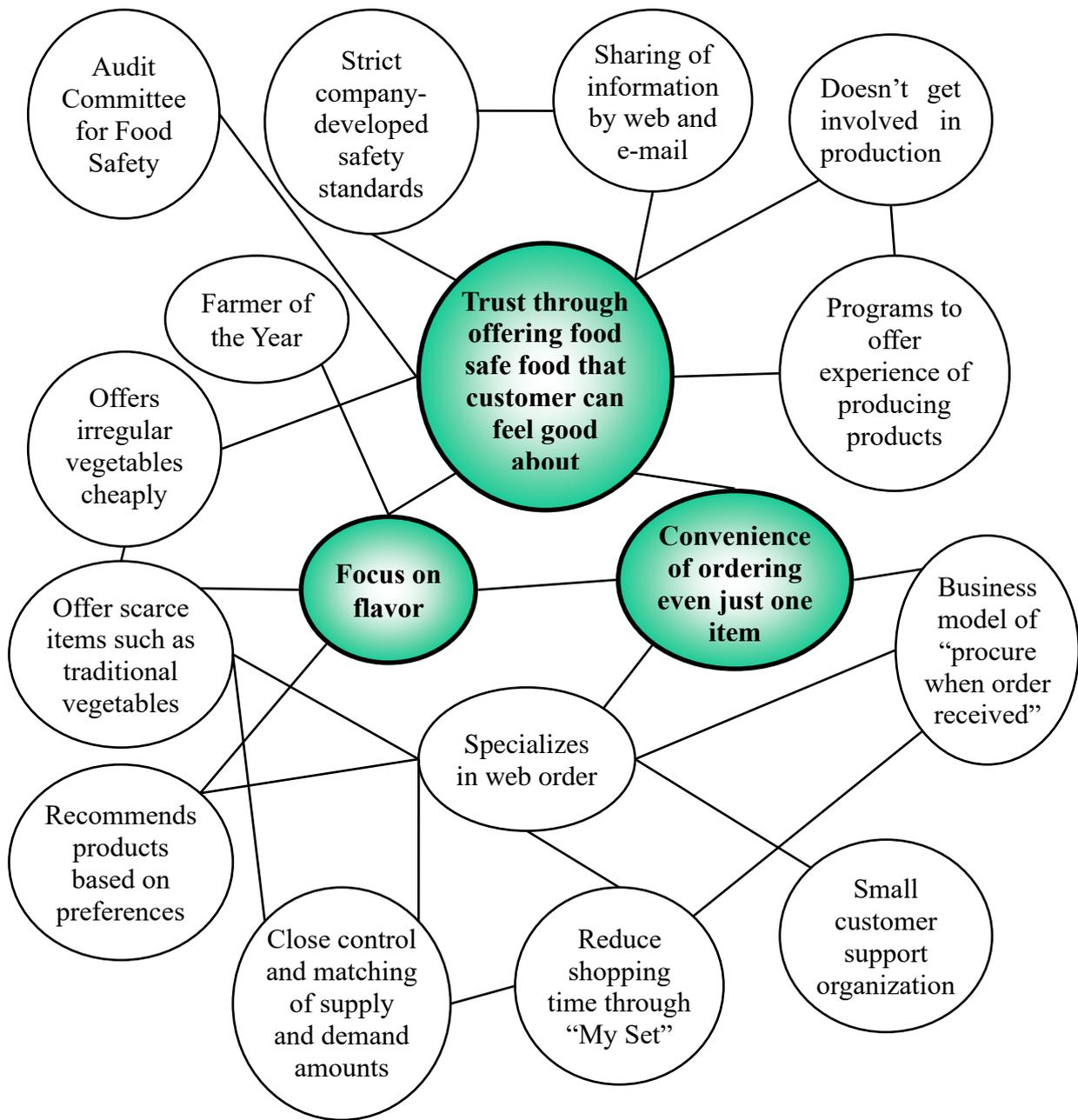
Return on invested capital= operating profit divided by (shareholder capital + long term debt + short term debt – cash)

### Return on sales (ROS)

(Unit=percentage point)

Difference from industry average over 5 year period 1.6%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	-2.9%P	0.2%P	1.3%P	3.7%P	2.1%P

Return on sales= profit on sales divided by sales



## Selection Rationale (Recipients are addressed in no particular order):

### **Tokaibane Mfg. Co., Ltd.**

Specializes in production of small lot orders of a wide variety of springs.

#### Industry Background

---

In Japan there were approximately 3,000 spring manufacturers in 2007. The domestic spring market peaked during Japan's bubble period then hit bottom in the early 1990's. Even now it remains stuck at around 80% of the peak. In recent years the size of the domestic market has shrunk because most companies that use springs have moved their production facilities overseas. The automotive and consumer electronics industries account for 85% of the industry's customers, and customers in these industries require a large volume of springs. Large spring manufacturers target these large customers applying a mass production model. As for small manufacturers, where springs are made by hand, the transference of skills to new employees is difficult, a problem that is made worse by the retirement of experienced employees.

#### Executive Summary

---

Tokaibane specializes in the manufacturing of made-to-order springs which meet customers' specifications and are provided in the quantities customers want, whenever they want them. They even accept orders of a single spring. The company designs, manufactures and sells all types of springs of all types of metals. The average order size is five units, and the average price of each order is 68,000 yen.

#### Unique Value Proposition

---

Tokaibane targets niche markets that require springs in small quantities, such as the machine tools industry, the industrial machinery industry, the shipbuilding industry, manufacturers of supplies for the railway industry, and the R&D department of the automobile and electronics industries.

Tokaibane makes a variety of springs (e.g., coils, leaf springs, and disk springs), in a variety of sizes ranging from under 1 mm. in diameter to springs 1.2 meters high, in a similarly wide range of materials.

Performance requirements of the springs vary widely and include long-lasting springs for use in nuclear power plants (40 years) and bridges (100 years) as well small and extremely precise springs such as a 3 mm. wide spring used on Japan's first infrared astronomy satellite "Akari."

The first element of the value Tokaibane offers is that it manufactures made-to-order springs which meet customers' specifications, and are provided in the quantities customers want, whenever they want them. They had an on-time delivery rate of 99.94% in 2007.

The second element of the value Tokaibane offers is their wide ranging capability to solve difficult problems. Since the company has accumulated vast experience designing and manufacturing a wide range of springs of many shapes, materials and performance requirements, Tokaibane has often solved problems that customers had spent years trying unsuccessfully to resolve.

The third element of the value that Tokaibane offers is ease of reordering. For example a customer that only needs to change a certain spring once in 10 years can easily reorder exactly the same spring, because Tokaibane has recorded design and manufacturing information for all orders since 1983. (The company had 28,534 orders in 2007) .

Tokaibane does not compete on price terms, and in that it does not give discounts.

#### Unique Value Chain

---

## **Technology development**

Tokaibane develops technology in 3 main areas. First, it carefully analyzes the techniques of the highly skilled craftspeople who design and manufacture the springs. Tokaibane standardized the know-how of its experienced and skilled craftsmen and input that know-how into a database, allowing creation of design and manufacturing instruction sheets that explain how to combine the design and materials to achieve a specific performance from a spring.

Second, the company works to advance the spring design and manufacturing processes. Taking on challenging assignments such as the 100 years lifetime spring has sharpened the company's technical skills. Third, the company has been developing IT systems since the late 1970's and as a result now benefits from IT systems that support all processes including manufacturing, order management, delivery schedule management, etc.

## **Procurement**

Tokaibane stores 2,000 types of metallic materials, because the materials it uses for making springs are not readily available on the market. When it purchases these materials, Tokaibane gives priority to high quality rather than low cost.

## **Logistics**

Meeting delivery deadlines is a critical element of the company's value offering. Tokaibane developed an IT operating system that supports inquiries. Every order is bar coded so that Tokaibane can see in real time where the order is in the production process. When Tokaibane receives a new order, the company checks its database to confirm the latest production schedule and provide customers with a delivery date. Also the company maintains a policy of never accepting deadlines that cannot be met.

## **Design and production**

Tokaibane's manufacturing process allows it to be successful even at an average lot size of only 5 springs, in a wide types and materials. To achieve this, Tokaibane does not use automated manufacturing processes with specialized machine tools but rather focuses on highly versatile multi-purpose manufacturing equipment and the workmanship and skill of its spring craftsman. The design and manufacturing instruction sheets mentioned in the R&D section above support the craftsmen with the information necessary to design a spring in 12 hours and manufacture the required spring on the first try. This is all necessary to efficiently manufacture small lots of a wide range of springs.

## **Marketing and sales**

Tokaibane enjoys a high customer retention rate, and 87% of all orders are repeat business. At the same time, the company attracted 200 new customers to the company each year in the five-year period from 2003 to 2007. (The average number of customers who placed orders in the same period was 962 per year).

Tokaibane employs both pull and push marketing strategies. As an example of pull marketing, Tokaibane posted technological information on the Internet in 2003, employing an "e-dictionary" concept, and it succeeded in attracting new customers from R&D sections of well-known companies and university research departments.

Tokaibane's push marketing is done through its "Marketing Group," comprised of three members who each specialize in a particular type of spring. They visit laboratories in the aircraft, aerospace, and nuclear energy industries.

Finally, general inquiries are handled by the "Mother Station Group," which has ten members. It responds rapidly to technical inquiries from customers and requests for designs or estimates. Internet sales, which accounted for 5-6% of total sales in 2006, had increased 200% from 2005.

Tokaibane treats all clients including new clients as if they are special customers, regardless of the size or frequency of their orders. Those prices are not adjusted based on the customer's order history, size of order, etc.

## **Human resource management**

Learning and skill development is a top priority in human resources management at Tokaibane. The performance evaluation criteria focus on the extent to which employees work to develop specific skills and abilities, rather than on results, work experience, or educational background.

Skills are learned through on-the-job training and internal testing to assess each worker's level of skill. This clarification of a worker's level of skill enables the preparation of a career path for skilled workers.

The company supports staff career development by clearly defining skills using an internal skill evaluation system. Each year, two days are set aside for employees to present action plans for their own self development. These presentations are made in front of 14-15 executives.

Another priority of human resource management at Tokaibane is to put employee satisfaction over customer satisfaction. Tokaibane differs from other Japanese small- and medium-sized companies in requiring employees to take all their paid holidays and discouraging overtime work. Following its philosophy of "clear, fair, open" management, Tokaibane also shares its operating performance results with its employees through intranet.

As a result, employee turnover at Tokaibane is almost zero. The average age of employees working in design, manufacturing, and quality management is 32 to 33. The craftsmen's skills are standardized and transferred from experienced workers to younger employees.

## Fit among Activities

---

Tokaibane's activities system centers on activities that support execution of a core strategy of small lot production of a wide range of high-quality products offered in the volume the customer wants when they want it, with a sales focus on custom-made small lot orders and management to maximize staff satisfaction.

(See Tokaibane Activity System Map on next page) .

## Innovation that Enabled Strategy

---

- Database and worker training system enables successful design and manufacturing on first try, without rework, for an extremely wide range of springs
- Treats even first-time customers like preferred customers
- Share production knowhow and database which normally would be considered proprietary to company

## Consistency of Strategy over Time

---

Tokaibane's strategy of small lot production of a wide range of springs has been applied consistently except for one brief period.

The company's history is the accumulation of means of improving the execution of this strategic positioning. In 1934 when Tokaibane was founded, the company was a latecomer to the spring industry. From founding until the 1960's the company specialized in small orders that large manufacturers wouldn't accept. Initially it specialized in coil springs, covering a wide range of sizes from very small to quite large. It gradually increased the range of springs it handled, adding leaf springs, plate springs, etc., creating the foundation of the business model of small lot production of a wide range of springs. However, since it was not unable to create a way to achieve solid profitability, in the 1970's the company expanded its standardized products and accepted more mid-sized orders, but the result was a failure. Tokaibane decided to return to being a custom order specialist and in 1978 installed computers to record in a database customer history and order history. From then on, through continuous improvement of its implementation of IT, additional capabilities such as efficient order and production management and delivery schedule management were introduced. However, it wasn't until 2003 when Tokaibane actively began to apply the Internet in its business that the company improved its ability to win new customers and improved its WTP (willingness to pay) position with customers as the value

added offered by the company became widely recognized, and greatly improved its supply chain management.

## Trade-offs

- No price competition, and no price discounting for sales promotion.
- Does not pursue large-volume sales. (It asks partner companies to produce orders of 100-200 springs using Tokaibane's design and provides quality assurance. It declines medium-to-large orders that should be mass produced.)
- Tries to preserve the skills of craftsmen, and is not dependent on machine operations.
- Only accepts orders that can be delivered on time.

## Profitability

Tokaibane's return on invested capital lags the industry average by 2% over a four years period, but return on sales exceeds the industry average by 2.7% over a four years period. The Porter Prize focuses as one of its criteria on superior competitive strategy whose uniqueness enables consistent industry outperformance in profitability, in particular in return on invested capital, so in the choice of Tokaibane an exception has been made.

By way of contrast, the small and mid-sized spring manufacturers that have received financing from Japan Finance Corporation (formerly Japan Finance Corporation for Small and Medium Enterprise), which do show average return on invested capital higher than Tokaibane, have a lower denominator in the calculation of ROIC which represents the amount of capital invested, compared to Tokaibane, which is actually increasing the amount it invests while its peers are decreasing their investment. In return on sales, which is shown by the numerator, Tokaibane is growing rapidly while its industry peers are only growing at a slow pace. Meanwhile Tokaibane's sales have been growing at a consistent annual rate of about nine percent while the sales of the peer group companies alternately grow and shrink in cyclical fashion at about the same rate.

In other words, these companies used as a comparison are not actively investing in their business and not growing but are rather just maintaining their profitability. In other words, one can say that they are entering a period of harvesting their profitability. Tokaibane meanwhile is actively investing in order to achieve a unique strategic positioning. That the market is rewarding this is evidenced by the fact that sales and profit on sales amounts are increasing and by the fact that the ROS is relatively high compared to peers. The fact that a fairly small company with sales of about 2 billion yen has been able to build a boldly unique strategic positioning in a mature product area like springs was evaluated quite highly by the Porter Prize selection committee. Tokaibane still lags competitors in profitability in relation to invested capital, but we expect that its current investments will result in higher profitability in the future.

### Return on invested capital (ROIC) (Unit=percentage point)

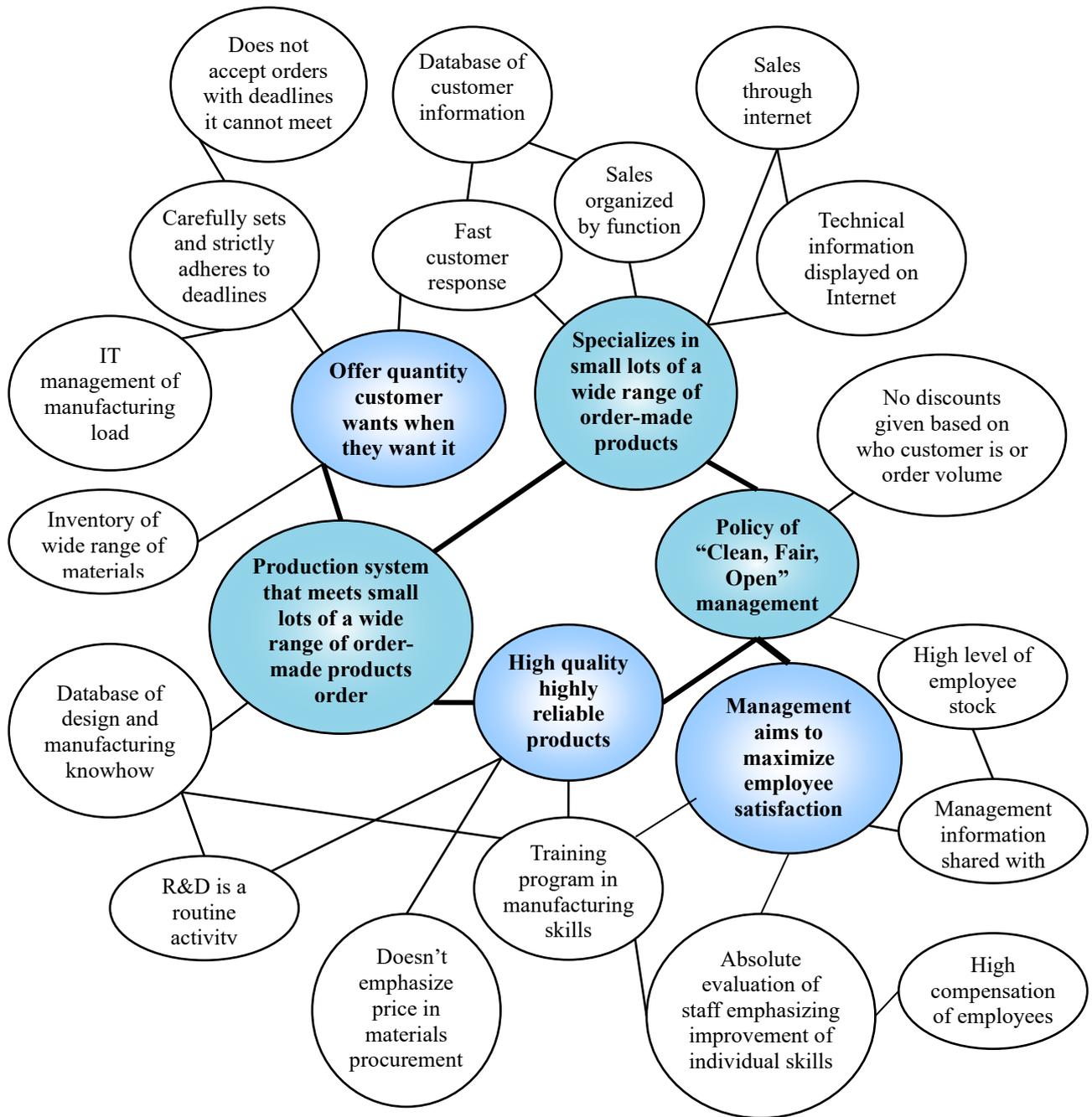
Difference from industry average over 5 years period -3.5%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	n.a.	-4.9%P	-1.1%P	-1.1%P	-3.4%P

Return on invested capital= operating profit divided by (shareholder capital + long term debt + short term debt – cash)

### Return on sales (ROS) (Unit=percentage point)

Difference from industry average over 5 years period 2.0%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	n.a.	-1.7%P	4.9%P	4.1%P	3.5%P

Return on sales= profit on sales divided by sales



## Selection Rationale (Recipients are addressed in no particular order):

### Mani, Inc.

Specializing in small medical consumables made of stainless steel

#### Industry Background

---

The small-sized medical tool industry is fragmented, and One of the reasons for this is the variety of products handled. For example, surgical needles vary in terms of length, shape of the tip, curvature of the needle, diameter of the eyelet, and stiffness, according to the type of human tissue and surgical applications involved, and the surgeon's preferences. Mani sells 10,000 kinds of surgical needles and 3,000 kinds of dental instruments. As a result, most companies in this industry are small-sized firms. The exception is Johnson & Johnson's presence in surgical atraumatic needles, a segment in which it boasts a 70% share of the world market, covering the entire range from low-end to high-end market segments.

#### Company Outline

---

Mani, founded in 1956, specializes in the manufacturing of medical and dental small-sized, light-weight consumables made of stainless steel, such as surgical needles, knives for eye surgeries, and reamers and files for dental treatment. Sales in 2007 were 8.1 billion yen, with sales in 120 countries and international sales reaching 68% of total sales. Some Mani products have as much as a 49% share of the world market.

#### Unique Value Proposition

---

Mani's target customers are doctors and dentists who require superior touch and the best possible instruments for use in surgery and treatment.

The first value element offered by Mani is to provide the safest surgical products. Mani defines quality by two aspects: safety, and mechanical properties that respond to the demanding needs of top physicians. One important way Mani provides safety is to offer needles that hardly ever break and hence do not leave broken pieces in patients' bodies. Mechanical properties include sharpness, strength of the stem, suppleness, etc. In general, when hard metals are used, sharpness can be achieved, but the expense of greater risk of breakage.

Mani has developed stainless steel that features a unique chemical composition and unique manufacturing processes, which contributes to its products' safety and high performance.

Mani dominates the market with its precision technology – Mani is the only company that can mass-produce atraumatic needles with an outer diameter of 0.14 millimeter, and the surgical needles used for Mr. Bill Clinton's heart surgery were produced by Mani. As evidenced by this event, Mani's products are favored by doctors. Sticking steadfastly to its value proposition, Mani offers the same quality products and a world standard price even to developing countries and regions where low-priced products predominate. By contrast many of the company's competitors offer lower-quality, lower-priced products in those markets.

The second element of Mani's value offering is providing products that are optimized to meet the applications, methods and preferences of physicians. Mani provides a wider selection for customers, which is the second widest selection a company offers after J&J. This is unlike its competitors, many of whom severely limit the number of products in order to achieve cost reduction.

In the field of surgical needles where Mani has a 50 years history and a well established reputation for superior quality, Mani's surgical needles are 50% to 100% more expensive than others on the market. Recently the price difference decreased to 20% after competitors raised prices because of rising metal costs.

Mani sets prices for its dental drill and surgery products at levels comparable or slightly lower than those of its competitors because Mani was a latecomer to these segments. It entered the dental segment in 1976. Although some of its leading competitors in the dental segment lowered their prices, Mani maintained its prices at the original level.

## Unique Value Chain

---

### **Technology development**

In order to ensure the world's highest levels of safety and performance, Mani improves its stainless steel and develops manufacturing machinery and measuring instruments. In 1967 and again in 1988 Mani developed stainless wire using its own technology. Mani also develops nickel-titanium that have characteristics similar to its proprietary stainless steel. The company has patents on its own technologies in areas such as materials, precision processing and laser drilling.

In order to judge if its products are the best in the world, Mani collects and analyzes its own objective data. Twice a year Mani subjects its products to a painstaking comparison with competitor's products in a meeting called "Are we world's best or not?" and starts action programs for points where Mani has fallen short. Also, each department has a monthly morning development meeting where the development team, sales people, production staff and top management decide direction and solve problems. Mani consistently invests 6% to 8% of sales in R&D.

### **Procurement**

Since 70% of Mani's products use a common stainless wire, the cost and effort of procurement are extremely low. Also, materials cost represents on average only 7.8% of the sales, and transportation and storage costs are thus quite low.

### **Production**

Mani's manufacturing processes starts overseas, continues in Japan and ends again overseas. Pre-processing of the stainless wire is done in overseas factories in countries such as Vietnam (since 1996, with second factory since 2003) and Myanmar (since 1999). Processes requiring proprietary technology such as precision processing and laser drilling are performed in Japan. Then final processing and final quality inspection are performed in overseas factories. The manufacturing processes in those countries are identical, and the quality of manufacturing is comparable, excepting the core manufacturing processes, which are kept in Japan to prevent the diffusion of this technology. Inspections for maintaining manufacturing quality are made on all products and include optical inspection during processing, quality inspection by machine as well as visual inspection by human staff. Since Mani produces over 100 million surgical needles per year this whole system might seem on first glance quite inefficient, but since the products are quite miniature, the benefits of having proprietary technologies in Japan and final visual quality inspection of every single product by human eye in overseas factories outweigh the added cost of having factories both in Japan and overseas.

It is preparing to commence production in Laos in December 2009.

Most of Mani's products have a long product life, and Mani improves its manufacturing processes continuously.

### **Outbound logistics**

Since Mani's products are miniature, they can be easily transported by plane or truck allowing quick deliveries tailored closely to customer's requirements.

### **Marketing and sales**

Mani provides customers with quality and performance data, drawing a comparison with its competitors. No other company does this. Mani believes that because Japanese doctors have the world's highest technical skill level, products accepted in Japan will meet requirements worldwide. Mani works closely with

physicians in Japan, offering them data and developing trial products for those doctors and dentists requiring new tools for devising new methods.

In order to increase its interactions with dentists, the company conducts development, manufacturing and marketing of stereo microscopes and laser treatment equipment for dental treatment using new technologies. Detailed reports are required of all meetings with customers, without fail, and e-mails lists of selected groups of customers are used.

To help surgical thread manufacturers to caulk thread to the needle, Mani provides them with caulking equipment. Through this service, Mani ensures the quality of the final products and establishes a relationship with thread manufacturers.

### **HR management**

The primary feature of Mani's HR management is to support its goal of world's best product quality. Mani limits its domestic workforce to about 300 people in order to train them face-to-face in the skills needed to maintain that quality. Maintaining and improving quality are important factors in performance reviews, and presentations to other staff about one's ideas on product quality are a required part of applying for a promotion. Commendations and bonuses are given for quality improvements and new product ideas.

Mani invites doctors employing leading-edge surgical techniques to educate its employees. It also has created a video library to educate others about these new techniques.

Mani keeps employees motivated by inviting them to submit applications for managerial posts. Mani evaluates the company's performance against its best-ever performance, instead of against the previous year's results.

Mani chose not locate its overseas factories in industrial complexes to keep the employee turnover rate low. By doing this, some convenience is lost and extra expense incurred, but by dominating the human resources in one area they prevent other firms from coming in. Those Mani reduces loss of its staff to other firms, allowing it to build and maintain a workforce that receives sufficient training in the technical skills needed for manufacturing of precision specialty medical tools and training in Japanese language. The company also invites non-Japanese employees to work in Japan, sharing time with them both at and outside work to build human relations.

### **Fit among Activities**

---

Mani's activities are designed to achieve the core goal of "world's best quality". Specific activities include product development activity driven by clear standards, accumulation of objective data through comparison with competitors' products at the "Are we world's best or not?" meetings, various systems for sharing information, staff evaluation system, etc.

Also, since Mani has selected the long product life, small consumable medical device market, it has been able to tightly integrate the fit of its activities. Long life products allow the recouping of the costs of internal efforts to develop materials, manufacturing equipment, and measurement and testing systems which themselves allow long term differentiation of Mani's products in the market. Since the company uses specialty materials it developed internally, it must develop some of its manufacturing equipment internally as well. Because it develops manufacturing equipment internally, it can tailor the equipment to allow efficient production of a wide range of products. Because the materials cost for miniature products is quite low, the inventory cost of even a wide range of product manufacturing processes can be kept to a low level. Since the raw materials portion of the cost of products is quite low, the loss from the waste that accompanies developing many new manufacturing processes is minimal and outweighed by the benefits gained from the new processes. Because miniature products are so light, a manufacturing process that involves both domestic and overseas factories is possible, allowing both the protection of proprietary technologies in Japan and labor- and time-

intensive production.

(See next page “Mani Activity System Map”)

## Innovation that Enabled Strategy

---

- Technology for making needles out of stainless, a material which has the advantage of resistance to breaking but is difficult to process (1961, world's first)
- The development of stainless steel wire that is hard to break (1967, 1988)
- Technology for nano-size processing of the cutting edge of ophthalmic sutures and ophthalmic knives where the world's best sharpness is required
- Laser drilling technology enabling 140 micron needles
- Developed its own quality rating standards and shared the evaluation data. Extends open invitation to employees to apply for managerial posts, including the position of CEO.

## Consistency of Strategy over Time

---

Since 1961 when Mani succeeded in offering the world's first stainless surgical needles, solving the problem of previous needles which could rust and introduce thus introduce foreign substances into the body, the company has maintained a consistent strategy. It sells into a worldwide niche market, the world's top quality small, consumable medical devices that have long product life, using its own unique technology centered on stainless wire. The company had some failures before committing to this strategy. In the 1970's it developed a surgical cutting device, but the quality was poor and the product failed. The cause was that rather than using stainless wire, sheet material was used. The making and processing of such materials are completely different for wire and sheet. Currently all scalpels and knives sold by the company are made by pressing stainless wire.

## Trade-offs

---

- Does not enter product markets outside of the medical tool market.
- Does not introduce a product unless Mani maintains the proprietary technology.
- Does not introduce products with a short product life (less than 20 years).
- Does not introduce products for which the size of the global market exceeds ¥200 billion.
- Does not introduce products if sales are limited to a small number of countries.
- Does not develop products that will not exceed annual sales of ¥100 billion and an ROS of 10% within four years after the market launch.
- Does not develop products that will not exceed an ROS of 30% within ten years.
- Does not introduce products that have not realized the best quality in the world or do not have the potential to become so.
- Does not introduce products for new techniques that have not yet been established. New techniques under development are less reliable and would pose a conflict for Mani, which makes safety its first priority.
- Does not provide developing countries with products of inferior quality for the sake of lowering costs.
- Does not open factories in industrial complexes overseas, where labor mobility is high.

- Does not increase the number of employees at the headquarters beyond a limit of 300.
- Does not conduct marketing activities by itself outside of Japan.
- Does not try to increase profit through financial engineering.

## Profitability

---

### Return on invested capital (ROIC)

(Unit=percentage point)

Difference from industry average over 5 years period 22.2%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	14.8%P	21%P	22.3%P	25.7%P	21.6%P

Return on invested capital= operating profit divided by (shareholder capital + long term debt + short term debt – cash)

### Return on sales (ROS)

(Unit=percentage point)

Difference from industry average over 5 years period 28.1%P	Difference from industry average, by year				
	2003	2004	2005	2006	2007
	23.2%P	26.3%P	27.4%P	29.8%P	24.9%P

Return on sales= profit on sales divided by sales

Activity System Map of Mani, Inc.

