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Junkkari Oy: GROWING the Wood-Chipper Business

Bonita Russell and Cory Isaacs wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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MSK Group Oy (MSK), a third-generation family-owned business located in Ylihärmä, Finland, manufactured agricultural and forestry equipment under the brand name Junkkari Oy (Junkkari) and a line of utility trailers under the brand name Juncar Oy (Juncar). The firm also provided contract manufacturing services through its subsidiaries MSK Cabins Oy (MSK Cabins) and MSK Plast Oy (MSK Plast).

The Junkkari plant, located in Kauhava, Finland, produced a range of mid-sized disk wood chippers for small-scale farming and forestry applications. In a typical year, the plant manufactured to order some 200 machines, most of which were exported to markets in Europe and South Africa. Junkkari was not, however, the only Finnish firm manufacturing wood chippers, and there was little to differentiate Junkkari’s machines from those of its competitors.

In early 2017, Toni Ruokoja, Junkkari’s export manager, was reviewing the order book for wood chippers. Ruokoja knew that the firm was capable of doubling its annual production, but in the absence of firm orders, growth was stalled. Returns had been negative for several years, but the firm was on track to show a small profit in 2017.

The MSK Group Oy

MSK’s motto was, “feet on the ground, aiming high,” a testament to its commitment to practicality and quality craftsmanship. Although MSK was not incorporated until 2003, the firm traced its roots back to the 1950s, when it first began manufacturing agricultural equipment. In the 1960s, the firm added a line of tractor safety cabins to its product lineup; in the 1970s, it added utility trailers. The values of the founder, Ville Isosaari, and his son Jaakko Isosaari remained fundamental to the operation, and nine family members were still involved in the firm.

MSK had four subsidiaries: Junkkari, Juncar Oy, MSK Cabins Oy, and MSK Plast Oy. Junkkari manufactured agricultural and forestry equipment, and Juncar manufactured a line of utility trailers. The two remaining subsidiaries, MSK Cabins and MSK Plast, were contract manufacturers. All of the parent company’s operations were certified to the ISO 9001 and ISO 14001[[1]](#footnote-1) quality standards.

Turnover over the past seven years had averaged between €80 million[[2]](#footnote-2) and €100 million per year (see Exhibit 1). In 2016, sales revenue totalled €93 million: 86 per cent of this sales revenue was associated with the firm’s contract manufacturing activities (69 per cent from MSK Cabins and 17 per cent from MSK Plast); and 14 per cent was associated with its manufactured equipment (10 per cent from Junkkari and 4 per cent from Juncar Oy).

The number of employees at MSK had remained stable at between 400 and 500 over the past few years. The head office had 21 employees, MSK Cabins had 190 employees, MSK Plast had 115 employees, Junkkari Oy had 66 employees, and Juncar Oy had 24 employees. The majority of the workers were men, employed as skilled craftspeople (23 per cent professional workers and 77 per cent production workers). The average age of the total employee group was 43.

The firm was further organized according to product lines. Junkkari specialized in seed drills, acid applicators, and tipping trailers for small-scale agricultural operations. It also manufactured a line of loaders, trailers, and chippers for the forestry industry. Junkkari manufactured to order and exported its products into parts of Europe, Africa, and Asia. Juncar Oy was Finland’s largest producer of utility trailers for personal and professional use. MSK Cabins was a major producer ofsafety cabins and was capable of producing pre-assembly and fully trimmed cabins for tractors and earth-moving equipment. Its cabins were produced under contract and used in over 75 different countries. Production was limited to approximately 50 cabins per day. MSK Plast was also a contract manufacturer and specialized in plastic and reaction injection moulding. MSK Plast produced over 1,500 different products with piece weights of 0.1–3,000 grams, for applications in the fields of medicine, electricity, energy, and heavy equipment. Its products could be found all over the world.

Finland was a challenging country in which to do business because of its small domestic market and its high labour taxation rates. Productivity in the manufacturing sector was a particular concern, as capital investments were weak and wages had increased faster than productivity. Finland ranked last in terms of labour productivity among its peer countries (Ireland, Denmark, Belgium, Sweden, the Netherlands, and Austria) (see Exhibit 2).[[3]](#footnote-3)

Finland also tended to export more intermediate goods, such as metal and forestry products, than it did manufactured goods; this was partly because Finnish-manufactured goods were not considered to be cost competitive. According to government sources, Finland’s cost competitiveness had deteriorated some 10–15 per cent in recent years.[[4]](#footnote-4)

Nonetheless, the MSK Group had established a reputation as a high-quality, responsible manufacturer for the agricultural, heavy-equipment, electrical, electronic, and health-technology industries. For many of these industries, a trustworthy supplier was as important a consideration as the cost of manufacturing. The MSK Group aimed to be a “genuine, straightforward and honest partner with its employees, customers, and stakeholders.”[[5]](#footnote-5)

Junkkari Oy and the Wood-Chipper Business

Wood chippers owed their origins to the grinders and shredders that were first manufactured in the 1940s and 1950s for agricultural, forestry, and land-clearing operations. The basic designs had not changed much since then, although modern machines had bigger engines and heavy-duty components. Wood chippers were still used for agricultural, forestry, and land-clearing operations, but two new uses had emerged: the recycling of organic materials and the use of biomass as an alternative energy source.[[6]](#footnote-6) Municipalities and home owners had also started to use chipper machines for composting purposes, although the principal driver of industry growth was the forestry industry. The U.S. market, a sizeable one for chippers, was estimated at over US$400 million in 2016, with an annual growth rate of less than 2 per cent. It was dominated by three manufacturers: Bandit Industries Inc., Morbark LLC, and Vermeer Corporation. Industry consolidation was expected to continue.[[7]](#footnote-7)

Wood chippers reduced wood waste from construction, furniture-manufacturing, landscaping, logging, sawmill, and similar operations into chips or sawdust for use in ground cover, composting, biomass fuel, and paper making. All wood chippers had the same basic components—that is, a collar, a chipping mechanism, and a collection bin or chute—which were powered by an electric motor or a diesel engine and could be mounted on a truck or tractor or towed behind a vehicle. There were three basic types of chippers: high-torque roller, disk and drum. The high-torque roller machines were self-feeding, low-speed chippers intended for residential use. A disk chipper used a spinning metal disk with attached cutting blades to produce wood chips. A drum chipper had a large motor-powered drum in the centre of the machine, which chipped the material as it moved towards the chute.[[8]](#footnote-8)

Demand for wood chippers was strong in North America and was expected to grow in the Asia-Pacific region due to increased building construction and furniture manufacturing in developing countries.[[9]](#footnote-9) Demand for wood chips was also strong, driven in part by the use of wood chips in biomass power plants, particularly in the European Union, where member countries were bound to a target of deriving 20 per cent of final energy consumed from renewable sources by 2020.[[10]](#footnote-10) Nonetheless, the wood chipper was a mature product, and, as such, its buyers were focused on price and performance and its suppliers on maintaining preference for the brand through incremental improvements to the product and augmented service.[[11]](#footnote-11)

The Junkkari plant in Kauhava, Finland, produced a range of mid-sized disk wood chippers for small-scale farming and forestry applications. The machines chipped trees and branches in the range of two to 45 centimetres (cm) in diameter and produced between two and 100 cubic metres (m3) of wood chips per hour (see Exhibit 3 for model comparisons). The machines were of high quality and built to last. The most popular models were the HJ170 and HJ250—tractor-mounted, hand-feed chippers that retailed at between €9,300 and €12,300 (plus shipping), with a competitive discount for the importer. Shipping costs ranged from €300 to €3,000, depending on the size and number of machines being shipped and the destination. The lowest-cost shipping option was a full container load.

Junkkari had a made-to-order business model, whereby machines were manufactured based on firm orders—a process that could take from four to six weeks. Made-to-order manufacturing was a suitable process for low-volume operations. Off-the-shelf components provided by Junkkari’s suppliers were assembled to produce the final product.[[12]](#footnote-12) The basic metal processing carried out at the Kauhava plant included welding, soldering, bolting, spray painting, and assembling. The advantages of made-to-order manufacturing were that (a) production was closely linked to demand, (b) the product could be customized to suit the needs of the customer,[[13]](#footnote-13) and (c) the firm did not have to manage or finance an inventory of finished machines. The primary disadvantage was that customers had to wait for delivery, which might not be a problem if a distributor was prepared to order the machines for its inventory.

The firm had produced some 10,000 chippers over its 30-year manufacturing history, making Junkkari a small player. However, in the words of the managing director, Harri Hytonen, Junkkari made up for this with its “long experience, high flexibility and first-rate quality.”[[14]](#footnote-14) Ruokoja echoed those sentiments when asked to describe the competitive advantage of Junkkari chippers, saying they were “high quality, ergonomical[ly correct] and easy to use” and produced an “adjustable chip size.”

In a typical year, Junkkari manufactured some 200 machines to order (see Exhibit 4). The skills required to produce the chippers were the same skills needed to manufacture other machines, which gave the firm considerable flexibility when it came to scheduling production. Although the firm had long manufactured to order, it had more recently begun to manufacture its more popular machines based on its annual sales forecast.

Junkkari was not the only Finnish firm manufacturing wood chippers. Five other Finnish firms also produced wood chippers of various types, and other manufacturers could be found in nearby countries (e.g., Sweden, Russia, Estonia, Denmark, Germany, and the United Kingdom). There was a high degree of comparability between the models manufactured by Junkkari and those produced by its competitors (see Exhibit 5).

For other equipment manufacturers, the product was often an extension to an existing product line of wood-processing equipment such as grinders, chippers, compost turners, shredders, and debarking systems. However, the wood chipper was the only material-processing piece of equipment Junkkari produced; its other products were seed drills, acid applicators, and small forestry cranes and trailers.

Due to the small size of the domestic market, Junkkari had long exported much of its product. In foreign markets, Junkkari, like other small firms, used a network of distributors to sell its equipment. Such an arrangement was considered a low-cost alternative to developing and maintaining an international sales force. For this arrangement to work well, manufacturers needed to see their dealers as business partners to ensure their products were actively promoted and sales targets were achieved. Finding new partners was an ongoing process for Junkkari. Suitable partners were mid-sized firms that sold farming or forestry equipment. The partners also had to have an interest in carrying Junkkari machines and the resources to actively market only Junkkari machines to their customers. Junkkari supported its dealers with regular visits, participation in trade shows, invitations to visit the plant in Finland, and marketing materials, which the dealers could customize for their use. The basis of this partnering relationship was a contractual agreement that detailed the expectations for both parties, the terms and conditions associated with the arrangement, and the territory covered by the agreement.

Junkkari machines could be found throughout Europe, Russia, South America, and Canada (see Exhibit 6). The distribution network was well-established in Europe, with 33 dealers in 24 countries. In South Africa, Junkkari had only one distributor, Staalmeester Agricultural Imports CC (Staalmeester), one of South Africa’s oldest agricultural-machinery manufacturing companies. Initially, Junkkari machines had been sold to Staalmeester though another Finnish company. In 2009, Staalmeester began buying machines directly from Junkkari. Staalmeester imported much of its equipment, which it then exported to 18 other African companies. In Canada, Junkkari also had just one distributor, Les Industries Renaud Gravel Inc. (Renaud Gravel), located in St-Cléophas-de-Brandon, a small town in central Quebec. Renaud Gravel, a small family-owned firm, manufactured forestry equipment for woodlot operators and provided welding, machining, and repair services for farm machinery and forestry equipment. The firm also acted as a distributor for other machinery suppliers, namely Berti Macchine Agricole SpA, Tajfun Planina DOO, and Norwood Sawmills Inc.[[15]](#footnote-15) Renaud Gravel had purchased HJ170G and HJ250GT machines from Junkkari in 2014 but had made no further purchases. The contact with Renaud Gravel had been developed by an agent[[16]](#footnote-16) engaged by Junkkari in financial year 2012–13, and contact between Junkkari and Renaud Gravel had been limited since 2015 because of low sales volumes.

Among the firms that produced wood-chipper machines that were comparable to those manufactured by Junkkari, five had established presences in Canada. EMB Mfg. Inc. was a small privately held firm of 30 employees that marketed its wood chippers under the brand name Wallenstein. It had dealers in all 10 Canadian provinces; its dealer network supplied tractor and farm equipment, commercial lawn and garden equipment, construction equipment, logging equipment, and sawmill equipment.[[17]](#footnote-17) Vermeer Corporation was an American manufacturer of industrial and agricultural equipment; Vermeer Canada Inc., a full-service equipment dealer that specialized in selling and servicing Vermeer equipment, had 12 service centres across Canada.[[18]](#footnote-18) Bandit Industries Inc. was an American construction equipment supplier with a Canadian dealer network that spanned seven provinces. Bandit Industries Inc. had arrangements with construction-, agricultural-, industrial-, and landscape-equipment suppliers. One of these dealer arrangements provided the firm with access to 15 different markets in Ontario, Quebec, and Newfoundland.[[19]](#footnote-19) The remaining two firms, Pezzolato SpA of Italy and Linddana TP of Denmark, had arrangements with one dealer each in Ontario.

NEXT steps

Ruokoja described the problem, as he saw it in 2017: “If we talk about Canada, we have had some projects but basically we have only one small chipper importer there. The general problem is how to grow our business there with a very limited budget.” Maybe it was time for Ruokoja to visit Canada. Other Finnish forestry-equipment manufacturers seemed to be doing well in Eastern Canada; maybe it was worth a try.

Exhibit 1: MSK Group Oy Total Revenue by Year, 2010–2016 (In € Millions)

Note: €1 = US$1.08 on March 31, 2017.

Source: Company information.

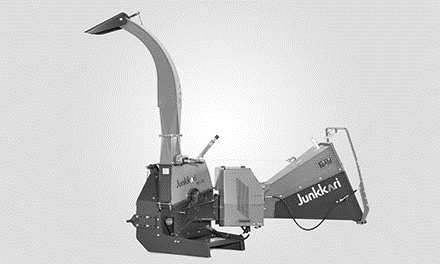
EXHIBIT 2: WAGE RATE COMPARISON FOR FINLAND AND ITS PEER COUNTRIES

|  |  |  |
| --- | --- | --- |
| **Country** | **Hourly Labour Costs (€)** | **Non-Wage Costs (Including Employer Contributions) as % of Total Salaries and Wages** |
| Finland | 32.7 | 21.6 |
| Ireland | 31.0 | 13.7 |
| Denmark | 42.5 | 13.8 |
| Belgium | 39.6 | 27.1 |
| Sweden | 8.3 | 32.7 |

Source: “Estimated Hourly Labour Costs, 2017,” Eurostat: Statistics Explained, accessed April 2018, http://ec.europa.eu/eurostat/statistics-explained/index.php/Hourly\_labour\_costs.

Exhibit 3: Junkkari Wood Chippers

Model HJ170



Junkkari Wood Chipper Line

|  |  |  |  |
| --- | --- | --- | --- |
| **Model** | **Wood Size** | **Chipping Capacity** | **Notes** |
| HJ4 | up to 9 cm | 2–6 m3 per hour | * mechanical chipper * smaller version has no feeding device |
| HJ170 | up to 17 cm | 4–8 m3 per hour | * two versions, tractor mounted * one a trailed chipper |
| HJ250 | up to 25 cm | 7–30 m3 per hour | * non-direct feeding chipper * blades draw in the wood, requiring less power |
| HJ261 | up to 26 cm | 7–30 m3 per hour | * multi-speed direct-feed chipper |
| HJ500C | up to 45 cm | 20–100 m3 per hour | * trailed chipper * low energy consumption * high productivity |

Notes: cm = centimetres; m3 = cubic metres.

Source: Company documents.

Exhibit 4: Wood Chipper Sales by Year by Model

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sales by Year by Model** | **HJ4** | **HJ170** | **HJ250** | **HJ261** | **HJ500C** | **Total** |
| 2016 | 21 | 58 | 114 | 20 | 5 | 218 |
| 2015 | 39 | 90 | 132 | 12 | 7 | 284 |
| 2014 | 33 | 68 | 91 | 8 | 6 | 208 |
| 2013 | 28 | 69 | 90 | 10 | 11 | 208 |
| 2012 | 17 | 52 | 92 | 64 | 4 | 229 |

Source: Company documents.

Exhibit 5: Equivalent Models by Brand

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Equivalent Models** | **Country** | **HJ4** | **HJ170** | **HJ250** | **HJ261** | **HJ500C** |
| Vermeer Corporation | United States (family owned) |  | x | x | x |  |
| Bandit Industries Inc. | United States (privately held) |  | x | x | x |  |
| Eschlböck Biber | Austria (family owned) |  |  | x | x | x |
| GreenMech Ltd. | United Kingdom (privately held) | x | x |  |  |  |
| Jensen | Germany (privately held) |  | x | x |  |  |
| NHS Maskinfabrik A/S | Denmark (family owned) |  | x | x | x | x |
| Nicolas Industrie SAS | France (privately held) |  | x | x |  |  |
| PC Stål ApS | Denmark (privately held) |  | x | x | x |  |
| Pezzolato SpA | Italy (privately held) | x | x | x | x | x |
| Rabaud | France (family owned) | x | x | x | x |  |
| Linddanna TP | Denmark (public limited company) | x | x | x | x | x |
| Vandaele Konstruktie | Belgium (privately held) |  | x | x | x |  |
| EMB Mfg. Inc. (Wallenstein) | Canada (privately held) |  | x | x |  |  |

Source: Company documents.

Exhibit 6: Wood-Chipper Sales by Year by Region

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sales by Year by Region** | **EU Countries (19)1** | **Non-EU Countries (7 countries)2** | **Russia** | **Japan** | **Canada** | **South Africa** |
| 2016 | 102 | 98 | 4 | 0 | 0 | 14 |
| 2015 | 174 | 78 | 1 | 0 | 0 | 31 |
| 2014 | 122 | 62 | 1 | 0 | 6 | 17 |
| 2013 | 145 | 57 | 1 | 0 | 0 | 5 |
| 2012 | 171 | 39 | 1 | 0 | 0 | 18 |

Notes: EU = European Union; 1 EU Countries = Austria, Bulgaria, Czech Republic, Denmark, Estonia, France, Germany, Great Britain, Latvia, Lithuania, Netherlands, Poland, Portugal, Greece, Hungary, Italy, Slovakia, Slovenia, Spain; 2 Non-EU Countries = Iceland, Switzerland, Turkey, Ukraine, Belarus, Norway, Sweden.

Source: Company documents.

1. “About ISO”, International Organization for Standardization, accessed September 10, 2018, https://www.iso.org/about-us.html. [↑](#footnote-ref-1)
2. € = EUR = euro; €1 = US$1.08 on March 31, 2017; all currency amounts are in € unless otherwise specified. [↑](#footnote-ref-2)
3. Petri Mäki-Fränti and Lauri Vilmi, “Why Is Finland Trailing Its Peers?,” *Bank of Finland Bulletin*, April 13, 2016, accessed July 9, 2017, https://www.eurojatalous.fi/en/2016/1/why-is-finland-trailing-its-peers-/. [↑](#footnote-ref-3)
4. Organisation for Economic Co-operation and Development, *OECD Economic Surveys Finland*, January 2016, accessed August 31, 2018, https://www.oecd.org/eco/surveys/Overview-OECD-Finland-2016.pdf. [↑](#footnote-ref-4)
5. Timo Lehtioja, MSK Group Oy, *Requirement for the Principles of Suppliers’ Responsible Operations*, February 6, 2018, accessed July 10, 2017,https://www.mskgroup.fi/documents/446859/488812/vaatimus+toimittajien+vastuullisesta+toiminnasta\_EN.pdf/80682423-38d1-49a0-a9b1-cf57cf65b894. [↑](#footnote-ref-5)
6. Rhodes Yepsen and Nora Goldstein, “Historical Perspective: Grinders, Chippers, Shredders,” *BioCycle* 50, no. 1 (2009): 16–22. [↑](#footnote-ref-6)
7. IBIS World, *Chipping & Grinding Equipment Manufacturing – US Market Research Report*, 2016, accessed January 30, 2018, https://www.ibisworld.com/industry-trends/specialized-market-research-reports/industrial-machinery-gas-chemicals/general-purpose-manufacturing/chipping-grinding-equipment-manufacturing.html. [↑](#footnote-ref-7)
8. “How Wood Chippers Work,” Thomas Industry Updates, accessed January 8, 2018, https://www.thomasnet.com/articles/machinery-tools-supplies/How-Wood-Chippers-Work/. [↑](#footnote-ref-8)
9. Persistence Market Research, *Wood Chipper Market: Global Industry Trend Analysis 2012 to 2017 and Forecast 2017–2025*, 2018, accessed January 7, 2018, https://www.persistencemarketresearch.com/market-research/wood-chipper-market.asp. [↑](#footnote-ref-9)
10. “Renewable Energy: Moving towards a Low Carbon Economy,” European Commission, accessed January 8, 2018, https://ec.europa.eu/energy/en/topics/renewable-energy. [↑](#footnote-ref-10)
11. Theodore Levitt, “Exploit the Product Life Cycle,” *Harvard Business Review,* November 1965. Available from Ivey Publishing, product no. 65608. [↑](#footnote-ref-11)
12. Junkkari had 120 active suppliers, some of which had been supplying components to the firm for over 10 years. [↑](#footnote-ref-12)
13. Customization tended to be limited to choices between manual or hydraulic feeding devices. [↑](#footnote-ref-13)
14. “Junkkari Oy: Down-to-Earth Equipment,” in *European Business: People, Stories, Profit—Made in Scandinavia Special Edition*, 3, 2015, accessed July 14, 2018 https://www.european-business.com/fileadmin/european-business/epaper/EB\_epaper\_scandinavia\_2015.pdf. [↑](#footnote-ref-14)
15. “Forestry Equipment,” Les Industries Renaud Gravel, accessed August 21, 2018, https://www.indgravel.com/en/forestry-equipment. [↑](#footnote-ref-15)
16. The use of agents to find suitable dealers was not unusual in foreign markets. Agents had local business knowledge and networks of contacts that made it possible for foreign firms to enter distant markets; they were typically paid a fee for this service. [↑](#footnote-ref-16)
17. “Official Dealer Locator,” Wallenstein, accessed January 9, 2018, www.wallensteinequipment.com/ca/en/dealer-locator.aspx. [↑](#footnote-ref-17)
18. “About Vermeer Canada,” Vermeer Canada Inc., accessed January 9, 2018, www.vermeercanada.com/home/about-vermeer-canada. [↑](#footnote-ref-18)
19. “Find a Dealer,” Bandit Industries, accessed January 9, 2018, http://banditchippers.com/dealers/. [↑](#footnote-ref-19)