



Faculty of Engineering

SERVITIZATION: CHALLENGES IN MANUFACTURING

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**Bachelor of Engineering with Honours
(Mechanical and Manufacturing Engineering)**

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CERTIFICATION OF SUPERVISOR

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SERVITIZATION: CHALLENGES IN MANUFACTURING

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A dissertation submitted in partial fulfilment
of the requirement for the degree of
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ABSTRACT

This was brought about the implementation of learning offered by Universiti Malaysia Sarawak. During final year, the particular strength of this study is in providing insights for integrating the knowledge and experience on one hand and reflecting the needs of industry on the other.

My final year project title is challenges of servitization in manufacturing. Servitization is known as the process of adding value to the product by offering services. This servitization strategy is taking place across sectors for having competitive advantage. Also, only a few guidelines in overcome the challenges in manufacturing and no specific techniques available. There are many application of servitization strategy in the industrial companies in Malaysia, however, it is not been recognizes as their competitive strategy. All these factors and important studies will be covered in this research.

This report presents the exposure of students to make a formal report, enhancements of knowledge and skills, instillation of the qualities of integrities, responsibilities and self-conidence, exposure of students to instillation of the spirit of teamwork and good relationship between students and fellow lecturer or technician upon completion of studies in Universiti Malaysia Sarawak (UNIMAS).

ABSTRAK

Pelaksanaan pembelajaran ini adalah seperti yang telah ditawarkan oleh Universiti Malaysia Sarawak. Sapanjang setahun yang terakhir ini, tujuan kajian ini dilakukan adalah untuk memberikan pandangan untuk mengintegrasikan pengetahuan dan pengalaman juga untuk mencerminkan keperluan industri.

Tajuk projek tahun akhir saya adalah halangan 'servitization' dalam industry pembuatan. 'Servitization' dikenali sebagai proses menambah nilai kepada produk daripada servis yang diberikan. Strategi 'servitization' ini sudah tidak asing lagi dan mengambil tempat dalam banyak sektor kerana mempunyai kelebihan dalam strategi persaingannya. Bukan itu sahaja, hanya ada beberapa langkah dalam mengatasi halangan dalam bidang pembuatan dan tiada teknik khusus yang tersedia. Banyak juga aplikasi dalam strategi 'servitization' dalam organisasi di Malaysia, walau bagaimanapun, strategi ini tidak diiktiraf sebagai strategi persaingan dalam organisasi mereka. Semua faktor ini diambil kira dan idea penting akan diliputi juga dalam kajian ini.

Laporan ini membentangkan pendedahan kepada pelajar untuk membuat satu laopan rasmi, peningkatan pengetahuan dan kemahiran, penjanaaan beransur-ansur daripada sifat-sifat integrity, tanggungjawab dan keyakinan diri, pendedahan pelajar untuk memupuk semangat kerjasama dan hubungan baik antara pelajar dan pensyarah dan penilaian keupayaan dan kecekapan dalam penyelidikan untuk menyertai tenaga kerja setelah tamat pengajian ini di Universiti Malaysia Sarawak (UNIMAS).

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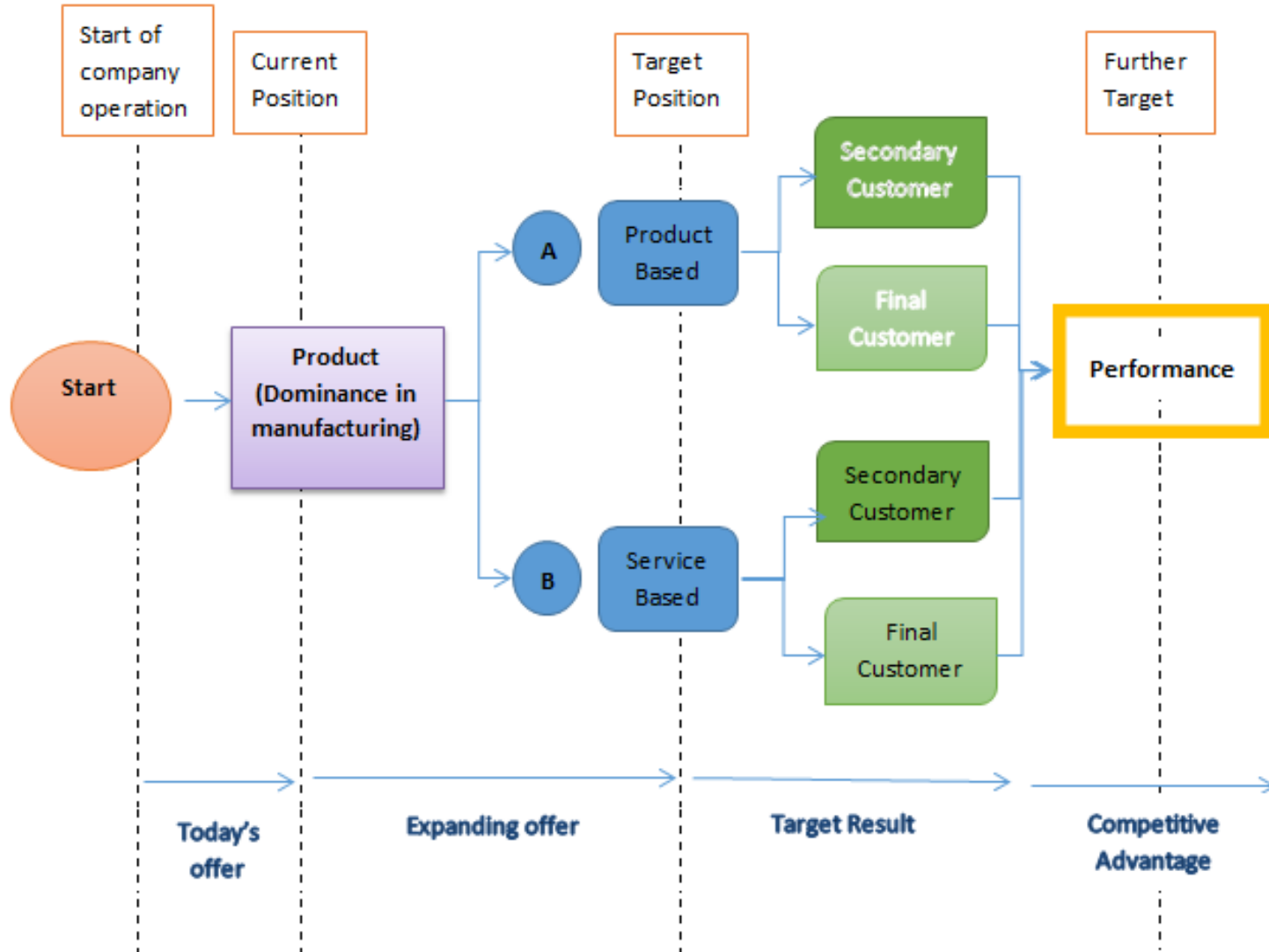
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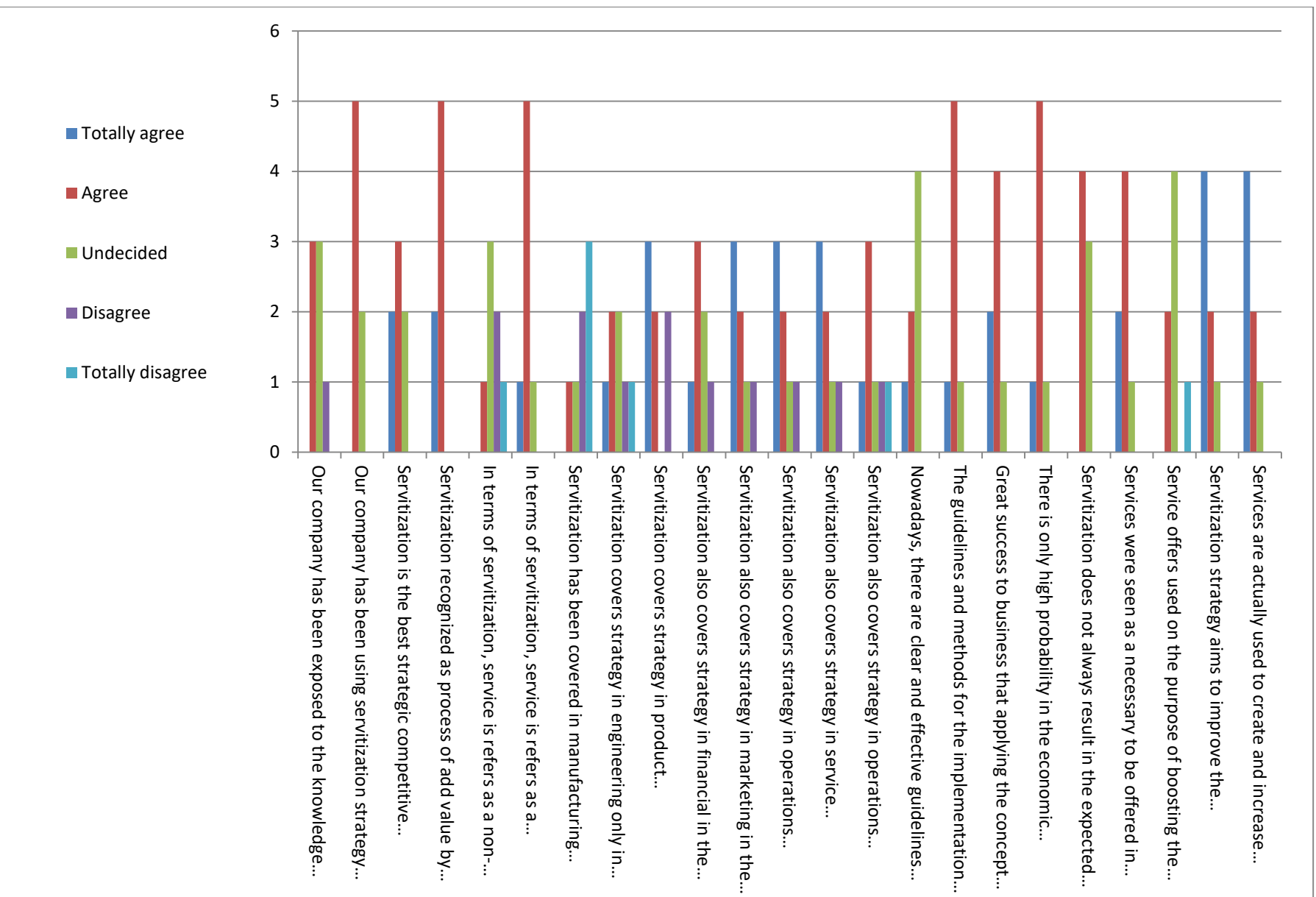
APPENDIX A

Figure 3.2: Conceptual Model



APPENDIX B

Figure 4.1: Basic of Servitization Chart



APPENDIX C

Survey Questions

Servitization survey

Servitization was define as the process of creating value by adding services to the product.

Thank you for participating in this survey. This survey is being conducted for a final year university project under topics of manufacturing. All your answers and your identity will be anonymous and kept as the references under the purpose of education only.

We would love to hear your thoughts or knowledge on this topic! Please fill this quick survey and let us know your thoughts.

* Required

1. **Age: ***

2. **Gender: ***

Mark only one oval.

Male

Female

3. **Company's name:**

4. **Position in company: ***

5. **How long you have been working in this company? ***

6. **What is your company organizational/ industrial sector? ***

Mark only one oval.

Mechanical and plant engineering

Automotive

Manufacturing of computer, electronic and optical products

Manufacturing electrical equipment

Repair and installation of machinery and equipment

Other: _____

7. How many years your company has operated? **Mark only one oval.*

- <3 years
- 5-10 years
- 10-15 years
- 15-20 years
- 20-30 years
- >30 years

8. Number of employees in your company: **Mark only one oval.*

- 0 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- 500 - 1000
- 1000 - 2000
- >2000

9. What is the company configuration? **Mark only one oval.*

- Manufacturing-based
- Customer-based

10. What is the company organizational culture? **Mark only one oval.*

- Product-oriented manufacturing
- Service-oriented manufacturing
- Marketing-oriented strategy
- Profit-oriented strategy
- Value-oriented manufacturing

11. What type of customer do your company has? **Mark only one oval.*

- Secondary customer (Contractor, retailer, wholesaler)
- Final customer (End-user)
- Both

12. **If you answer both for the above question, which customer is your prime customer?**

Mark only one oval.

- Secondary customer (Contractor, retailer, wholesaler)
- Final customer (End-user)
- Both

13. **Before this survey, have you ever heard about servitization? ***

Mark only one oval.

- Yes
- No
- Maybe

14. **To what extent would you rate your knowledge about servitization: ***

Mark only one oval.

- Very high
- High
- Moderately
- Low
- Very low

Basic of Servitization

15. Please tick your opinion about servitization from the rate of 'Totally Disagree' to 'Totally Agree'. *

Mark only one oval per row.

	Totally Agree	Agree	Undecided	Disagree	Totally Disagree
Our company has been exposed to the knowledge of servitization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our company has been using servitization strategy unintentionally for a long time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization is the best strategic competitive advantage in business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization recognized as process of add value by adding services to product offering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In terms of servitization, service is refers as a non-profitable offering for the product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In terms of servitization, service is refers as a profitable added value to the product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization has been covered in manufacturing industries only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization covers strategy in engineering only in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization covers strategy in product manufacturing in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization also covers strategy in financial in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization also covers strategy in marketing in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization also covers strategy in operations management in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization also covers strategy in service management in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization also covers strategy in operations research in the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nowadays, there are clear and effective guidelines and methods for the implementation of servitization strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The guidelines and methods for the implementation of servitization strategies can be used for all types of business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Great success to business that applying the concept of servitization is confirmed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is only high probability in the economic sustainability of business models in applying servitization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization does not always result in the expected performance outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Totally Agree	Agree	Undecided	Disagree	Totally Disagree
Services were seen as a necessary to be offered in any competitive strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service offers used on the purpose of boosting the company's turnover only.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Servitization strategy aims to improve the satisfaction of customers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Services are actually used to create and increase customer loyalty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Adoptation to the Company

Please answer all the questions below. You may choose your answer more than one if needed.

16. Does your company/ business unit offer services? *

Mark only one oval.

- Yes
- No
- Maybe

17. Which types of services does your company/ business unit offer? *

Check all that apply.

- Product lifecycle services (eg. Inspection, repair, spare parts logistics, operator training)
- Asset efficiency services (eg. Retrofit, predictive maintenance, guarantee)
- Process assistance services (eg. Plant performance analysis and consulting)
- Process takeover services (eg. Infrastructure or operation take over)
- Basic services (eg. Customer consulting, written information material and technical user training)
- Maintenance services (eg. Product upgrading and technical support)
- Research and development services (eg. Problem analysis and feasibility studies)
- Functional services (eg. Operating customers' processes)
- Other: _____

18. What is the extent that each of the following areas contributes to knowledge merging applied to Servitization Process?

Check all that apply.

- Marketing
- Engineering
- Advance Technology
- Design
- Customer-Service
- Other: _____