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Sustainable Competitive Advantages in the Industrial Service Business

Teollisuuden palveluliiketoiminnan pysyvä kilpailuetu

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In the project we collected totally 81 questionnaire replies or interviews from top managers of industrial service business customers and service companies. These were the core and fundamental information and data for our research and analysis. That we are very much appreciating.

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1. Introduction

The industrial service business in Finland has developed and grown remarkably during the last two decades. This is mainly because industrial companies have concentrated on their own core businesses and have either outsourced these non-core functions or acquired these services from market service providers. The main reasons for these transformations have been market-opening trends, based in part on Finland joining the European Union (EU) in 1995 and its regulation requirements, and the open-market pressures to improve competitiveness. In particularly electricity market law 386/1995 has had a strong influence on the transformation of the energy business, requiring the monopoly network business to separate from other business units in the energy utilities. The old business model, in which all functions – production, distribution, operation, maintenance and construction – were operated as internal services, was no longer efficient enough in the gradually opening market because the business drivers were so different. This transformation started almost 20 years ago.

On the basis of this transformation in energy, telecom and forestry industries, industrial services sector was born and developed. In these service companies, the services business is their core business, which they concentrate on and develop. Most service companies work in a multi-customer market environment and develop their services to meet market needs [14, 13]. In the service business, the business drivers are very different from those for asset owners in the electricity and telecom industries. In the service business, the key drivers are flexibility (both personnel and work tool resources), an efficient and mobile workforce, customer proximity and a light balance sheet (Kontu 2017). Moreover, margins (EBITDA) are low (3–10%) but investments are also rather limited. These are the reasons why service businesses need different business models and management to asset-based businesses.

These newly founded service companies were for the most part originally outsourced from electrical and/or telecom utilities at the start of the transformation of the industry. After this service business foundation phase, in 1990–2010 a very active consolidation phase saw numerous mergers and acquisitions – a very fast growth phase in the whole service industry. In addition, internationalisation also occurred, both in terms of ownership and business expansion, mostly to neighbouring Baltic and Nordic countries.

Today, the industrial service sector's total turnover is a few billion euros and there are more than 10, 000 employees. Among the largest of these service companies are Empower, Eltel, Relacom, YIT/Caverion, Maintpartners and Infratek, all of which are international players. Many private or municipally owned service providers have been founded as well as new service companies with new service models and products. They specialise in different services, either in terms of the scope of service concepts/products or regions. The ownership has diversified, too. Today, service company owners can be private (management, private equity (PE)), energy companies, municipalities or a combination of these. Overall, a whole new industrial service market has been created in the last 20 years.

2. Problem formulation and research objectives

This service industry transformation has dramatically changed the structures and competence needs of these companies, both asset owner utilities and service providers. Service providers have undergone many changes in different phases of the transformation – start-up/foundation, consolidation, tougher competition – such as the lower prices, more and new domestic and international competitors and the need for flexible resources.

The transformation of the industrial service sector has not received theoretical and university-level research into the creation of sustainable competitive advantages and success enablers for service providers or into the effects of outsourcing on utility companies and the changes that have been met. This study examines that transformation, with regard to both service companies and their customers (asset owners, outsourcers), in selected industrial electrical and telecom network services.

What were the original reasons and objectives for this transformation and have the targets been achieved? Have the targets changed, in operational and economic terms, during the transformation journey and in what way? What has happened to the competence requirements? Have they changed? It has been shown that the customers have for the most part reached their economic targets in this regulated business but the service providers have met profitability challenges. Buyers' power and added competition have forced service prices lower and lower and service providers have not found the tools to meet their targeted profit levels.

In the research, the following items are also studied:

- The role of the authorities in the transformation
- Influences on changes of ownership
- Competitive advantage as viewed in strategy plans
- The critical competence and resource requirements
- Service providers' differentiation plans and actions against their competitors
- New service models and product development plans and resources
- 'Digitalisation/Internet of Things' – plans in business development

Can we find through this survey sustainable competitive advantages for both parties (customer and service provider) to reach a win-win position? Are there conflicts between the parties' targets? Through this survey's results and analysis, we produce a plan to develop the framework and tools for the industrial service business to create a sustainable competitive advantage.

3. Research strategy

Substantial research has been published on the subjects of 'business competitiveness' and 'sustainable competitive advantage'. Here, we have taken three definitions of competitiveness, which provide the framework for this research.

Edmonds (2000):

> For a firm, competitiveness is the ability to produce the right goods and services of the right quality, at the right price, at the right time. It means meeting customers' needs more efficiently and more effectively than other firms do.

Feuer & Chaharbaghi (1994):

> Competitiveness is constantly changing feature, and therefore presently a competitive firm may not be competitive in five years' time. The best description for competitiveness could be the firm's ability to get customers to choose just the company's products instead of competing products.
>
> To ensure firm's future competitiveness, firms must also be competitive on their stakeholders' point of view as the firm's objectives and financing are strongly based on the company's attractiveness in the eyes of the stakeholders.

Porter (1985):

> You have a competitive advantage if your profitability is sustainably higher than that of your rivals and to understand weather that advantage comes from higher prices, lower costs or a combination of both.

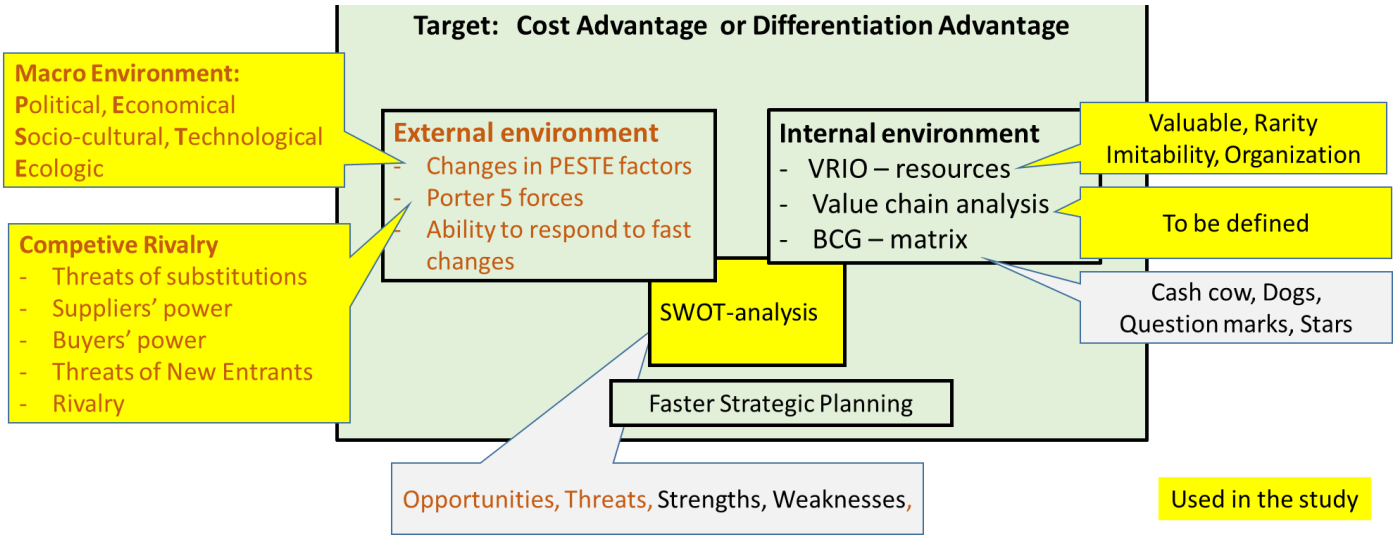
3.1 Sustainable competitive advantage analysis methods and research design

In the literature, many business models and methods have been described to analyse the 'sustainable competitive advantage' of companies or businesses. In this research, the following competitive advantage theoretical models are applied:

a) External environment models:
   Macro environment, PESTE analysis and test (Grant 2010, Chaharbaghi 2005) – Political, economic, socio-cultural, technological, ecological.
   Five competitive forces in the industry (Porter 2008) – Threats of substitute products or services, bargaining power of suppliers, bargaining power of buyers, threat of new entrants, rivalry among existing competitors.
b) Internal environment models:
   Value Chain analysis (Porter 1985) – Added value of operative and support functions.
   BCG matrix (Henderson 1970) – Cash cow, Dogs, Question marks, Stars.
   VRIO resources (Barney 1995) – Question of Value, Rarity, Imitability, Organisation.
c) External and internal environment:
   SWOT analysis (Humphrey 1960) – Strengths, Weaknesses, Opportunities, Threats.
d) Company performance measurement:
   Accounting measurement (Barney 2007, Ikäheimo 2011) – Size/growth/profitability/liquidity/solvency ratios.

Figure 1 presents these analytical methods and identifies those that have been used in this survey.

Figure 1. Method of analysis of sustainable competitive advantage [2,3,4,5,6,7,8]



The main targets of the methods selected are to obtain understanding and knowledge of how to create a sustainable competitive advantage by differentiation or cost advantage.

In this survey, we have selected the following methodology and tools to analyse competitive advantage:

a) Financial analysis: Simple accounting measurement, growth and profit (EBITDA) rates.

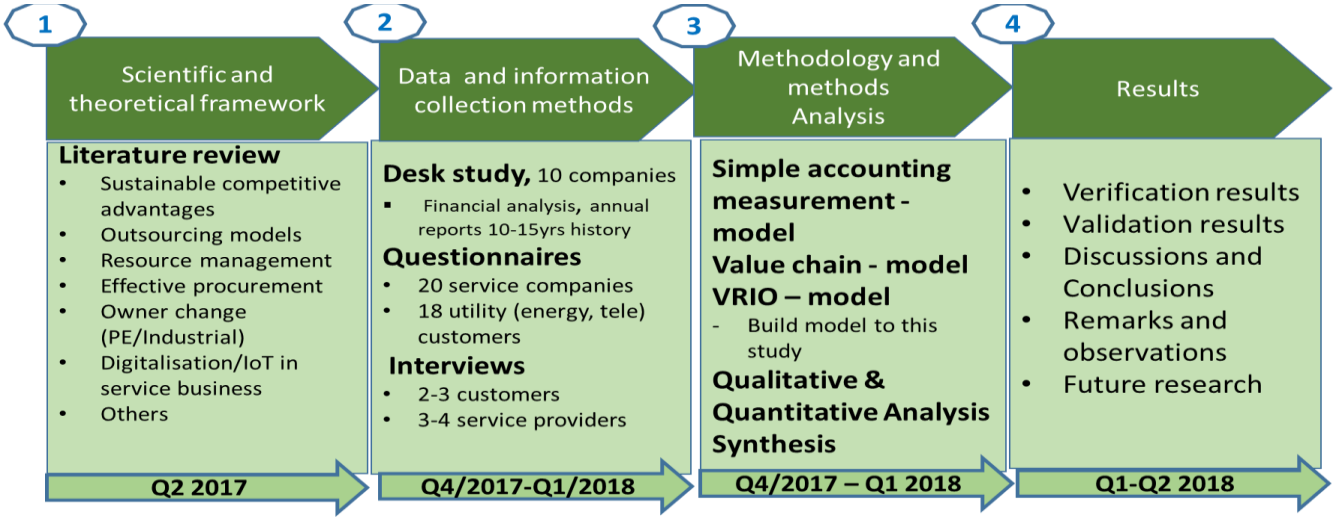
b) Operational analysis:

Phase 1: Value chain analysis, in which you break down the service business and evaluate its meaning and value, supported by a SWOT analysis and a financial analysis.

Phase 2: VRIO analysis based on the results of a value chain analysis and financial analysis to define the critical competences and resources.

Appendix 1 presents in more detailed the value chain and VRIO models and explains how they are used in the competitive business development model. The research design and timetable are presented in Figure 2.

Figure 2. Research design and timetable



3.2 Research questions

We have defined five research questions that will provide the basis, background and framework that will enable us to identify how to achieve sustainable competitive advantages in the industrial service business. The research questions are as follows:

Question 1: How have industrial service companies performed during the past 10 years based on financial data?

Question 2: What have impacted on the performance of each company during the past 10 years based on publicly available data?

Question 3: What are the means and tools to create sustainable competitive advantages and enablers in industrial service business?

Question 4: Is there a conflict in sustainable business targets between service providers and customers?

Question 5: Can you find win-win position both to service providers' and their customers' businesses, how?

4. Data and information collection methods

Data and information collection was conducted using publicly available data, three questionnaires and seven in-depth interviews:

Performance and impact analysis 2006–2016

Balance consulting/Valor Partners reports [1], annual reports and other public data collected for 10 industrial service companies.

Customer survey [12]

- 70% of electrical network customers, TO 850M€, 800 employees, 35% telecom network customers
- Questionnaires to 15 electrical and 3 telecom network companies, 3 individuals (Finnish Energy, Energy Authority, a consultant), totally 25 answerers
- In-depth interviews, 3 electrical utilities

Industrial service business survey [10]

- Questionnaires sent to 18 industrial service companies, four individuals (representing Finnish Energy and consultants).

Industrial service company survey (total revenues €1.5m, 8,600 employees, >70% of the industry), [11]

- Questionnaires to 19 service companies (electrical, telecom, district heating, industry, ICT); 18 respondents.
- In-depth interviews with representatives from four service companies (electrical, telecom, district heating, industry, ICT services).

5. Results of empirical studies

5.1 Customer survey [12]

The customer survey results are summarised below, based on the above-described questionnaires (25 respondents) and in-depth interviews (3 pcs), supplemented by figures and tables:

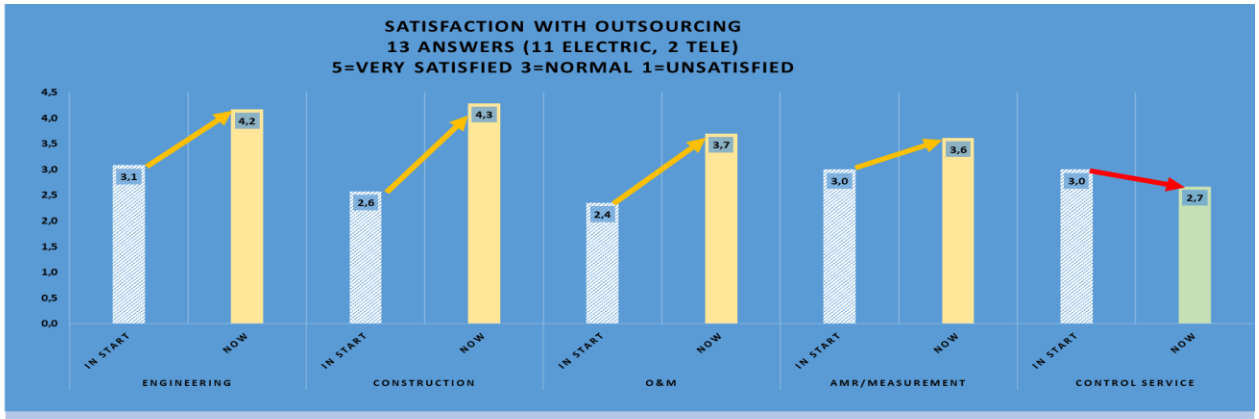
- Service outsourcing created remarkable and immediate efficiency improvements/cost cuts, in 5–10 yrs in 20–50% of all companies – market expected to continue working – price levels still lowering
- Network companies are very satisfied with outsourcings – improvements rated at 2.5/5 to 4/5
- A reasonably good operating service market has been created and developed – many players
- Authorities in key role – have created efficiency – not many claims against them
- In future, more outsourcings, larger service packages for service providers – new business models are of interest too, with alliances and networking – digitalisation is a core enabler
- Most important evaluation criteria for service providers are price (80–90%), quality, competence, safety and reliability, whereas local, Finnish, solvency and language are of minor importance
- Network companies do not see remarkable risks in service providers – the market works
- Service companies part of Energy group – restricts service market development – this view comes both from customers and service providers side - clearly

Conclusion: A reasonably well operating service market has been created in the electrical (and telecom) network business in 20 years, with remarkable cost efficiency achieved.

Table 1.

Outsourcing targets and achievements
Targets: ➢ Cost cut (10/17) ➢ Quality (4/17)
Achievements: ➢ After 1. year cost savings 5-20% ➢ After 5-10 yrs cost savings 20 – 40% ➢ After 10 yrs costs do not increase or lowered still 5-10%
Conclusion : Remarkable and immediate efficiency improvement/cost cut, in 5-10yrs 20 – 50% in all companies, expected to lower in future too
Comments: Fixed cost to removable, reach regulator's target level, create market players and service market, efficiency to investments

Figure 3.



Conclusion: Network companies very satisfied to outsourcing – improved but not new services developed

Comments: No alternatives any more, many service providers, competition works, bad quality in AMR

Table 2**.**

Future service models and needs

Question	Yes	No	Comments
Outsourced services increase (14)	**15**	0	
Service contract length get longer (15)	**10**	6	
Bigger service packages (14)	**15**	2	In future less unit prices, more asset management roles
More networking service models (12)	**15**	0	
Financial packages included (15)	8	7	Today not available, regulation model guarantee funding
Life cycle solutions/model (14)	**10**	4	
Alliance model (12)	8	5	
IoT/more digitalization (15)	**16**	0	Creates opportunities, Data hub will change grid operators
Consolidation of network companies (14)	9	4	Regulation do not support this, operative co-operation, efficiency, competence requirements, data hub can drive consolidation

Conclusion: More business opportunities to service companies, bigger service packages, digitalization, new business models, more networking DSOs concentrate to asset management/strategic planning

5.2 Industrial service business survey [10]

The industrial service business and market have changed and developed during the last two decades in the following ways:

Table 3: Industrial service market development during 2000–2017

Before yr 2010	Yrs 2010-2014	Yrs 2015 - 2017
Separation networks to own company	Tight competition	Hard competition More new players
Oursourcings	New players	Growth in services
Service market developing	Profitability challenge	Growth in digitalisation
Competition started	Weather proof networks – new investments	Consolidation, internationalisation
International competition	Bigger volumes – more efficiency	Bigger contract packages
Growth	Industrial outsourcings	Customers' ownership changes
Stabile		Cash flow/profitability more important

Conclusions

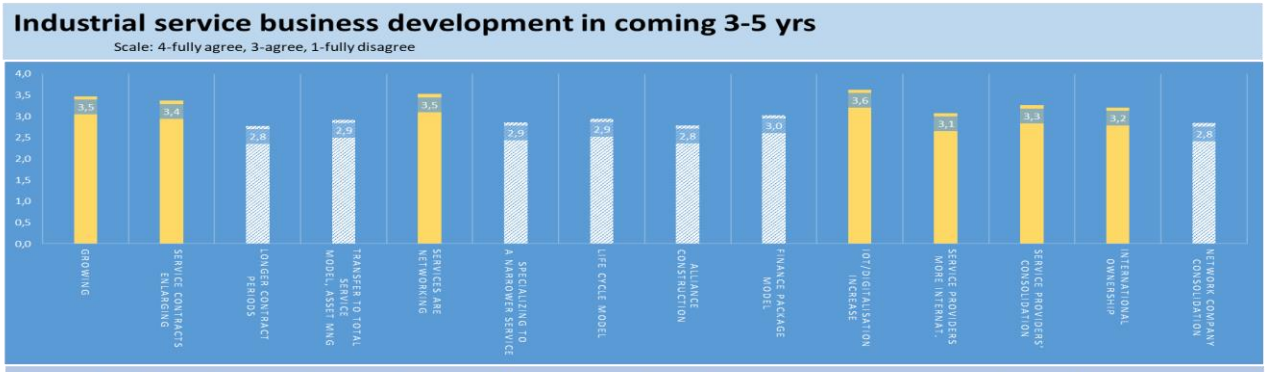
- Market created and developed
- Remarkable growth in market volumes
- Bigger contracts/service packages
- Profitability challenge continuously
- Hard competition continuously

The results of the industrial service business survey are summarised from the above-described questionnaires (22 respondents), supplemented by figures illustrating the main points:

- The service sector believes the future to involve growth, bigger service packages, networking, digitalisation/Internet of things, consolidation, internationalisation – the market is open but tight, with low margins – more openness, flexibility
- The service market has been created and works, with new players appearing, tough price competition, consolidations, new service needs (digi etc) – too many players, buyers' power too strong, more openness to the market
- Through differentiation, new innovative services, cost efficiency and customer proximity, you can create sustainable competitive advantages
- Critical success enablers are continuous business development, engaging management/personnel, profitability – not growth, not learning from competitors, not internationalisation
- By taking care of critical competences, customer survey and work safety, you will retain sustainable competence
- Employees are rather often changing the employer – but that have not dramatically affected companies' performance
- Service companies that are part of the energy group clearly affect the service industry market negatively
- Most recommended service company owners are management, private equity (PE) and public – municipalities less favourable

Conclusion: Market created and developed, remarkable growth in market volumes, bigger contracts/service packages, profitability challenged continuously, tough competition continuously.

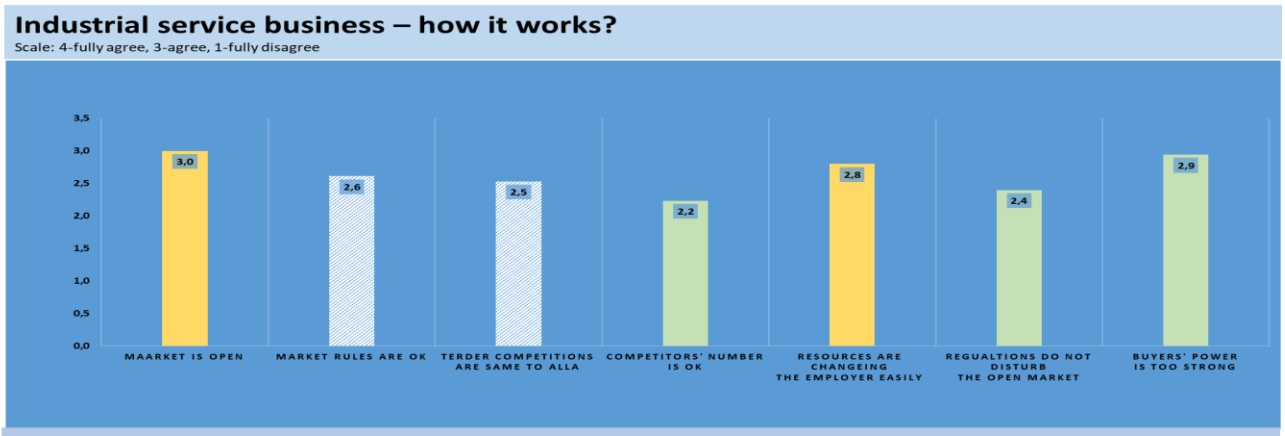
Figure 4.



Conclusion: Industry believes the growth, bigger packages, networking, digitalisation, consolidation, internationalisation, some new business models

Comments: small deviations

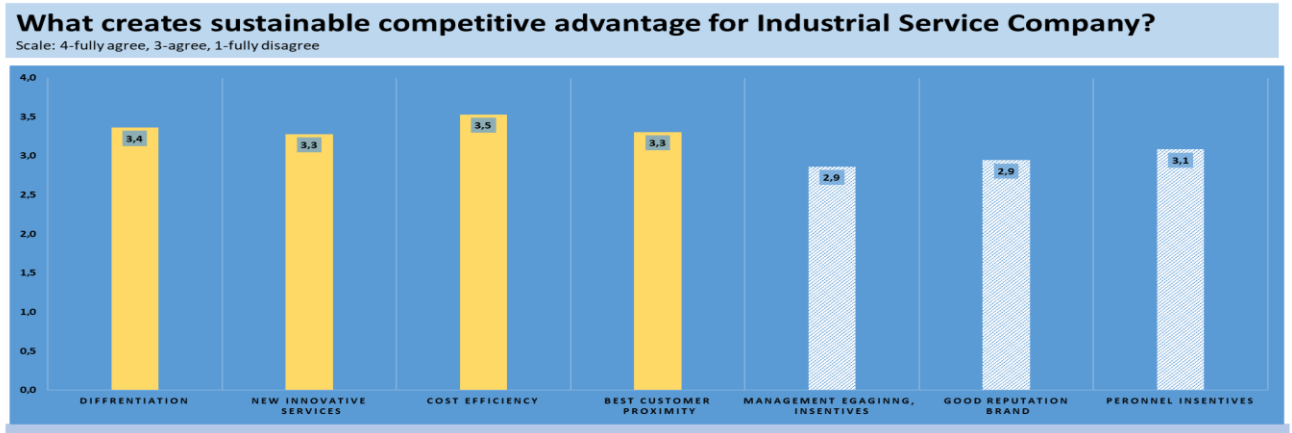
Figure 5.



Conclusion: Market is open, too many competitors, buyers' power too strong

Comments: Big deviating opinions on regulators influence (1,02) to the market as well as buyers' power (1,06)

Figure 6.



Conclusion: Cost efficiency, differentiation, new innovative services, customer proximity best tools

Comments: 1 service provider did not believed in new innovative services, reputation and customer proximity

5.3 Industrial service company survey

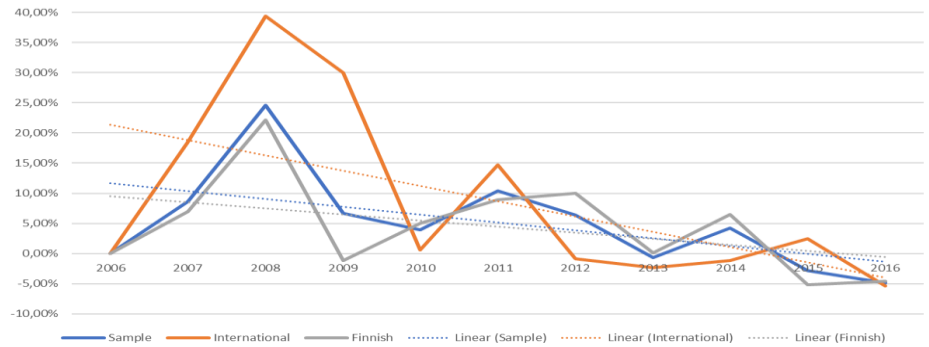
5.3.1 Quantitative analysis by financial and annual reports [1,9,18]

On the basis of the available financial and annual reports and other public data and information, the following findings were produced (see figures for main points):

- The industrial service business has grown, but the growth rate has been decreasing – flat during the last 5 yrs. The average annual change in revenue: sample 5.6 %; international 9.6 %; Finnish 4.9 %
- The industrial service business has grown due to 1) outsourcing of services increased; 2) mergers and acquisition; 3) customers' investments; 4) wider offerings. The growth rate decreased due to 1) fierce price competition; 2) divestments; 3) less mergers and acquisitions.
- The industrial service business has been profitable (except for 2012) but fluctuating. Profitability decreased in both international and Finnish companies but has been stable. The average annual EBITDA percentage: sample 4.9 %; international 3.5 %; Finnish 5.6 %
- Profitability in the industrial service business has decreased and fluctuated due to 1) fierce price competition, 2) new entrants, 3) buyers' strong bargaining power, 4) poor project management and 5) raw material prices
- Macro environment impacts: 1) EU directives, 2) economic shocks, 3) raw material prices, 4) technological development and 5) severe weather conditions → weather proof network → underground cabling
- Industry environment impacts: 1) supplier bankruptcy and price changes, 2) substitute products, 3) fierce price competition, 4) new entrants and 5) buyers' strong bargaining power
- Firms' internal environment impacts: 1) mergers, acquisitions and divestments, 2) integration, 3) employees, 4) negative cash flow, 5) project management, 6) procurement, 7) continued development and 8) balance of portfolio offerings

Conclusion: The service companies studied have lost their growth and profitability decreased; increased competition and new competitors are the main reasons.

Figure 7. Industrial Service Company Growth years 2006–2016



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Amount of companies	0	7	7	8	8	8	9	9	10	10	10
Sample	-	8,63 %	24,57 %	6,63 %	3,90 %	10,39 %	6,42 %	-0,70 %	4,19 %	-2,86 %	-4,83 %
International	-	18,52 %	39,33 %	30,01 %	0,62 %	14,75 %	-0,83 %	-2,32 %	-1,15 %	2,43 %	-5,38 %
Finnish	-	6,98 %	22,11 %	-1,17 %	4,99 %	8,94 %	10,05 %	0,11 %	6,48 %	-5,13 %	-4,60 %

AVERAGE ANNUAL CHANGE IN REVENUE

SAMPLE

5,6%

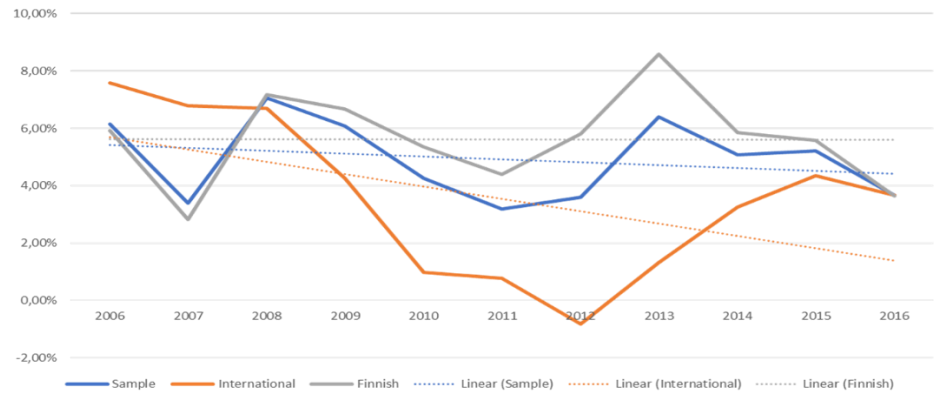
INTERNATIONAL

9,6%

FINNISH

4,9%

Figure 8. Industrial Service Company Profitability 2016–2016



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Amount of companies	7	7	8	8	8	9	9	10	10	10	10
Sample	6,16 %	3,39 %	7,06 %	6,07 %	4,26 %	3,19 %	3,60 %	6,40 %	5,07 %	5,21 %	3,66 %
International	7,58 %	6,79 %	6,70 %	4,27 %	0,98 %	0,77 %	-0,82 %	1,32 %	3,25 %	4,35 %	3,67 %
Finnish	5,92 %	2,82 %	7,17 %	6,67 %	5,35 %	4,40 %	5,82 %	8,58 %	5,85 %	5,58 %	3,65 %

AVERAGE ANNUAL EBITDA-%

SAMPLE

4,9%

INTERNATIONAL

3,5%

FINNISH

5,6%

5.3.2 Qualitative analysis by questionnaires and in-depth interviews [11]

The selected service companies comprise a very versatile, diverse constellation of the industrial service industry. The companies were founded between 1996 and 2016. Table 4 presents a breakdown of the selected service companies sorted by sales, number of personnel, services and owners.

Table 4. Constellation of surveyed service companies

Sales/millions	Number of companies	Personnel	Number of companies	Services	Number of companies	Ownership	Number of companies
Total 1.500	**Total 20**	**Total 8600**	**Total 20**	Electr./tele	6	PE/mng	7
➢ >100	5	>1000	3	Electr./tele/DH	4	Public	2
➢ 50-100	3	500-1000	3	El./tele/Ind/ICT	1	2-3 EnGr	4
➢ 20-50	4	200-500	2	Electrical	5	1 EnGr	3
➢ 10-20	4	100-200	4	Industry	3	IndGr	2
➢ <10	4	<100	8	ICT	1	Mng	1

PE=private equity, EnGr=Energy Group, IndGr=Industry Group, Mng=Management

The industrial service company questionnaires and in-depth interviews surveyed the respondents on their experiences during the last 20 years and their views on the future of industrial service business development, as well as their customers' behaviours on the service company's perspective. The findings are summarised below:

- A strategy process is in use by all companies and the board and personnel are connected to this, but targets have not been achieved; weak execution
- All have growth targets in Finland, as well as growth expectations from new services and mergers and acquisitions
- SWOT, unit costs, customer surveys and developing competences are the main tools for exploring critical success factors – value chain, BCG matrix and VRIO model not used
- Very low investments in business and service development – total of <€5M/yr in 19 service companies
- Profit review, contract audit with customer and tender audits are the most favoured tools for achieving a competitive advantage – new service thinking not a high priority
- Service companies' efficiency improvements have been 2–3%/yr., totalling 10–30% over 10 yrs; efficiency improvements are also expected in the future
- Taking care of key competences, profitability, customer proximity and new services are critical when developing competitiveness, not following competitors and not internationalisation
- Management is not satisfied with EBITDA development but it is better for efficiency and competitiveness. Lay-off process works properly and is used widely, as is the 'work hour bank' model
- Project management; resource, subcontractor and workforce management; management of systems and procurement are critical competences and resources of service companies – unanimously agreed
- Unanimously the company's positive reputation/brand; incentive system are the most supported tools to the retention of key resources in the company, also promotion and training – not through 'more engaged work contracts'

Conclusions: Competitive advantage and taking care of critical resources are not a high priority; there is not much in the way of new service development or competitor differentiation plans.

Figure 9.

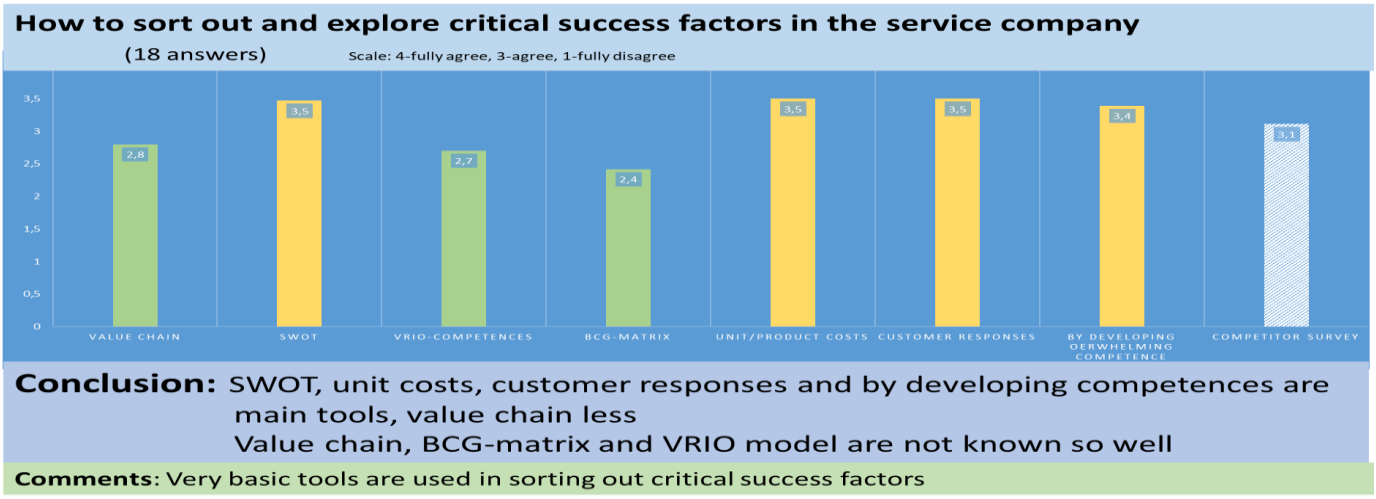


Figure 10.

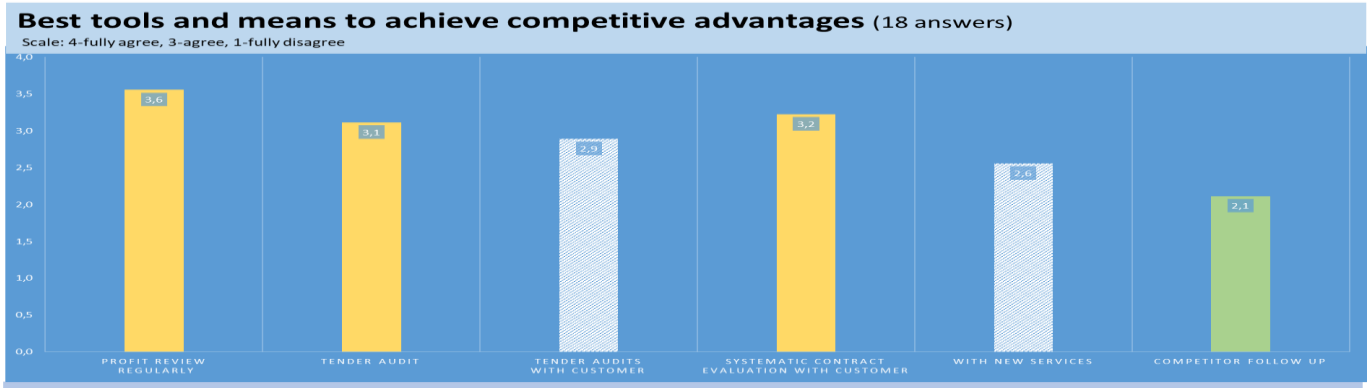
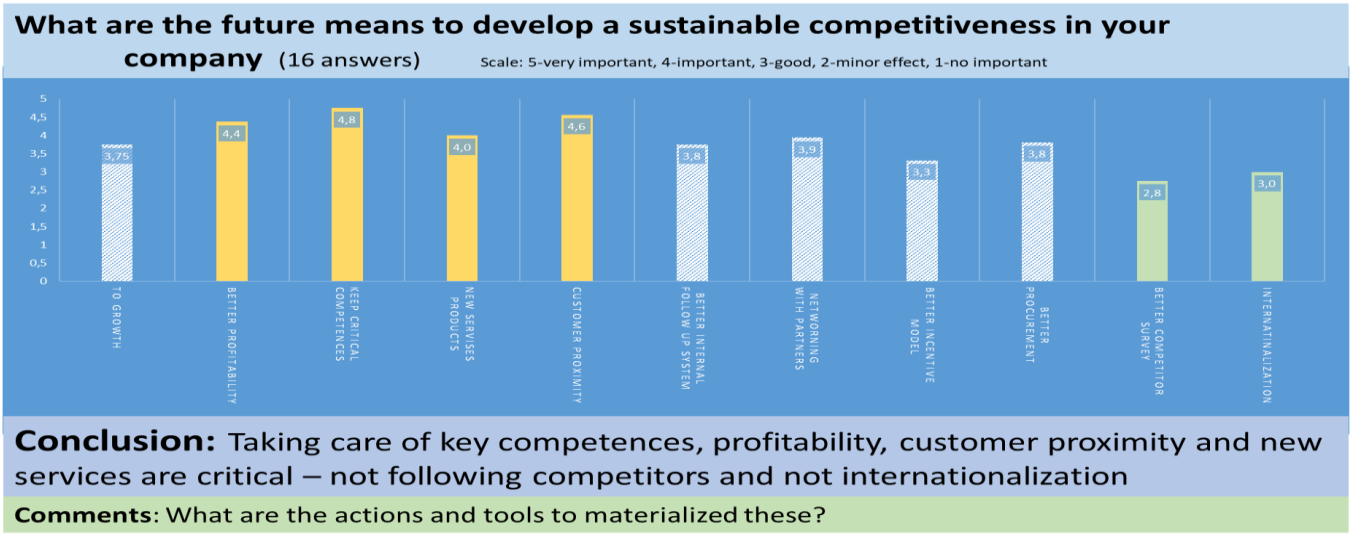


Figure 11.



.6. Discussion and conclusion

6.1 Assessment of research results

Table 5

Qualitative analysis	
Findings in nut shell	**Remarks and Conclusions**
Strategy process is widely used as well as BSC and monthly profit follow up systems – profitable growth targets	**Targets (growth, profit) have not achieved** – mostly, the market is growing – **new competitors**
New competitors have taken a market share in the growing market.	Has the older service companies' agility capabilities too slow to make needed efficiency actions?
Municipality owned service companies' growth have been very limited during 20 yrs with low profitability	Is it owners' strategy? The mother energy company has been the biggest customer.
Remarkable efficiency improvements in customers' services achieved – in service companies too but they are lower	Service prices and profits have lowered – profitability challenges to service companies, strong buyers' power still and will continue
Very limited resources and investments on service development and new services – mainly price competition in tenders	**No differentiation**, very limited business development – some ideas in utilizing more a digitalisation/IoT in new services

Table 6:

Quantitative analysis	
Findings in nut shell	**Remarks and Conclusions**
Customers are very satisfied with outsourcings.	No plans to insource respective services. More outsourcing and larger service packages will come. **Customer more in land lord/asset owner – roles**.
Market created – many new competitors, international too	**Authorities (EV) have been in key role** - the main driver – open market will continue
Most recommended owners of service companies are management, private equity and public, less municipal	Connections to municipal mother company restrict the market based business.
Few trademarks, none patents in service companies	New development investments very low
Critical competences have not been systematically defined, followed, developed and taken care.	Resources are easily moving and leaving
No systematic Competitive advantage business processes	By using in business plan process simple accounting-, SWOT-, Value Chain- and VRIO-models can create sustainable Competitiveness
Customer proximity not very deep, not known partners value chains	Much to do in creating more added value to partners – a value chain of the total process

6.2 Assessments of research questions

The research results have been summarised below in terms of how they relate to the research questions:

Question 1: How have industrial service companies performed during the past 10 years

- Most of the studied companies have grown although the growth rate has decreased while market growth has been very high
- The average annual change in revenue: sample 5.6%; international 9.6%; Finnish 4.9%
- Profitability of the companies has fluctuated and decreased
- The average annual EBITDA %: sample 4.9%; international 3.5%; Finnish 5.6%.

Question 2: What have impacted on the performance of each company during the past 10 years based on available data?

- Fierce price competition mainly cost leadership, no differentiation strategies
- Customers have outsourced more services and increased investments – market growth
- High number of mergers, acquisitions and divestments
- Many new entrants, project management, raw material prices

Question 3: What are the means and tools to create sustainable competitive advantages and enablers in the industrial service business?

- More openness, trust and transparency; total value chain of services
- More new service models and products – investments needed for differentiation (how?)
- Systematic analysis of core competences; develop and protect them; VRIO model proper tool for that.

Question 4: Is there a conflict in sustainable business targets between service providers and customers?

- Fierce price competition mainly cost leadership, no differentiation strategies
- Customers have outsourced more services and increased investments – market growth
- High number of mergers, acquisitions and divestments
- Many new entrants, project management, raw material prices

Question 5: Can you find win-win position both to service providers' and their customers' businesses, how?

- Proximity, trust, openness, partnership
- Tendering process developed mutually
- Procurement process development
- Total value chain understanding of both parties
-

6.3 How to achieve a sustainable competitive advantage

The research results show that service companies need added development processes to achieve a sustainable competitive advantage. The process is described in Figure 12. The process is separated into the four subprocesses described below:

a) Critical Competence Resource plan
Using SWOT and Value Chain analyses, define company VRIO resources, follow and protect them (see Appendix 1, reference process described) – not used today

b) Profitable Growth plan
Action plan to execute strategy targets, with regular follow-ups – normally used today

c) Market analysis, Customer Proximity plan
Keep close and active watch on the market and key customers; create win-win analysis jointly and openly for the total service process, utilising value chain analysis – today partly used

d) Service Business Development plan
Prepare service/product development plan – differentiation and/or efficiency improvement. Reserve necessary resources, partly with customers.

Figure 12. Sustainable Competitive Advantage process chart

7. Remarks and observations

The following findings have been generated by this research, through interviews, questionnaires, data collection and their analysis:

- Sufficient liquidity/solvency resources are required by owners for project guarantees and better cash management.
- Changes in ownership have had little effect on businesses. More market thinking.
- Service companies connected to energy groups restrict the development of the service market, which is still in part a captive market.
- Innovation incentives do not create the motivation for new service development.
- In digitalisation/Internet of Things, big business is waiting to improve processes and services but has limited resources/investment.
- Both customers and service companies are expecting more business consolidations.
- Disturbance Resource reservation system/contracts needs to discuss and improve ccustomer-service companies' co-operation.
- Project and service business have different business models and drivers. Some service companies have selected where to concentrate. Can you make both?

8. Future research

The following future research programmes are proposed:

1. To build up the work tool/model/system for sustainable competitive advantage in the services business
2. Personnel participation and activation for critical competence development
3. Promotion of digitalisation in industrial service business development
4. Total value chain development service provider – network customer – win-win target
5. Service innovation development in industrial service businesses – motivation, obstacles, promotion
6. In-depth analysis of project and service business drivers and differences
7. Various owner groups' (municipal, private equity, public, management) strategic targets in the Industrial service business and in the invested company.

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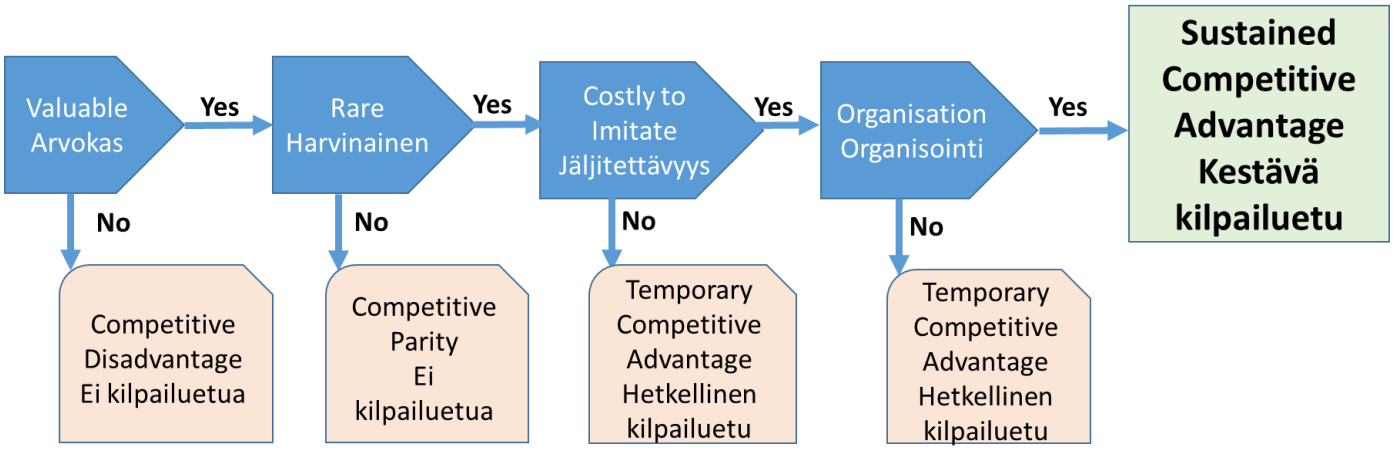
Appendix 1 How to define and identify VRIO resources and an example

How to Identify VRIO resources?

Step 1	Identify VRIO resources	Cost and differentiation advantages VRIO questions, Value chain, SWOT
Step 2	Find out, if your company is organized to exploit these resources	Is your strategy effective, effective motivation and reward system, do you have the excellent mng and control systems
Step 3	Protect your resources	By all possible means, top mng has to be aware of such VRIO resources, which can lower the costs ad/or differentiate prodducts or services. Ideas how to make it more costy to imitate?
Step 4	Constantly review VRIO resources and capabitities	The value of resources changes over the time – review is needed constantly

Value Chain - Arvoketjuanalyysi

VRIO framework/VRIO työkalu



VRIO – resources and model

	Question of	Description	Functions
V	**V**alue	Is the resource or capability to understand business opportunities and threats – exploit or mitigate	Technical changes Demographic changes Cultural changes Economic climate Specific international events Legal or political condition
R	**R**arity	Absolutely unic resource or capability	Short in time and persistence over time First-mover advantage
I	**I**mitability	Innovative companies can gain long-term competitive advantage. Costly to imitate	Patents, social complexity, unic historical conditions, causal ambiguity
O	Organization	Organized to Capture Value, how to organize	Reporting structure, mng control system, compensation policy, processes, culture

VRIO RESOURCE ANALYSIS
Example Company ABC

1(2)
Aappo Kontu 13.6.2018

Atribute Resurssi/osaaminen	Valuable Arvokas	Rare Harvinainen	Imitable Jäljitet-tävyys	Organsation Organisaatio	Imploication Notes Päätelmä, kommentti
Market/business understanding Markkinoiden ymmärrys	YES	YES	NO	YES	First mover advantage Temporary Competitive advantage
Project management Projektijohtaminen	YES	YES	NO	YES	Project management, lean
Procurement Hankintatoimi	YES	NO			Competitive parity
Work force management Resurssien ohjaus	YES	No	No	Yes	Not special management tools Competitive parity
Flexibility in resources Työvoimajoustot	YES	No			
Subcontracting management Alihankkijoiden johtaminen	YES	YES	YES	YES	**Sustainable competitive advantage** Long term connections to subcontractors
Financial resourses Taloudelliset resurssit	YES	YES Profit ++	NO	YES	Temporary Competitive advantage

VRIO Resource ANALYSIS
Example Company ABC

2(2)
Aappo Kontu 13.6.2018

Atribute Resurssi/osaaminen	Valuable Arvokas	Rare Harvinainen	Imitable Jäljitet-tävyys	Organsation Organisaatio	Imploication Notes Päätelmä, kommentti
Management sytem/tools Johtamisjärjestelmät	YES	NO	NO	YES	Competitive parity Lean organisation
Engineering system Suunnittelujärjestelmät	YES	NO	NO	NO	Competitive disadvantage Not most important
Detail engineering competence Erikoissuunnittelu	YES	NO	NO	NO	Competitive disadvantage Not most important
Own installation resources Omat asennusresurssit	YES In project	NO	NO	NO	Competitive disadvantage
Company Brand/Reputation Yhtiön brandi/maine	YES	YES	YES	YES	**Sustainable competitive advantage** Take years to build up
Innovation system Innovatiojärjestelmä	YES	NO	NO	NO	**Competitive disadvantage** Not invested at all
Other Muuta					