

Advanced export model for DH/DC solutions

Present status, opportunities, development needs

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Outline

1. Objective
2. Present status
3. Total offering elements
4. Cooperation sales concept
5. Conclusions



1. Objective

- Define the weaknesses, strengths and development opportunities in present cooperative promotion and sales model
- Analyse and develop the consortium (e.g. key members and roles)
- Analyse and develop the offering that has a competitive edge compared to some international competitors
- Analyse and suggest focus market(s) that are relevant and realistic for the cooperative sales activity
- Develop a systematic cooperation model for effective promotion, lead generation and sales



2. Present status

Effective sales requires different stories

Business as usual – tasks, roles and content

- Fulfilling customer needs
- Existing clients and segments
- New clients in existing segments
- Existing distribution channels
- Present and new offering
- Present earnings model
- Sales resourcing based on sales targets
- Sales team incentives

Business options seeking for better positioning

- Changing customer buying behaviour
- New client segments, decision makers
- New distribution channel
- New earnings model
- Corporate level sales incentives

Offerings (products)
Sales arguments, impacts
Buying behaviours



In case of challenging markets, cooperative sales can create new opportunities in market entry and sales

New strategic initiatives and needs

- Creating new needs and markets
- Priorities based on potential and feasibility
- Incentives for strategic renewal
- Client executives looking for maximum value, impact and new buying behaviour

Strengths and weaknesses



Strengths

- Finland is at the forefront of smart grid and metering systems development and adoption.
- Good competencies and companies in heating and cooling solutions.
- Understanding infrastructure, system thinking and optimisation is a Finnish strength.
- Finnish DH systems are world leading. Proof of concept exist with excellent result indicators.
- New cooling solutions e.g. Helens Katri Vala cooling solution is cutting edge.
- Companies have existing solutions for almost the entire heating and cooling value chain.

Weaknesses

- Some heat solutions are mainstream. Strong local operators and some large international players exist in many markets.
- Need to develop offering cooperation between Finnish solution providers.
- Need to develop presence in target markets.
- Need for integrator for large scale projects, when customer wants to buy a "total solution", that has the critical mass to organise financing or take risks.
- Very good technological innovations exists, but need to develop skills in productization of solutions and/or exporting (general observation for Finland).

Total solution vs. niche solution



Offering a "total DH or DC solution" is a possibility but presents some challenges

- Finnish components and products are of very high quality, but can have a price disadvantage compared with local products eg. in China where high quality is not a primary focus – **selling optimised broader concepts could in some cases counter direct price competition.**
- **Some buyers want to buy a total solution and not split the solution into component based buying.** There is a need to develop a vision of a total heating or cooling concept and to be able to clearly demonstrate the benefits of system optimisation. **Finnish DH concepts can provide proof of concept with excellent indicators that demonstrate long-term and system level efficiencies and savings, especially in higher temperature networks.**
- Being able to demonstrate system benefits with a whole package including financing could be a winning concept, but the concept **needs an integrator.**
- Best possibilities for selling Finnish solutions may lie in projects where O&M is included. There is motivation to buy high quality and optimisation services when **lifecycle costs are considered.**

When selling individual products or solutions - necessary to find a niche market where local providers aren't too dominant and where quality is a key factor in decision making.

What needs to be considered?

- **Local regulations:** Solutions need to be adapted to local standards. Need to learn about local standards, regulatory drivers and practices. Local regulations and standards are in some cases perceived as protectionistic and a barrier for entry and in other cases as an important driver for market development.
- **Pricing:** Finnish components and products are of high quality, but can have a price disadvantage compared to local products with lesser quality. Need to sell optimized concepts or find niche markets.
- **Buying models and behaviours:** Knowledge of buying behaviour and pipeline for projects is essential. Need to increase knowledge of buying models and behaviour in different markets.
 - Who is the buyer? Do they want a total solution or do they buy individual solutions separately? Where in the project pipeline are the possibilities for different companies in the value chain and how can the relevant stakeholders be reached at the right time?
- **Local presence:** To have local knowledge and to be present locally is necessary in most cases – are companies ready to establish a local presence in key markets? Could this be done in collaboration?



Choosing potential market for joint offering approach

Evaluation of six countries for market potential (1/2)



Country	Market growth potential	Sales Potential		Total
	Prospects compared to present	Competitiveness**	Transparency*	
China	3	2	1	6
Korea	2	2	2	6
Germany	3	2	3	8
France	2	2	3	7
UK, Ireland	2	3	3	8
Netherlands	2	2	3	7



In this evaluation four countries from Europe were chosen for evaluation based on the identified heat demand in the EU heat roadmap. In addition China and Korea were seen to have good potential in Asia (dense cities, urban development and good financing possibilities or support for development).

• Transparency is estimated based on general information from different sources as well as interviews. Transparency relates to whether the counterparty is easily identifiable as well as clarity of process and following normal business practices.

** Competitiveness is estimated based on general information in desk study as well as interviews.normal.

3. Total offering elements

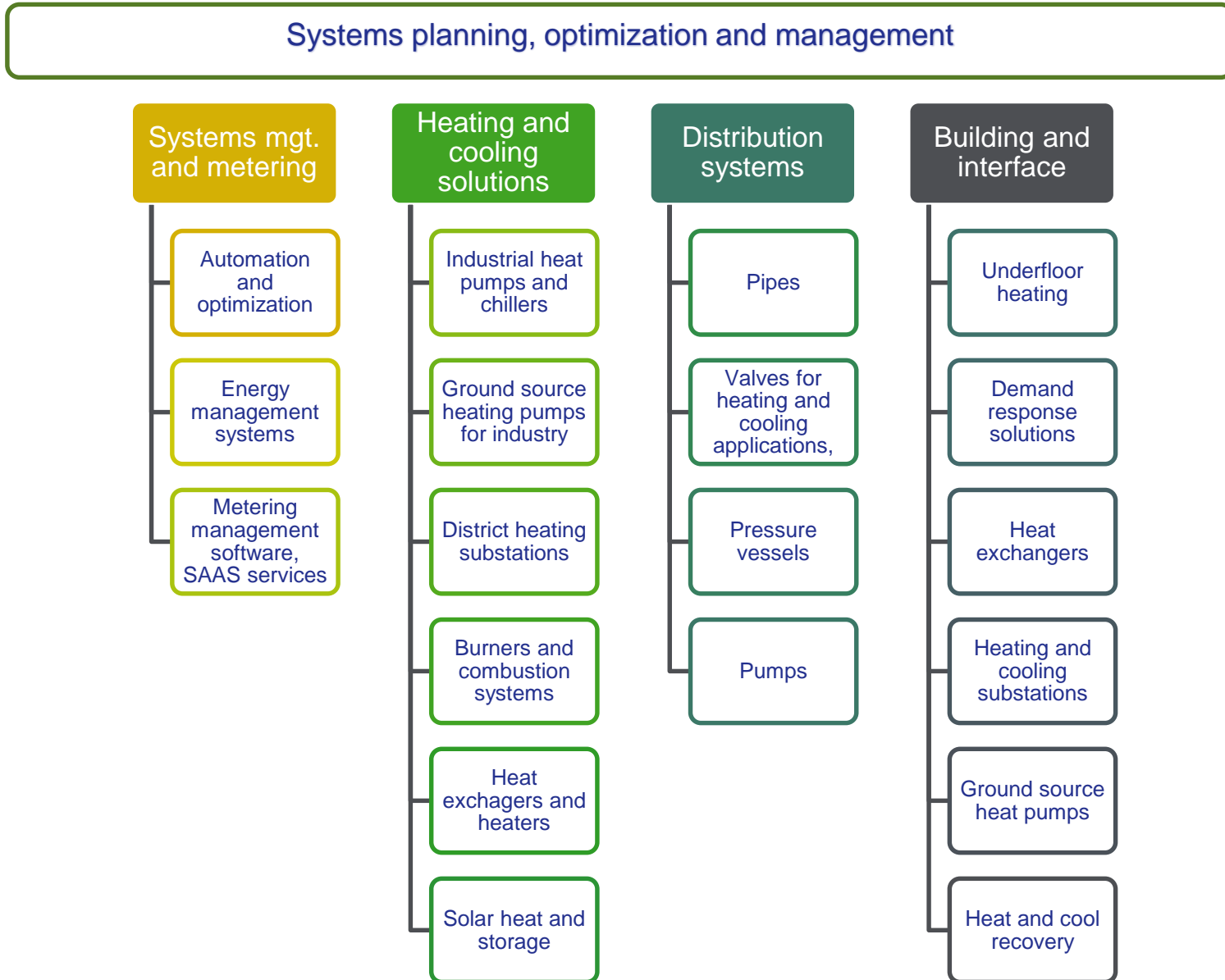
Offering - Added value for customers must be based on optimal performance, total offering and ease to buy



- One contact point - easy to buy
- Fast track engineering (scoping and specifications)
- Optimised total solutions bring long term advantages and efficiencies
- Capabilities for risk sharing and financing
- Focus on customers who respect and value quality and performance
- Important to create wins in markets which in addition to good potential have high transparency and clear roles



Offering - District heating and cooling value chain



Offering - District heating and cooling offering and selected solution providers

- Fortum is one of the largest DHC operation companies in the world, based in Finland, but operating DH and CHP also in Russia and elsewhere in Europe.
- Planora is highly experienced in planning and optimizing DH systems including networks.

Systems planning, optimization and management
 System level optimization – conceptual design and training of operation and maintenance are a Finnish strength where we have world leading solutions and performance.

Metering and energy management
 Automation, energy management systems, metering management, SAAS services

- Helen is the Helsinki City owned company responsible for the internationally awarded DHC system in Helsinki.
- Boiler operation efficiency can be improved by artificial intelligence.
- Landis & Gyr provides advanced metering management solutions.

Heating and cooling solutions

- Industrial heat pumps and chillers
- Small scale CHP systems
- Ground source heating pumps for industry
- District heating substations
- Burners and combustion systems
- Heat exchangers and heaters
- Solar heat and storage

Network/Distribution systems

- Pipes
- Valves for heating and cooling applications,
- Pressure vessels
- Pumps

Building and interface

- Underfloor heating
- Demand response and savings solutions
- Heat exchangers
- Heat recovery
- Heating and cooling substations

- Gas engines by Wärtsilä produce CHP that can be used for supporting voltage variations.
- Gas burners of Oilon have worlds lowest NOx emission levels for heat pumps.
- Biomass drying, pre-treatment combustion and gasification are the expertise of Ductor, VTT and Valmet. Flue gas condensing heat recovery can be designed and implemented by Valmet.
- Savosolar heat collectors have exceptionally high performance. Heat storage in bedrock by Heliostorage allows seasonal storage.

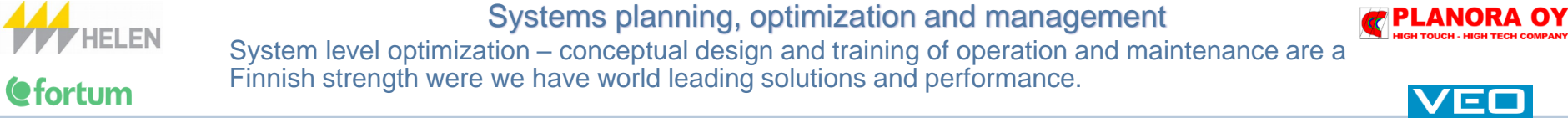
- Optimal design of the networks reduces heat losses and optimizes investments as being carried out by Planora for almost all DH companies in Finland and some abroad.
- Reliable closing and control valves are manufactured by Högfors (butterfly) and Vexve (butterfly and ball).

- Substations (BLS) are manufactured by Gebwell, a leading manufacturer in Nordic area. BLS comprises heat exchangers, pumps (Kolmek) and various valves (Vexve) and control systems (Ouman).
- Leanheat and Fourdeq have introduced smart applications using AI to reduce heat losses in buildings. Fourdeq system uses AI e.g. by means of the WiFi connected radiator thermostat.
- VTT research center is experienced in energy efficiency building specifications and monitoring.

Offering - District heating and cooling offering and selected solution providers

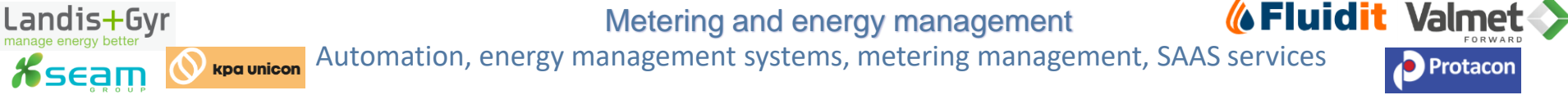
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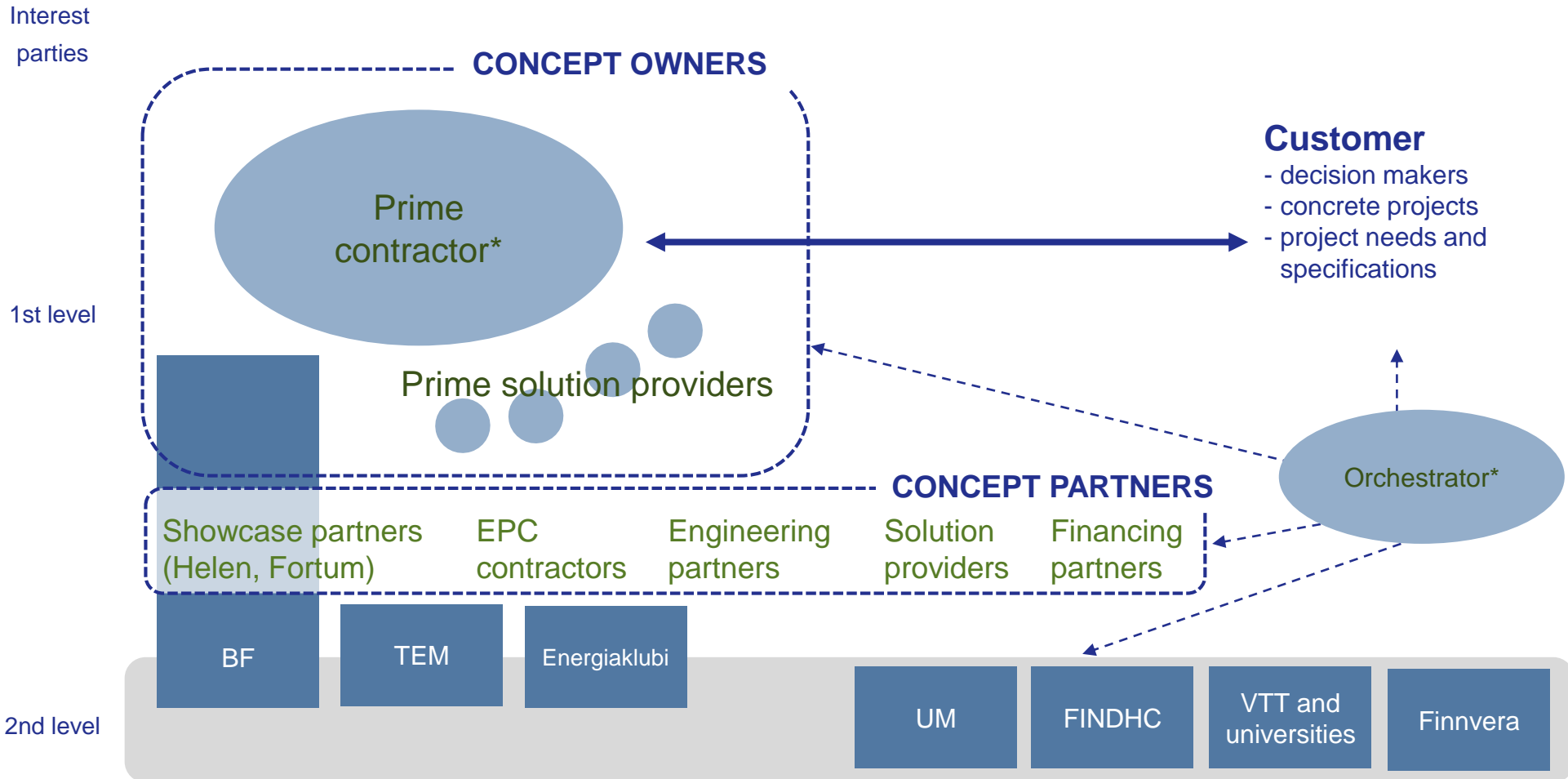
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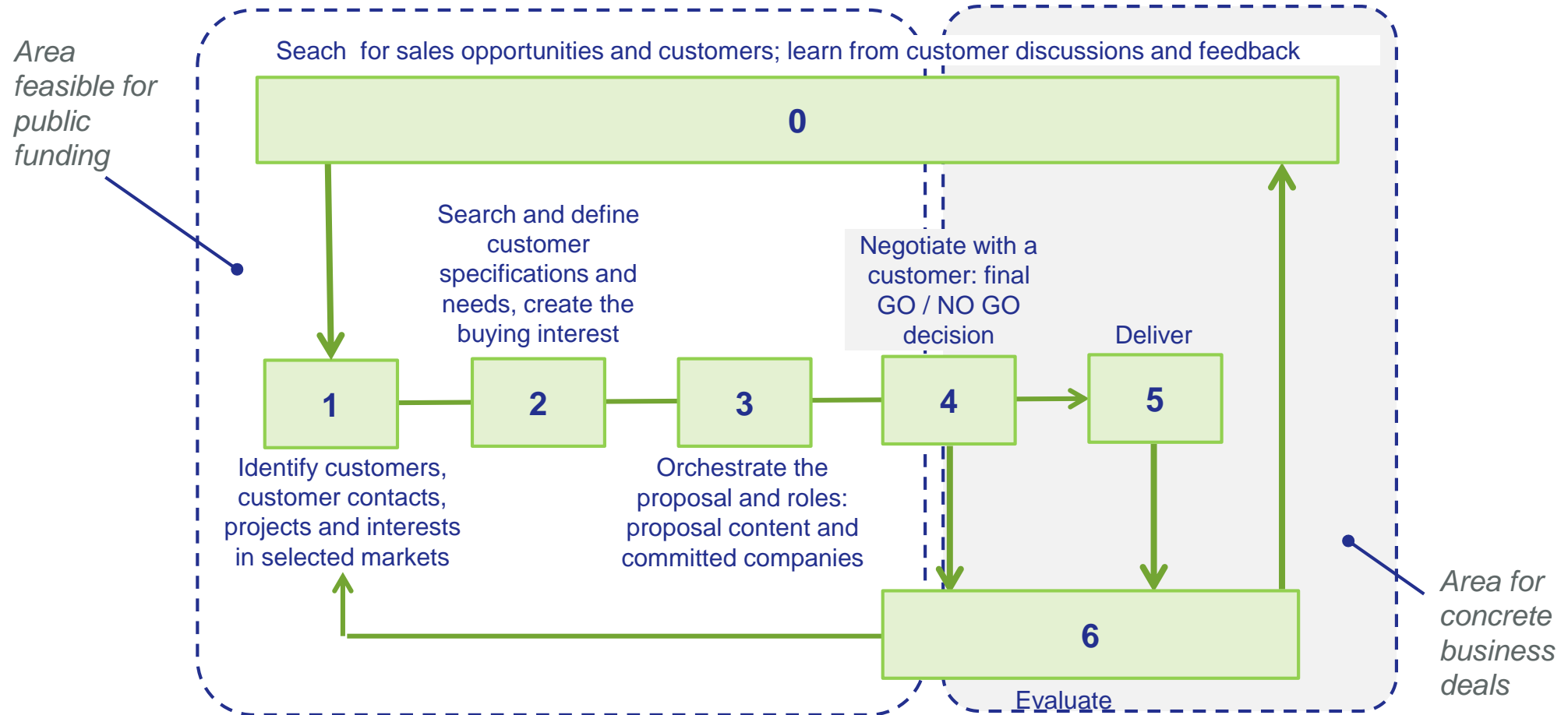
4. Cooperative sales concept

Model and roles



* Roles can be combined (same responsible organisation) or based on cooperation contract with a neutral party

Sales process



Different cooperation levels (A/B/C)

A. NETWORK COOPERATION

- CLOSE TO PRESENT MODEL
- NETWORKS OWN RESOURCES FOR BUSINESS OPPORTUNITIES' SEARCH AND COOPERATIVE SALES
- CONCENTRATION OF PROMOTION ACTIVITIES WITH BF
- WEAK COORDINATION AND MANAGEMENT POWER

B. ORCHESTRATED OPPORTUNITY SEARCH

- RESOURCES FOR
 - FOCUSED BUSINESS OPPORTUNITY SEARCH IN SELECTED MARKETS (2-3 COUNTRIES)
 - SELECTED CUSTOMER CONTACTING AND LEAD GENERATION (10 TARGET CUSTOMERS PER YEAR)
 - BRANDING
- CONCRETE SALES TARGETS (1-2 DEALS PER YEAR)
- COMMITTED CONCEPT OWNERS AND PARTNERS
- SYSTEMATIC COORDINATION AND MANAGEMENT POWER
- R&D ACTIVATION BASED ON MARKET KNOWLEDGE AND NEEDS

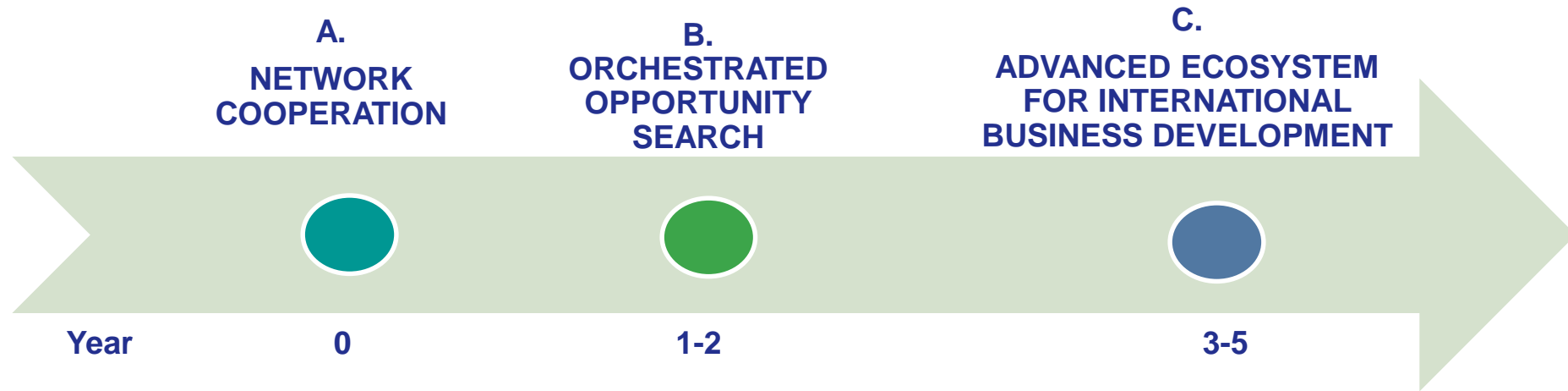
C. ADVANCED ECOSYSTEM FOR INTERNATIONAL BUSINESS DEVELOPMENT

- ADVANCED RESOURCES FOR
 - BROAD BUSINESS OPPORTUNITY SEARCH AND MARKET INTELLIGENCE (3-5 MARKETS)
 - INTENSIVE CUSTOMER CONTACTING (20 TARGET CUSTOMERS PER YEAR)
- CHALLENGING SALES TARGETS (3-4 DEALS PER YEAR)
- COMMITTED CONCEPT OWNERS AND PARTNERS IN SCANDINAVIA (FIN, SWE)
- INTENSIVE COORDINATION AND MANAGEMENT
- PROGRAMME LEVEL MARKET ENTRY, INNOVATION AND FINANCE SUPPORT (4G DH/DC)

Pros and cons of different cooperation levels

Cooperation models	Pros	Cons
A. NETWORK COOPERATION	<ul style="list-style-type: none"> • No needs for additional efforts • Development responsibility relies on existing fora (e.g. Energiaklubi, FIN DHC) • Is proven to be alive without an integrator 	<ul style="list-style-type: none"> • No resources to improve actions or networks nor expect results • Branding and image building is in status quo • No resources to identify and commit an integrator
B. ORCHESTRATED OPPORTUNITY SEARCH	<ul style="list-style-type: none"> • Requires limited efforts • Possibility to implement quickly • Measurable development path and impacts • Probability to establish defined roles (incl. an integrator) increases 	<ul style="list-style-type: none"> • Lacks branding and image building efforts on full blown international level • Research profile not leverageable in global context
C. ADVANCED ECOSYSTEM FOR INTERNATIONAL BUSINESS DEVELOPMENT	<ul style="list-style-type: none"> • Possibilities for total offering development (FIN, SWE) and global visibility • Efficient lead and innovation generation • Competence development synergies • Research in 4G DH/DC leverageable for branding purposes 	<ul style="list-style-type: none"> • Requires high effort to implement (cooperation, branding, establishing research cluster etc.) • Currently no clear research focus at universities on 4G DH/DC solutions - could require major effort to start

Roadmap for the cooperation development



5. Conclusions



- All stakeholders agree on the fact that the Finnish district heat system and expertise is one of the leading ones globally in quality, performance and flexibility
- Companies have very different views as well as commitment levels in regards to cooperative sales actions (roles, resourcing, profile, focus markets)
- However they also agree that not much has been gained jointly in order to win market shares internationally
- There is a growing interest to step up on a higher and more organised level in cooperative sales actions
- This study produced several assets that can be used to initiate a concrete concept for an ecosystem, if companies commit in becoming part of that ecosystem
- Finally, this study must result in a crossing whether companies either are capable in stepping on a better performing level with cooperative sales or if they decide to remain on the present level with no specific targets nor joint commitment

Thank you!

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