

SWISS BROKERS

Project request

Kurt Hartmann, Head Software Development

Board of directors meeting, 6 May 2024

- The application EDPRI for editing for printout is implemented in Smalltalk and has to be replaced
- EDPRI generates printable input for our high volume printers from INPRE, the invoice preprocessing module of the asset manager
- Recommendation: Re-develop application in Java
 - Future-proof, state-of-the-art technology
 - Easy extensibility
 - Industry standard platform
- Costs: CHF 200'000
 - Development effort: 1 year (estimate)
- Request: Approval of project to re-implement the application EDPRI in Java

Problem Solving or How does a CEO think and why does it matter?

Information Technology in Practice

Dr. Marc Brandis, 6 May 2024

BUSINESS PROBLEM STATEMENT

(Senior) Management focuses on the benefits for the business

- Higher revenue
- Lower cost (e.g. through higher efficiency)
- Fewer risks



What is Mr. Hartmann's problem from a business perspective?

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Project request: Replacement of editing for printout (EDPRI)

Kurt Hartmann, Head Software Development

Board of directors meeting, 6 May 2024

Replacement of editing for printout (EDPRI)

- Support for EDPRI's technology (Smalltalk) becomes harder to obtain in the market
 - At present, this is not an issue
 - In the near future, it will become impossible or very expensive to make changes to the application
 - There are very few qualified software developers in the market
 - Within our organization, there is only one qualified developer, and he considers moving back to his home country (USA)
- EDPRI generates printable input for our high-performance printers from INPRE, the invoice preprocessing module of the asset manager
- Recommendation: Re-develop application in Java
 - Future-proof, state-of-the-art technology
 - High availability of technology and software developers
 - Easy extensibility in case of new/future requirements
- Request: Approval of project to re-implement the application Java (state-of-the-art-technology) for CHF 200'000

Problem Solving or How does a CEO think and why does it matter?

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PROBLEM STRUCTURING

Which alternative
solution options exist
for this issue?



For the analyzed solution options,
the following should hold true:

Mutually Exclusive

Collectively Exhaustive

Relevant (MECERE)

(No overlaps, no holes)

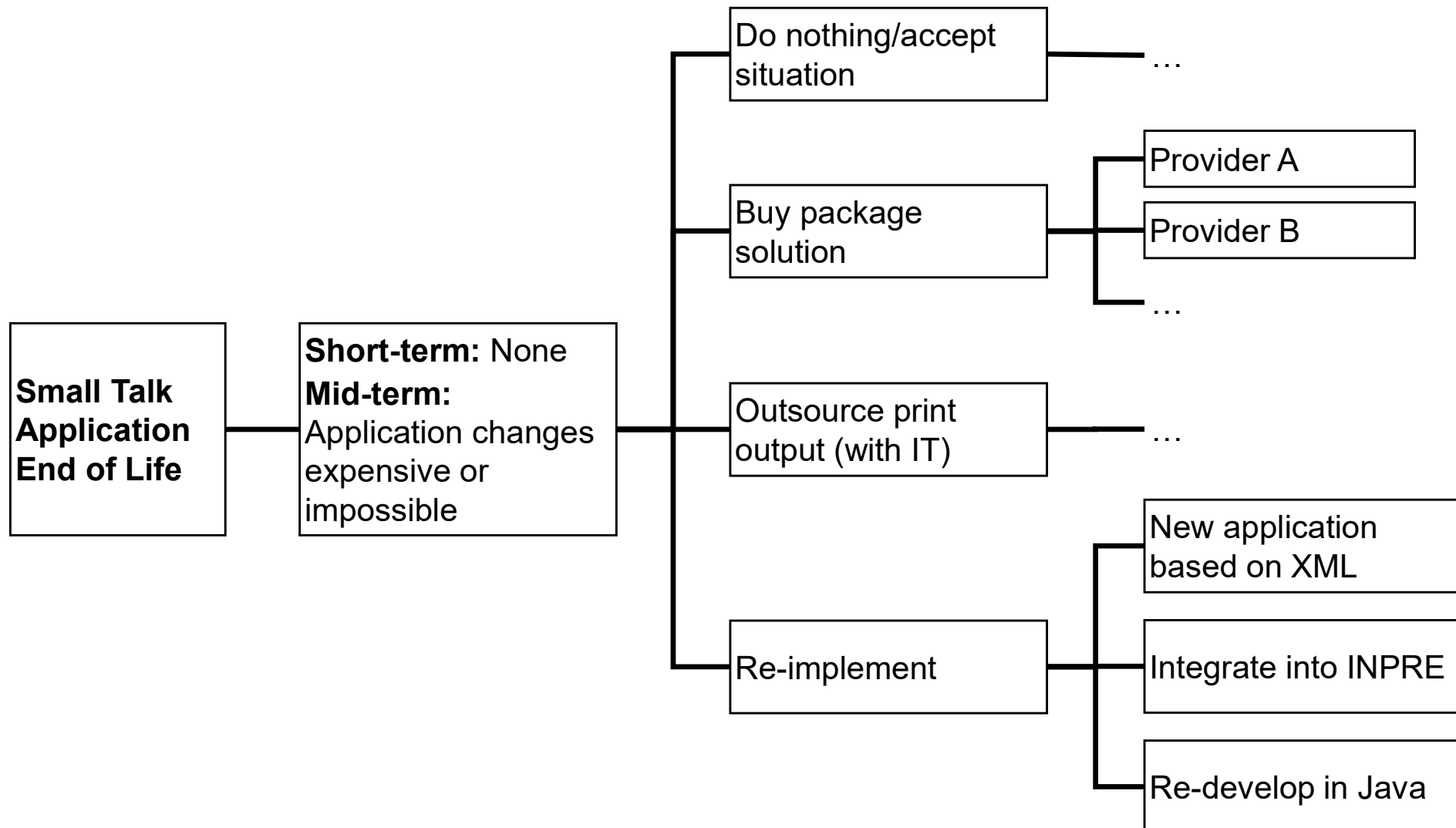
ANALYSIS OF SOLUTION OPTIONS

EXAMPLE

Technical
problem

Business problem

Solution option



DETAILED ANALYSIS

- Once there is clarity about the “solution space” with an option tree, it becomes easier to keep analysis on track
- To reach the objective quickly,
 - Distribute work within the team
 - Plan work in detail:
who is doing what until when?
 - “Slash options”: Do not follow options which do not seem promising

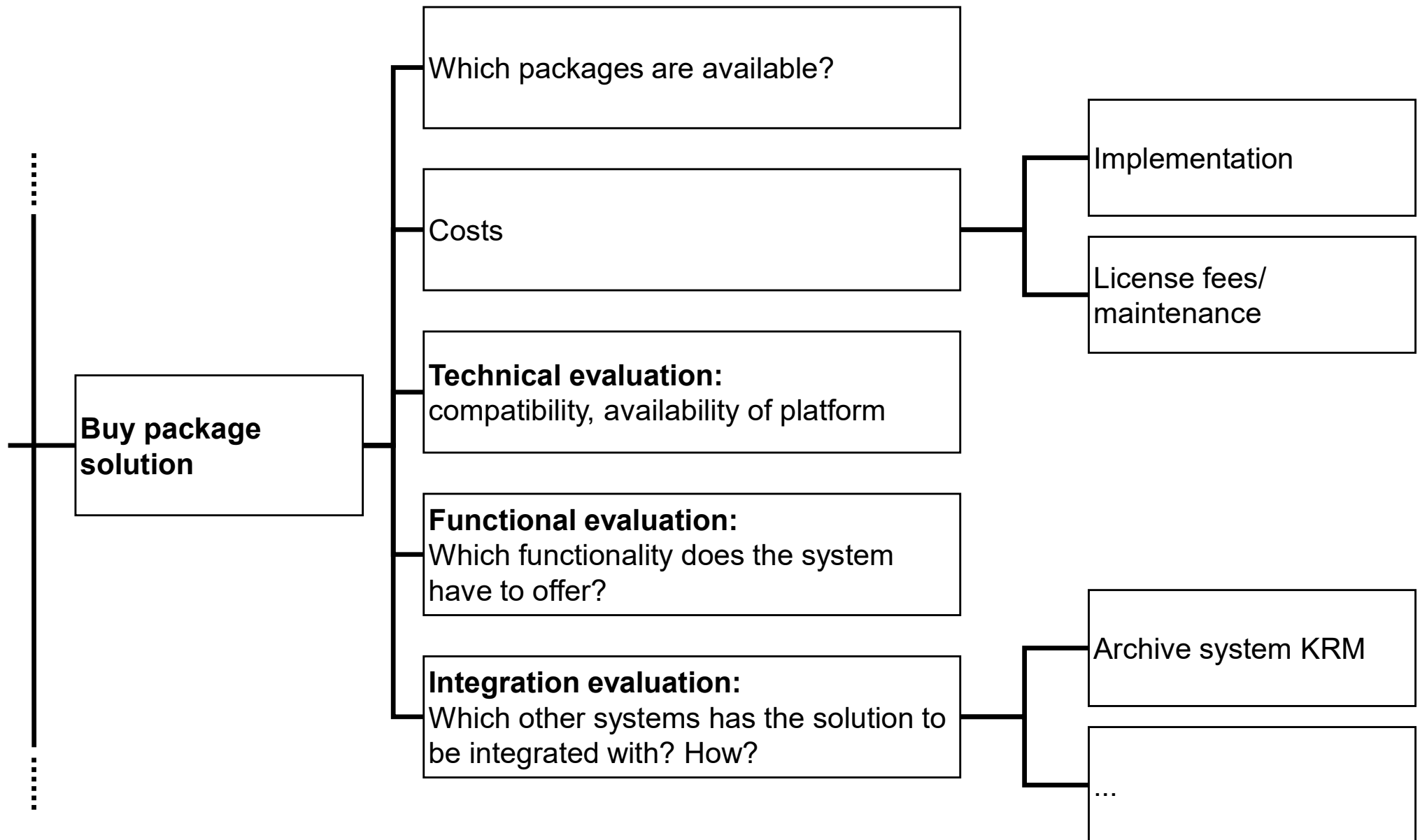


- Which solution options can be rejected outright?
- Why?



PACKAGE SOLUTION: DETAILED ANALYSIS

EXAMPLE



PACKAGE SOLUTION: WORK PLAN

EXAMPLE

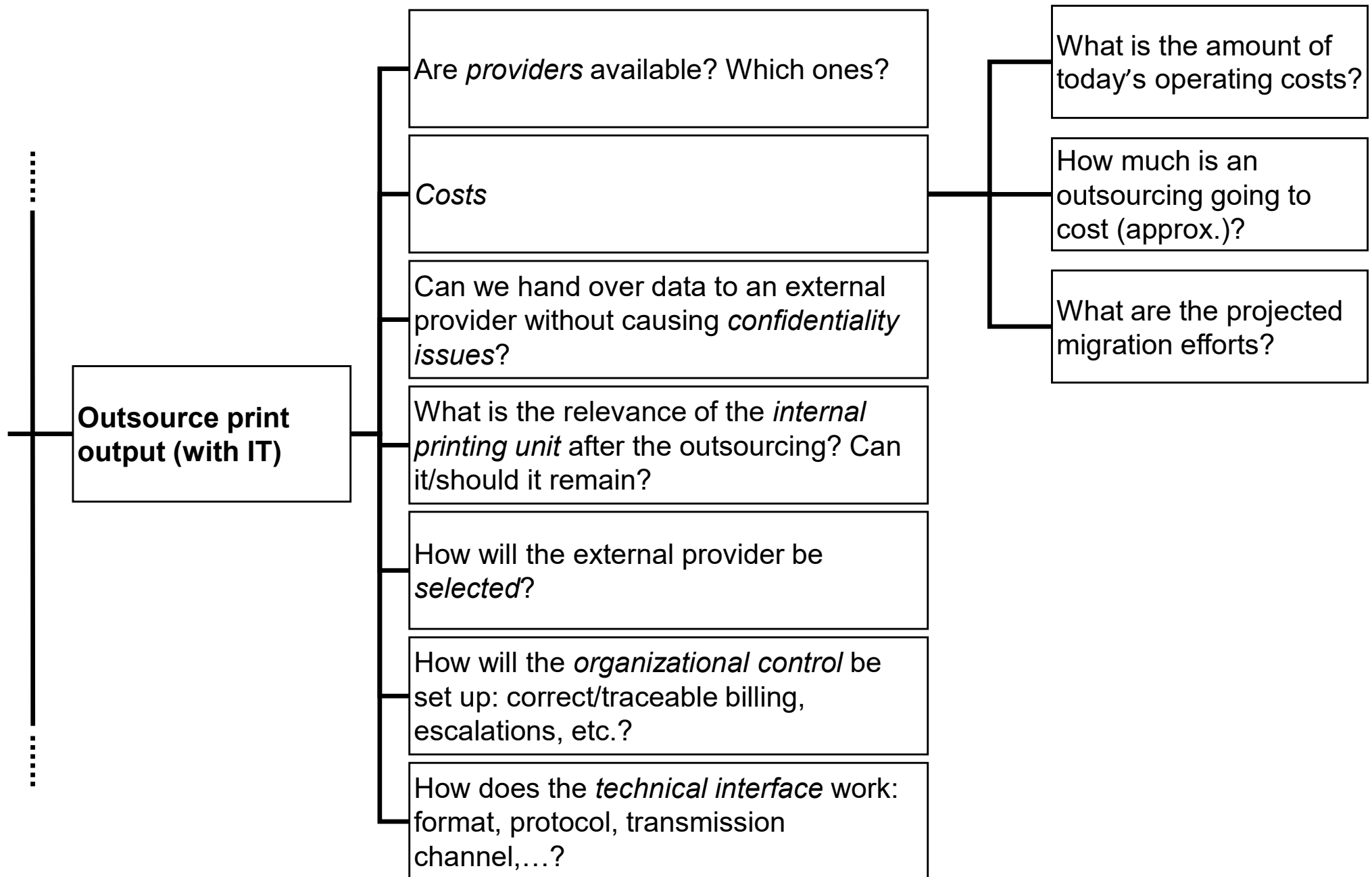
Package	Task	Prio*	Who**	When
• Packages	• Consolidate possible vendors and products	H	KH	W1
• Costs	• Initial consolidation of licensing fees and models per supplier	H	KH	W1
	• Initial implementation planning as basis for cost estimates	H	KH	W2
• Integration	• Interfaces to other systems of the existing application	H	FK	W1
• Functionality	• Required features to replace existing application	H	FK	W2
• Technology	• Criteria for the technical evaluation, identification of no-go criteria	M	FK	W2

* High, Medium, Low

** KH: Kurt Hartmann, PL; FK: Fred Kruger

OUTSOURCING: DETAILED ANALYSIS

EXAMPLE



WORK PLAN

EXAMPLE

Package	Task	Prio*	Who**	When
• Provider	• Confirm that providers exist	H	FK	W1
	• Compile list of potential providers	M	FK	W1
• Costs	• Analyze current operating costs	M	KH	W2
	– Application EDPRI			
	– Printer			
	– Proportion operations printing unit			
	• Calculate accel. depreciation of printers			
	• Estimate outsourcing costs			
	• Estimate migration costs			
• Confidentiality	• Clarify with compliance whether/how client data might handled by external providers	H	FK	W1
• Printing unit	• Analyze influence on printing unit costs	H	KH	W2
• Selection process	 To be done after decision about outsourcing has been made			
• Organizational control				
• Technical interface				

* High, Medium, Low

** KH: Kurt Hartmann, PM; FK: Fred Kruger

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Project request: Electronic invoice

Kurt Hartmann, Head Software Development

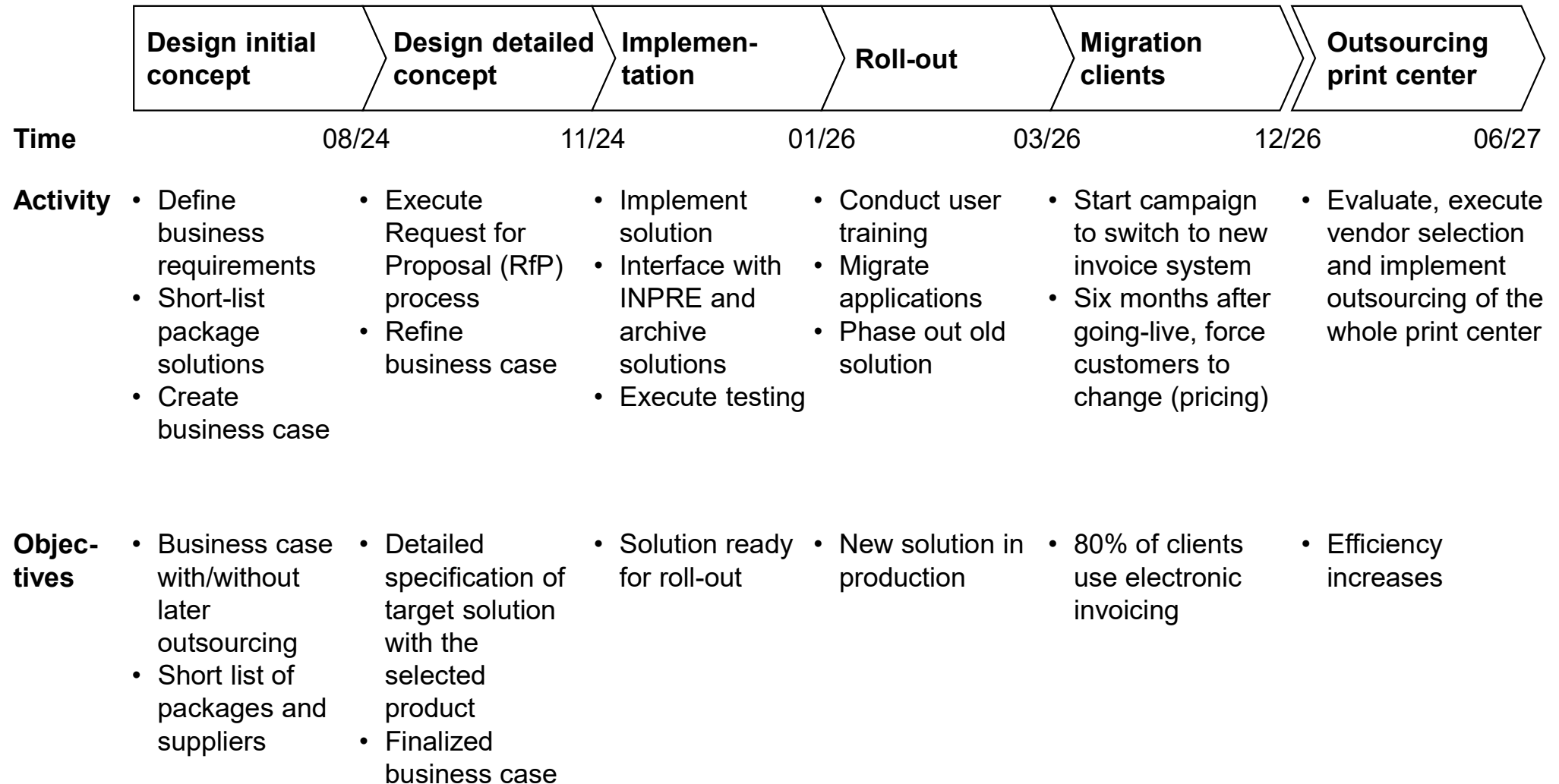
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- The application EDPRI for editing for printout to enable invoice distribution has reached its end-of-life. To minimize the risks that invoices cannot be sent out, it should be replaced within 12 months
- Billing distribution can be optimized significantly by introducing an *electronic invoice*, which will enable the outsourcing of our internal print center in the mid-term
- Proposal: Use the infrastructure changes to increase efficiency
 - Approach: Elicitate business requirements, evaluate package solutions, execute a Request for Proposal process, implement
 - Estimated costs: CHF 600k total project costs, CHF 100k yearly license fees

Request

1. Approve general approach and project kick-off with business
2. Approve CHF 50k to create initial concept. Presentation of concept and business case in BoD meeting on August 14th, 2024

ELECTRONIC INVOICE: SCHEDULE



SWISS BROKERS' PRINT CENTER HAS REACHED CRITICAL SIZE

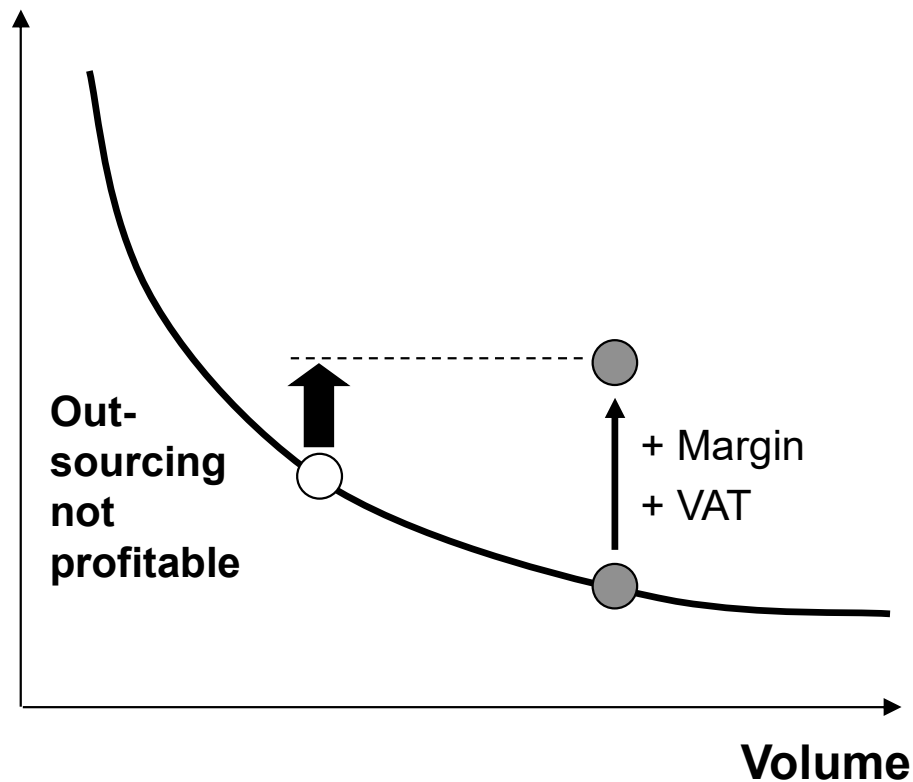
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CONCEPTUAL

○ Swiss Brokers ● Outsourcer

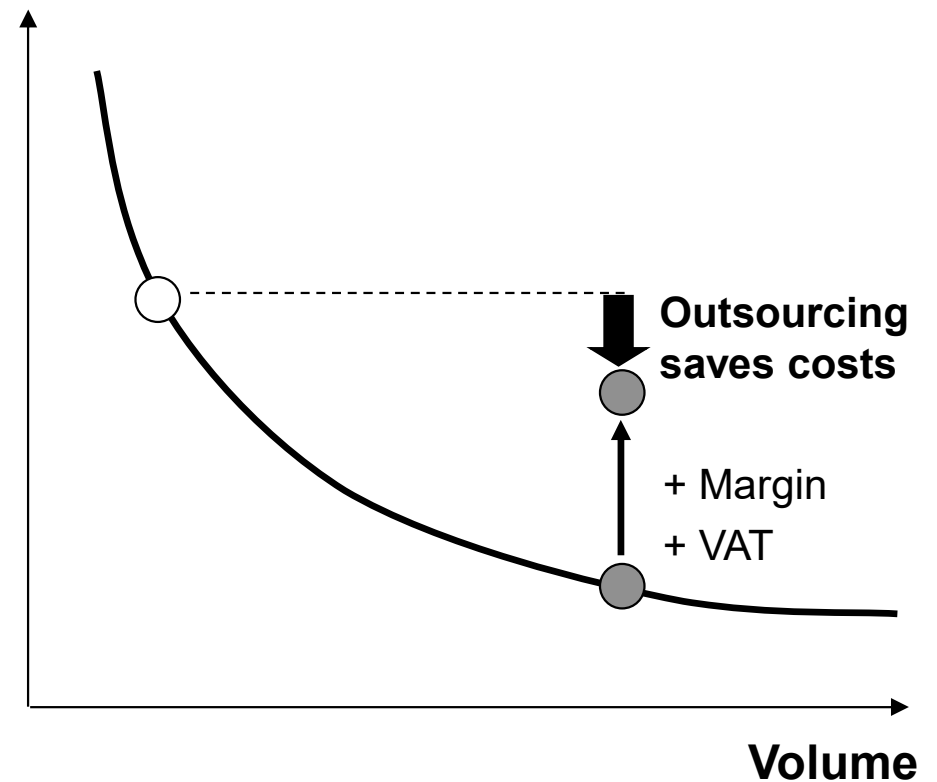
Today:
outsourcing is not profitable

Costs per unit



Future:
volume reductions make outsourcing an attractive option

Costs per unit



Problem Solving or How does a CEO think and why does it matter?

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CONCLUSION

- A *systematic* analysis facilitates the exhaustive and efficient solution of complex problems companies are facing regularly
- A clear **problem statement** is crucial for the success of the analysis
- A good analysis meets the requirements of MECERE*-ness
 - Practice has shown (as will be seen in the homework exercise) that this is often not easy
- Keeping a business perspective in mind makes sure that the analysis is **relevant** in a business context
- Often, issues in problem solving stem from
 - lack of clarity on what the problem to be solved is
 - lack of assigned responsibility
 - insufficient planning

* Mutually Exclusive, Collectively Exhaustive, Relevant

RETROSPECT: ISSUES WITH THE ORIGINAL EDPRI PROJECT REQUESTS

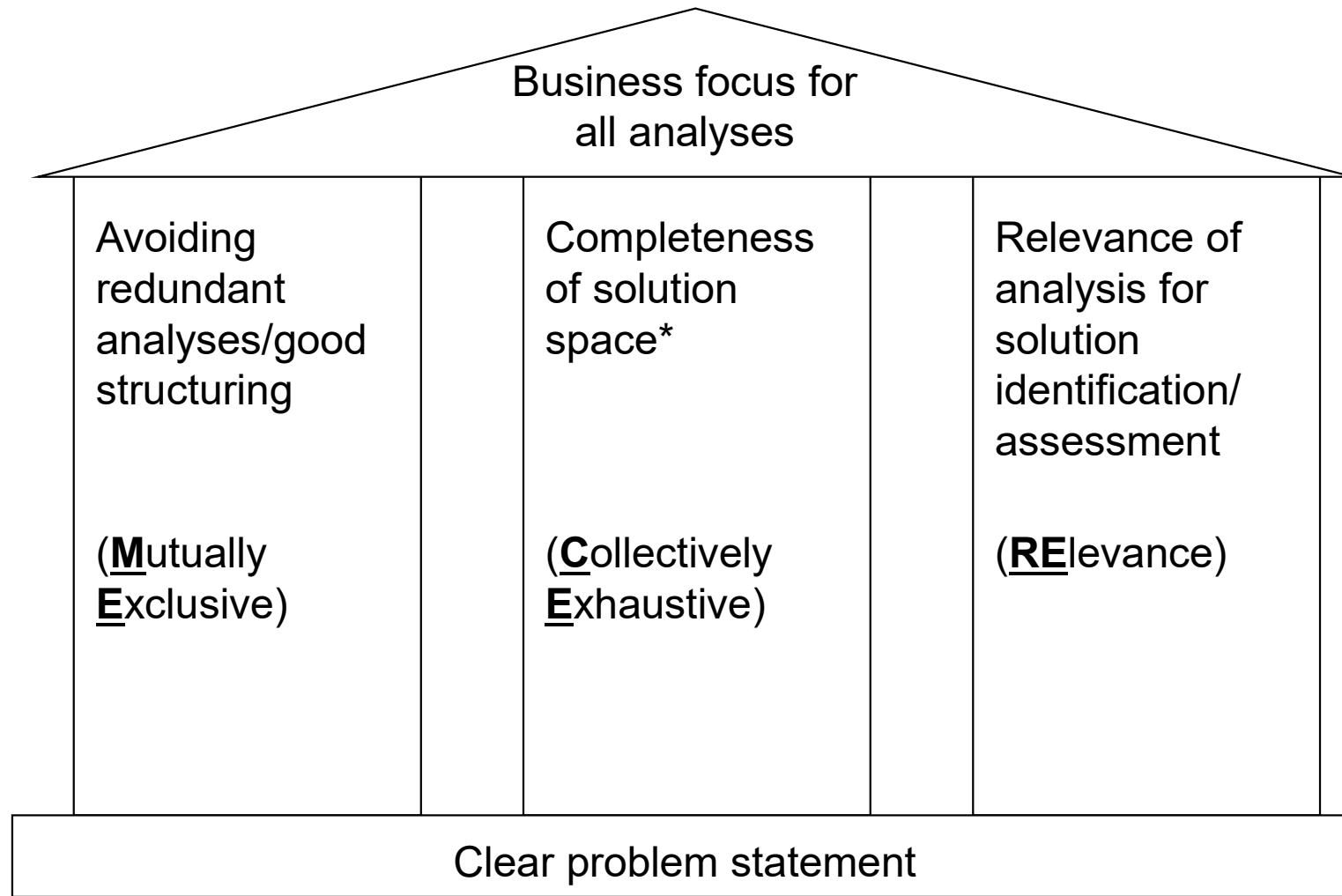
Lack of business focus in analysis and presentation

- The analysis was conducted from a purely technical perspective and did not show whether a business issue existed
- The presentation was full of technical terms which were not fully understood by non-IT staff

Incomplete analysis

- Important aspects from the environment of the EDPRI application were not considered (such as the discussion whether to outsource the print center or not)
- Alternative solution options known to the BoD were not analyzed

KEY SUCCESS FACTORS FOR PROBLEM SOLVING



PROBLEM STATEMENT – TEMPLATE

Question to be resolved	
The question focuses the analysis, avoids “boiling the ocean” and assures actionable results. The more precise the question, the better – but avoid the pitfall of phrasing the question too narrowly.	
Underlying problem	Decision makers
Describes the as-is situation and causes or effects, e.g. industry developments or the relative positioning in the industry.	Describes the manager who decides about the implementation of the recommendation, e.g. the CIO.
Decision criteria	Solution constraints
Provide the foundation on which the decision about the implementation is made, e.g. increased profitability.	Set limits to possible solutions, e.g. not reducing the headcount. Note: sometimes, constraints have to be relaxed during the course of the project.
Solution scope	
Defines the items that are out of scope for the project, e.g. international units.	