

Quadruplet for Concept Selection

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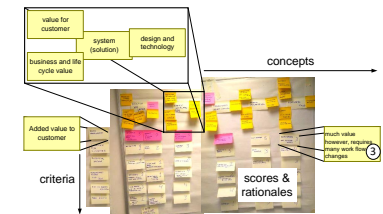
Abstract

The quadruplet provides a top-level view on an architecture, by capturing customer, business, and life cycle key drivers, relating them to system key performance parameters, to design and technology key design decisions. This format is also useful to characterize concepts for concept selection.

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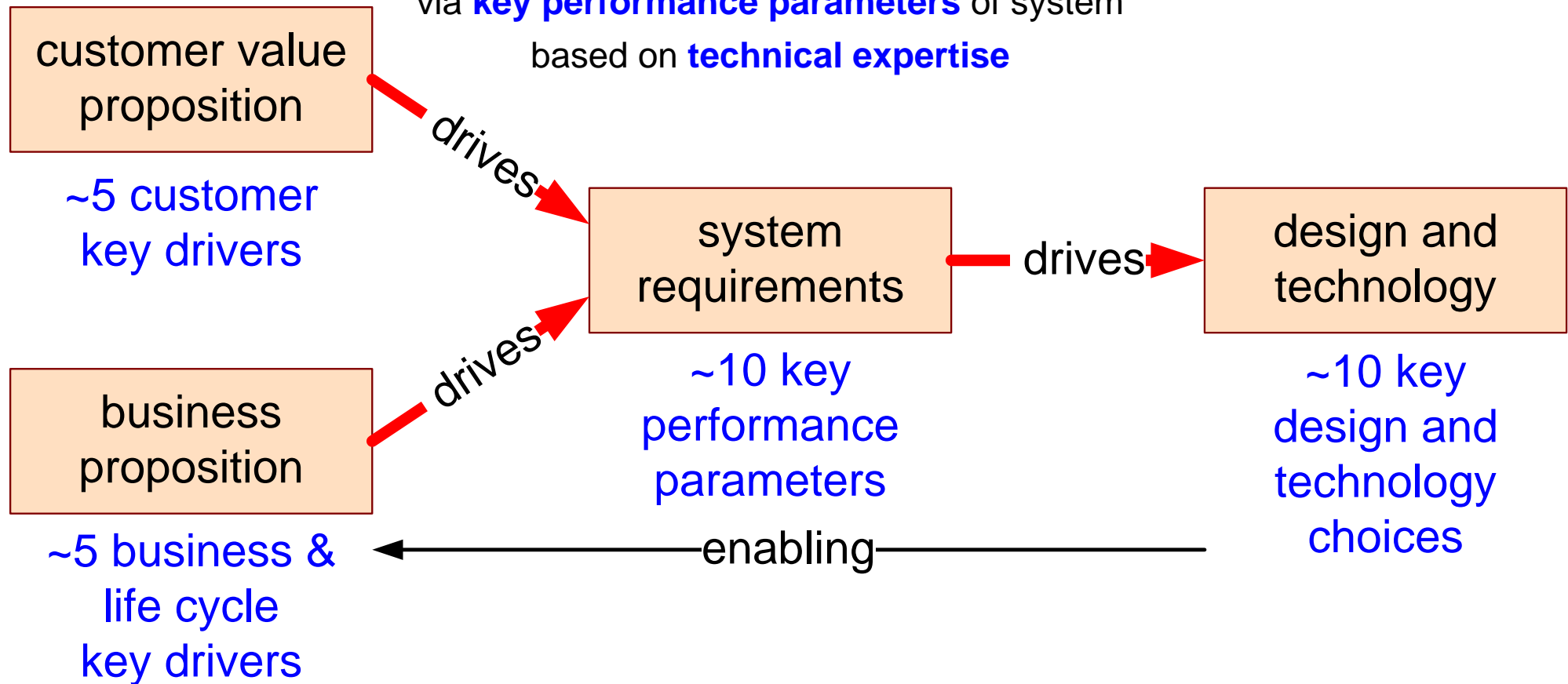
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The Quadruplet Defines the Essence of the System Architecture

Systems Engineering: *Fitness-For-Purpose*

Achieving **customer** and **business key drivers**
via **key performance parameters** of system
based on **technical expertise**



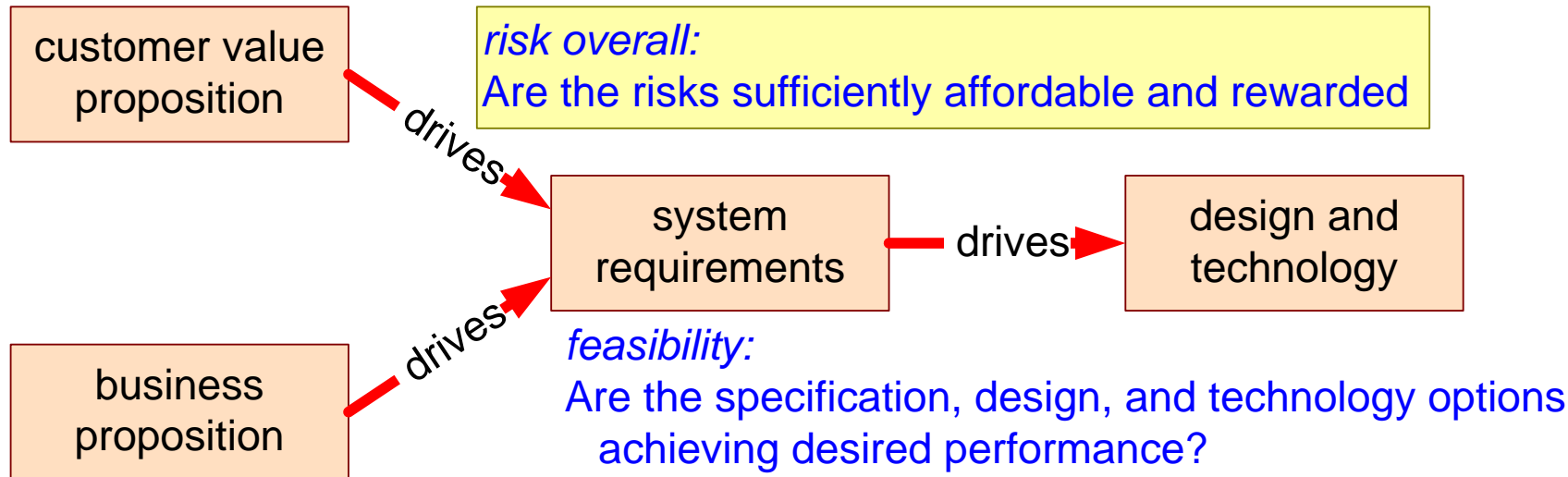
Questions to Explore the Quadruplet

desirability:

What economic value does the customer achieve by using the system?

What other value does the customer achieve by using the system?

What is the customer willing to pay for using the system (up front and recurring)?



viability:

What business model fits the customer, the life cycle supporting organization, the system, and its context?

What does the life cycle supporting organization need to function healthily for the full life cycle?

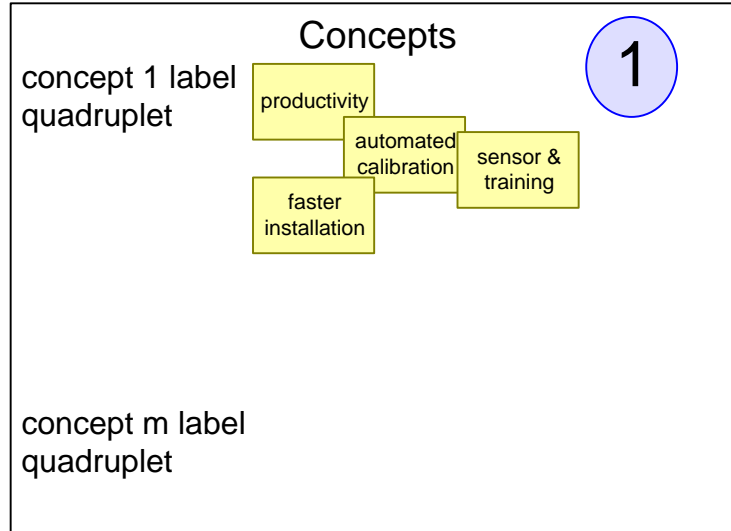
What income streams and expenses will flow before, during, and after system deployment?

Is the resulting margin sufficient for a healthy business?

Concept Selection Method

Make a decision matrix to select most promising concepts

1. create and briefly discuss the options in the form of a quadruplet
2. define 7 to 10 criteria for selection
3. score the concepts against criteria, on a scale from 1 to 5: 1 = very poor, 5 = very good, while capturing arguments
4. select the most promising concepts with a rationale



Criteria	3	concept 1 label	concept 2 label		concept m label
criterion 1 label keywords or brief sentence	3	1 purchase cost xx OPEX yy cost of ownership	3		5
criterion n label keywords or brief sentence		4	4		2
	4	because 1 ... most promising concepts			because 2 ...

Example of Concept Selection Using Quadruplets

