

The 'Quest' for Consistent Requirements (Workshop A)

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Introduction



- **Personal introduction**

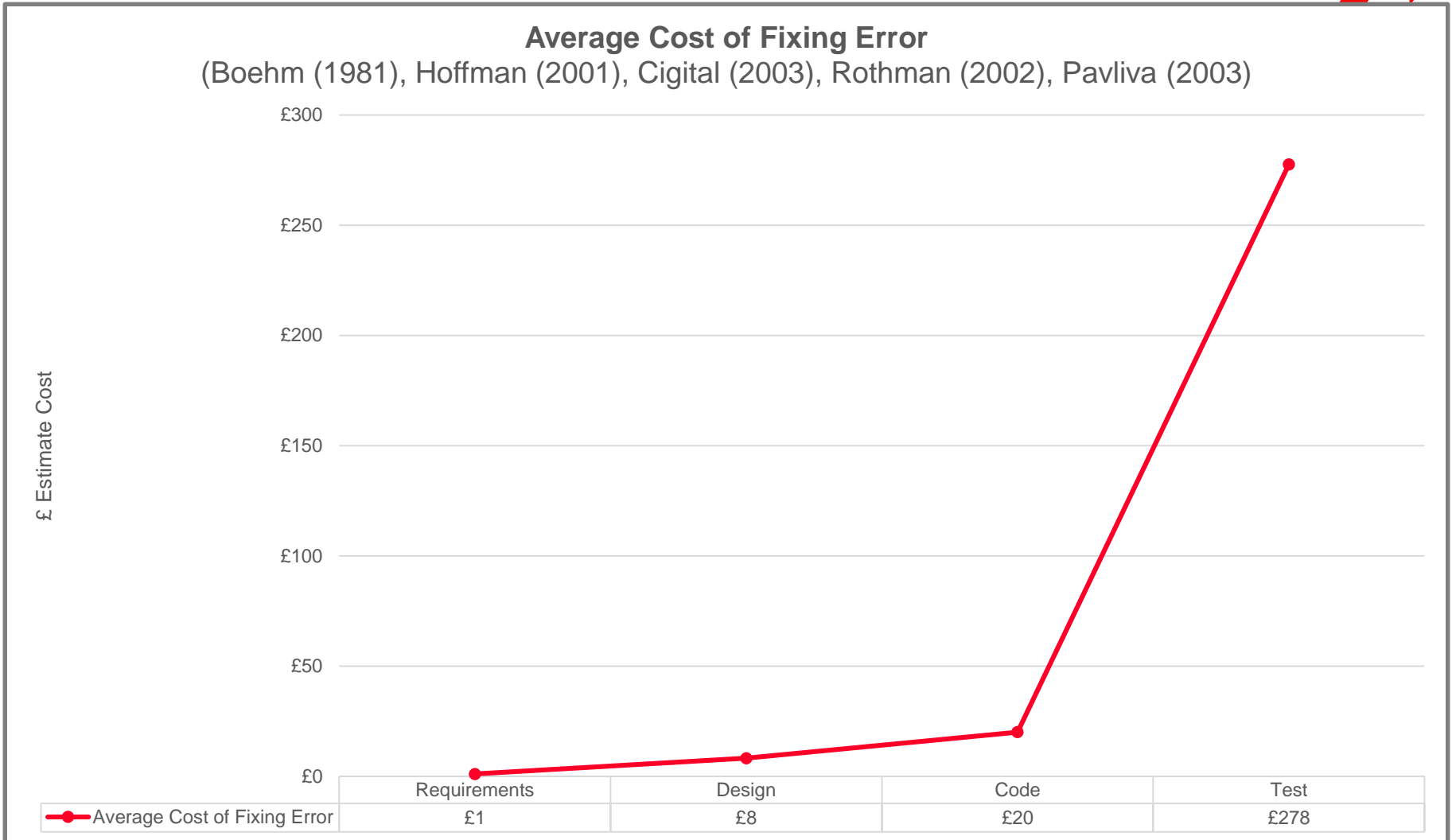


Content



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- **Why Requirements Consistency?**
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Why Requirements Consistency?



(Source: Error Cost Escalation Through the Project Life Cycle)

Why Requirements Consistency?



RESEARCH MOTIVATIONS

“40% of problems are found by end users”

“50% of new business solutions are rolled back out of production”



“\$80 to \$145 billion per year is spent on failed and cancelled projects”

“25-40% of all spending on projects is wasted”

“60-80% of project failures can be attributed directly to poor requirements gathering, analysis, and management.”

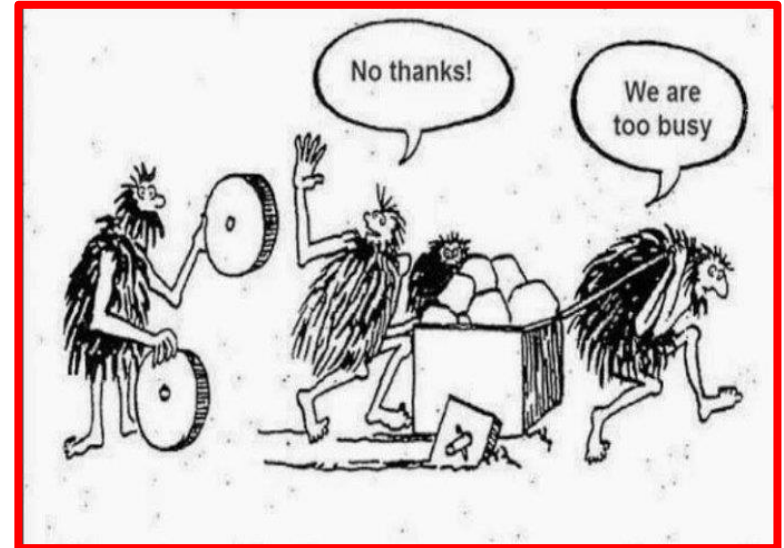
(Hass et al, 2008)

(Source: The Competent Business Analyst – J Hunsley)

Why Requirements Consistency?



- Internet of Things
- Wearables
- Artificial Intelligence
- Digital
- Virtual & Augmented Reality



“8.4 billion connected things will be in use worldwide in 2017, up 31 percent from 2016, and will reach 20.4 billion by 2020.

Total spending on endpoints and services will reach almost \$2 trillion in 2017”

(source Gartner, Inc)

Practical Group Exercise (Part 1)



- Describe the requirements for a land, air or water based vehicle
- Use flip charts & post it notes provided

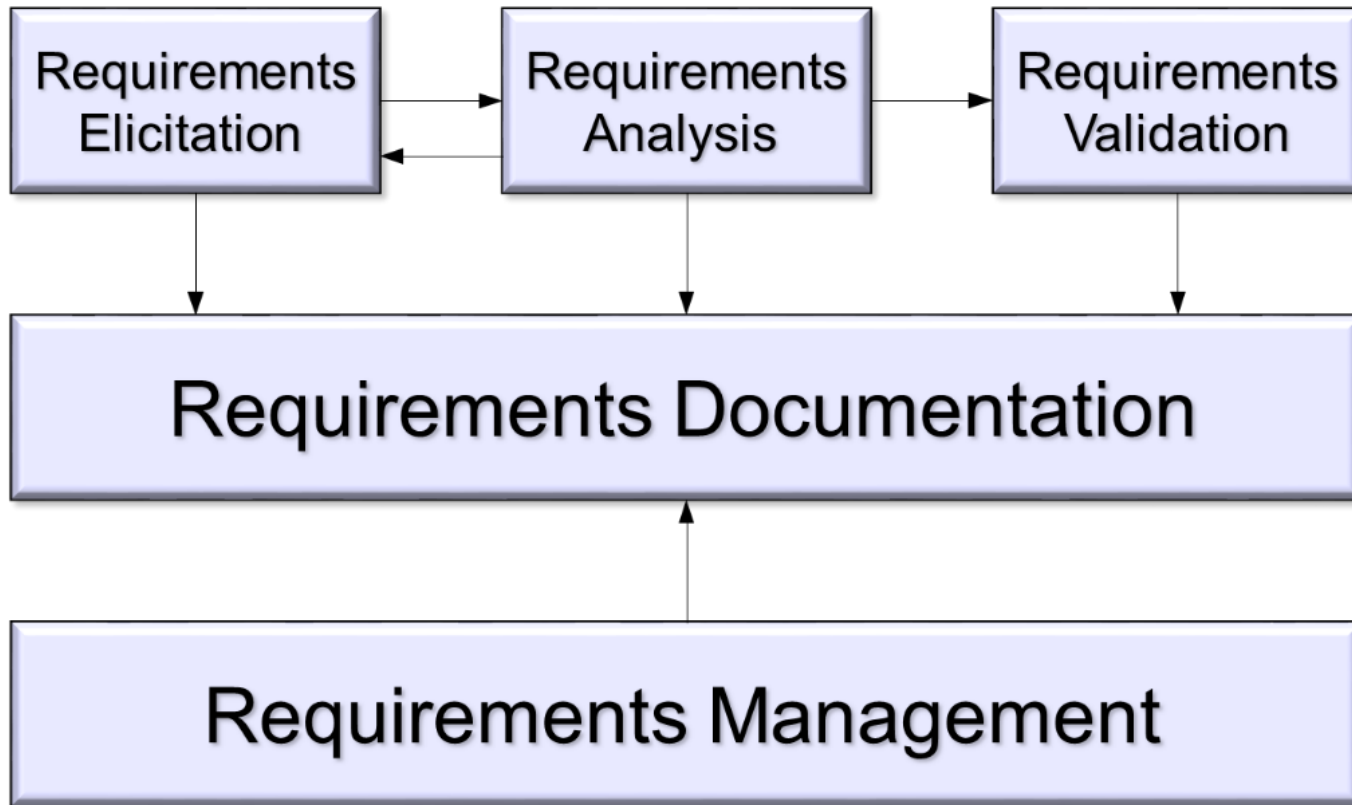
20mins

Practical Group Exercise (Part 1)



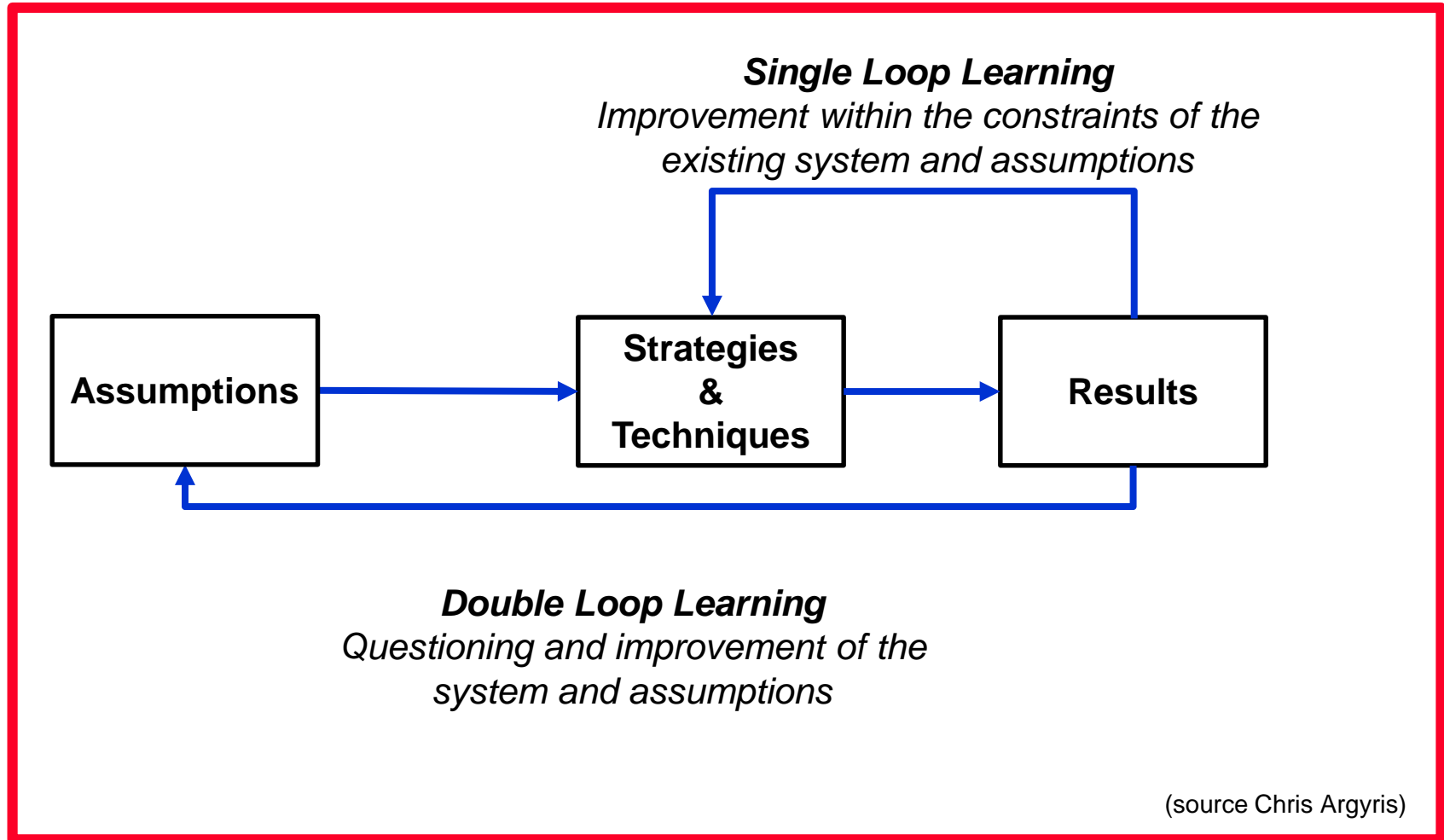
Exercise Review

Requirements Engineering

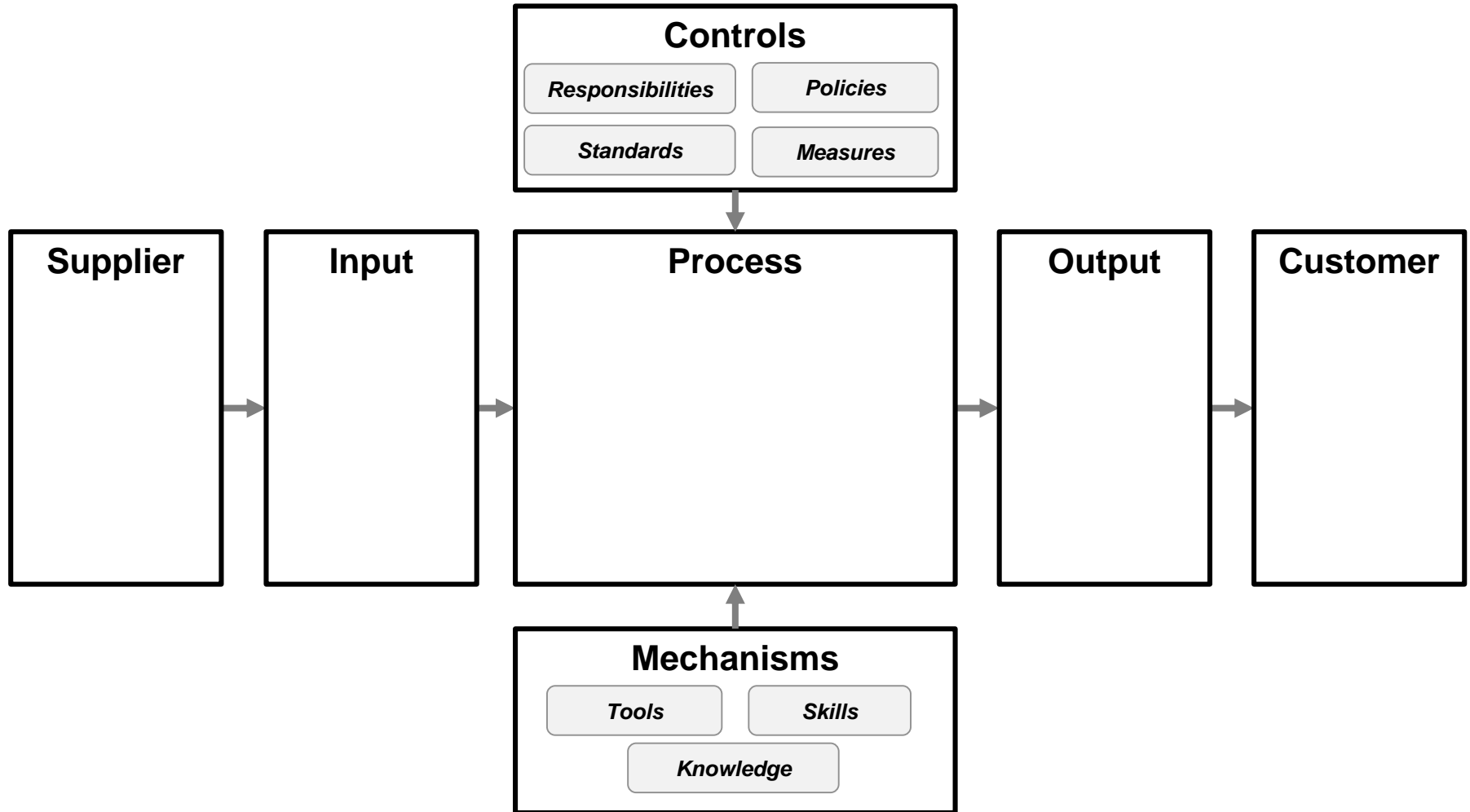


(source Paul et al)

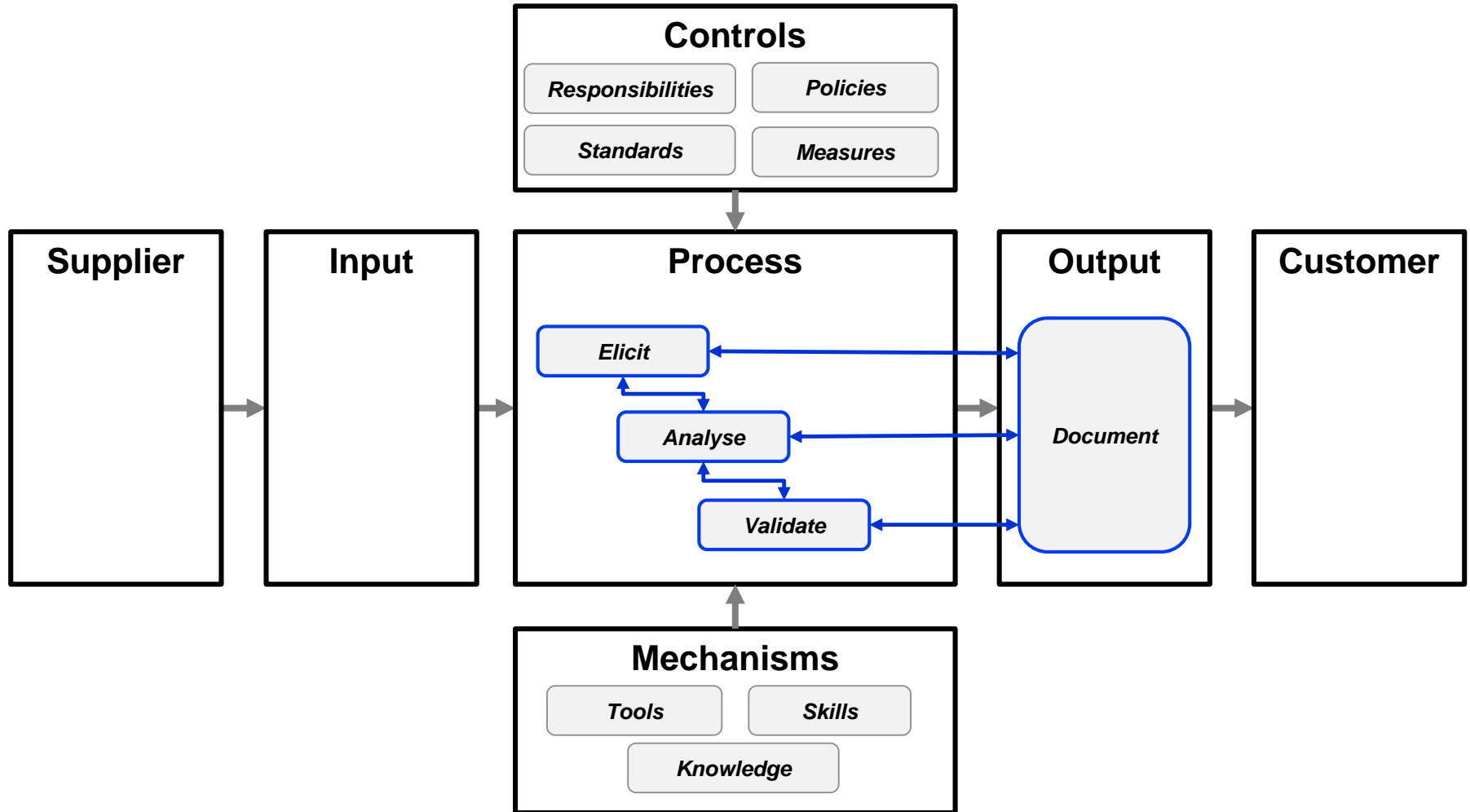
Double Learning Loop



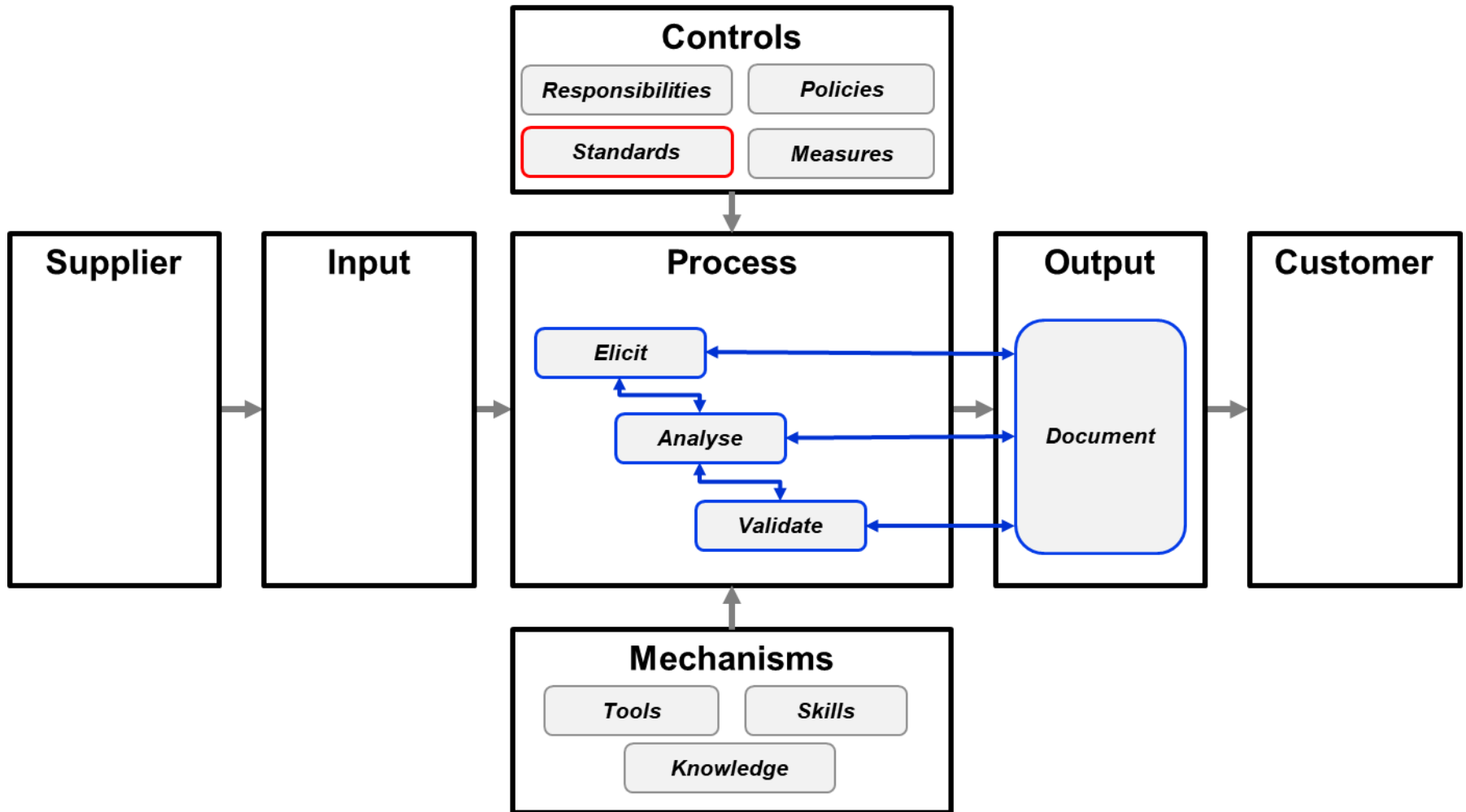
Requirements Engineering Governance Model



Requirements Engineering Governance Model






Example Standard



Example Standard



	Conceptual	Logical	Physical
<i>Oxford Dictionary</i>	Based on ideas or principles	Of or according to the rules of logic or formal argument	Relating to things perceived through the senses as opposed to the mind; tangible or concrete

Example	Light	A. Torch 	<ul style="list-style-type: none"> • Case • Battery • Bulb • Switch
		B. Candle 	<ul style="list-style-type: none"> • Wick • Wax • Base
		C. Window 	<ul style="list-style-type: none"> • Frame • Handle • Glass • Lock

Practical Group Exercise (Part 2)



1. Count the total number of requirements produced from the previous exercise

2. A) 'Categorise' the requirements using the 'Conceptual, Logical, Physical' levels (*aligned to the standard provided*)

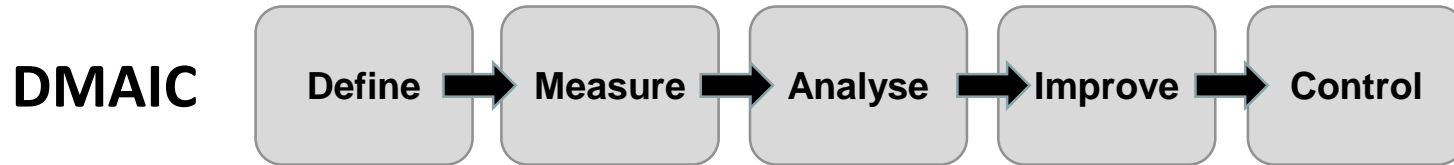
B) Count the total number of requirements which align to each category:

i. Conceptual

ii. Logical

iii. Physical

The Requirements Consistency Quest



- **Define** the requirement problem. Define desired requirement standards
- **Measure** outputs against defined standard
- **Analyse** data. Analyse causes.
- Implement **improvement** actions.
- **Control** against new standard of output.

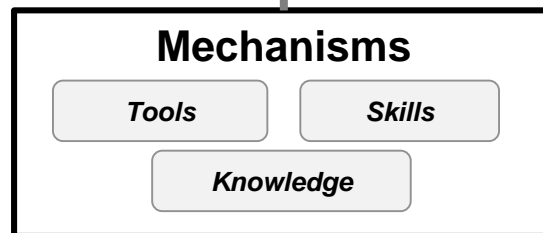
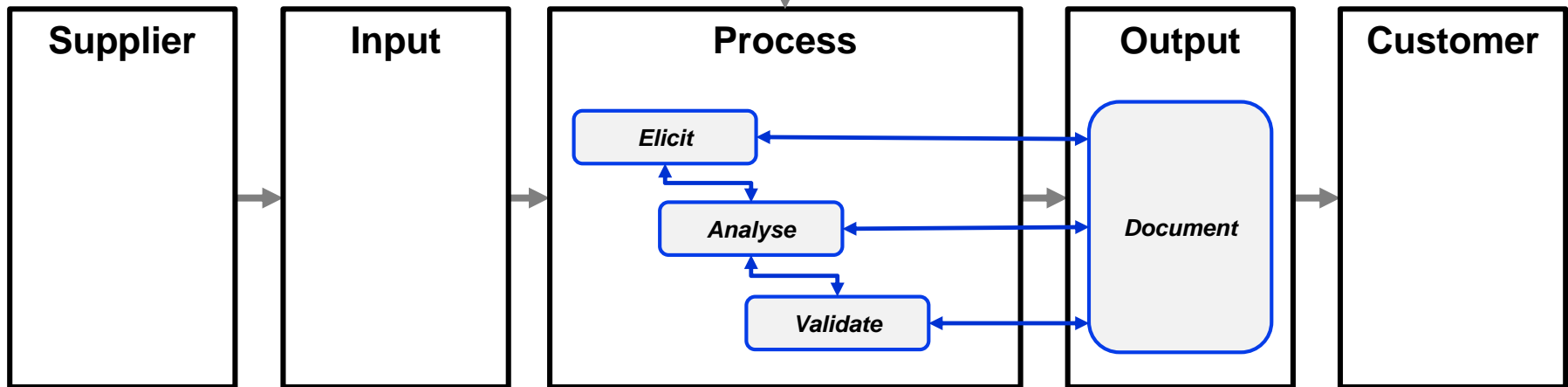
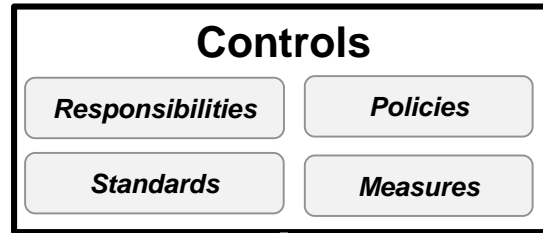
‘Improve constantly and forever the system of production and service, to improve quality and productivity’

(Deming)

The Requirements Consistency Quest



DMAIC



Reflection Exercise



- 1. What factors are constraining development of requirements consistency?**
- 2. What actions could be taken to enhance requirements consistency?**

References



Books

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- *Out Of The Crisis*, W Edwards Deming, MIT Press (1982)
- *Quality Essentials*, J B ReVelle, ASQ, (2004)
- *The Lean Toolbox*, J Bicheno and M Holweg, PISCIE Books (2016)

References



Online Resources

- *Conceptual, Logical, Physical: It is Simple*, J Zachman, <https://www.zachman.com/ea-articles-reference/58-conceptual-logical-physical-it-is-simple-by-john-a-zachman>
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