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Using HOQ Methodology to Prioritise Organisational Resilience Decisions in Training Establishments

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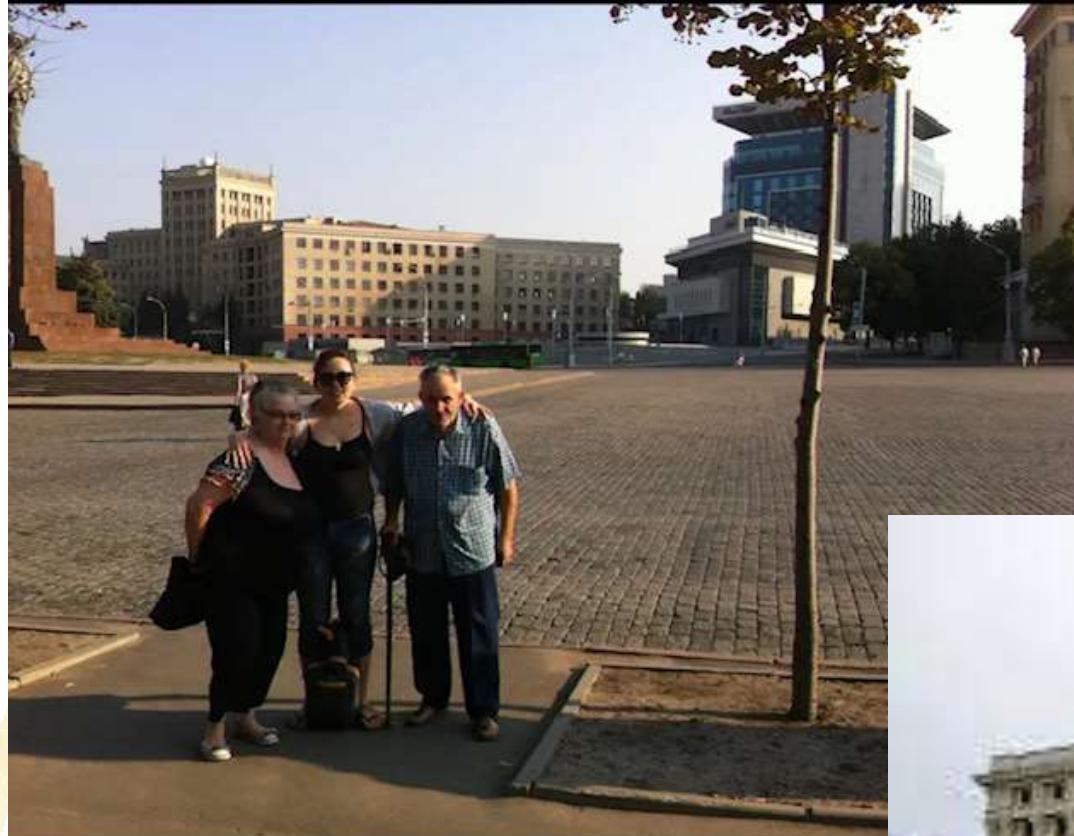
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Content

- Prelude
- Organisational Resilience
- Project's context
- Project's tools: Survey and HOQ
- Contextualising HOQ to prioritise resilience solutions
- HOQ Implementation Example

Prelude



Conceptualising Organisational Resilience

RESILIENCE ⇔ VULNERABILITY LEVEL

is a complex function of six resilience attributes:

AGILITY

ADAPTIVE CAPACITY

ADAPTABILITY

RESTORATIVE CAPACITY &
REDUNDANCY

EFFICIENCY

ROBUSTNESS

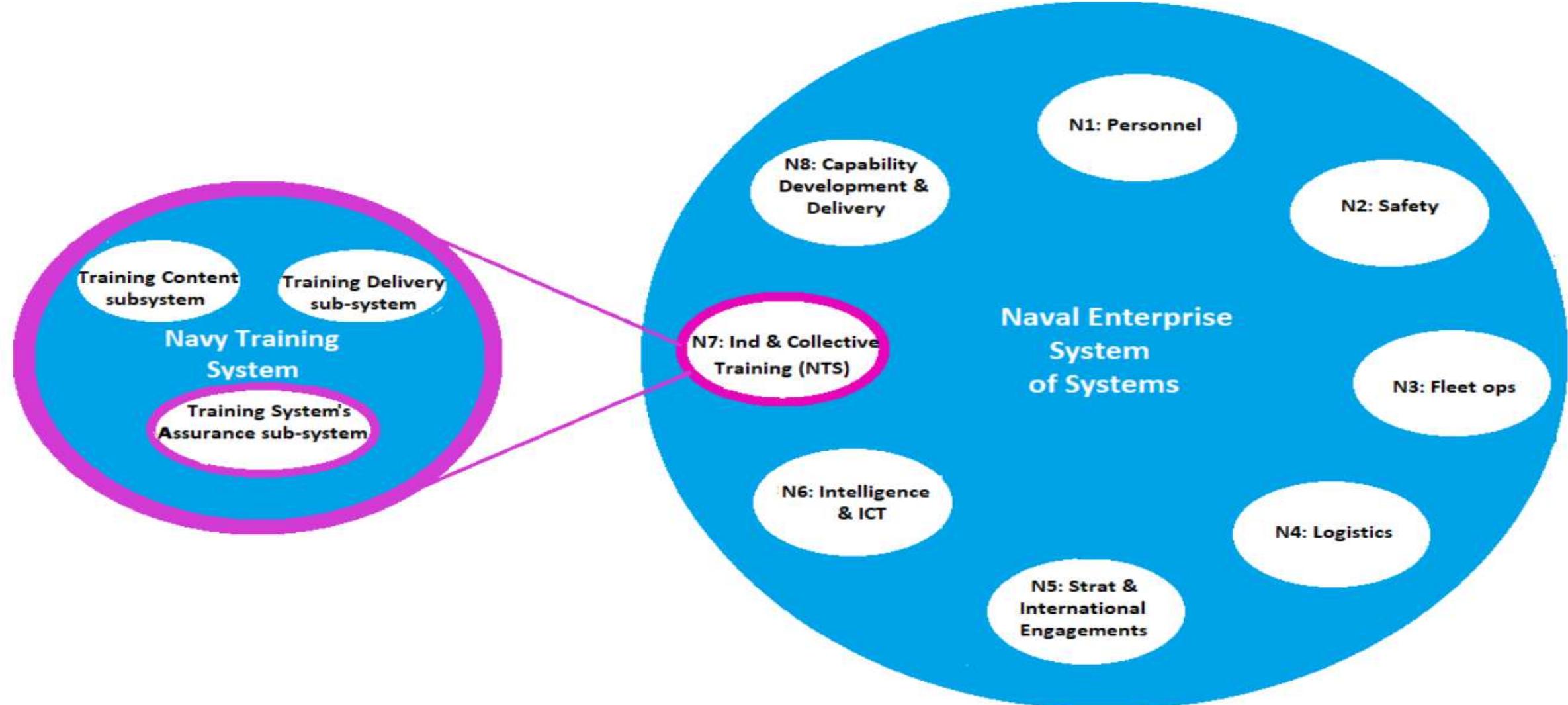
Resilience Attributes [Organisation's Abilities and Capacities]:

- **Agility**: to respond to changes and adversity easily, rapidly, and timely
- **Adaptability**: to re-establish fit in adversity
- **Efficiency**: achieve desired outcomes with minimum effort and resource consumption.
- **Adaptive capacity**: to learn and evolve to re-establish fit in new situations and environments as they arise
- **Restorative capacity**: to get back from damage or functional loss; and **Redundancy**: an extra capacity or resources kept in reserve to be used in adversity to prevent failure or support the functions of failed components
- **Robustness**: to withstand stresses and demands from adversity without suffering any damage

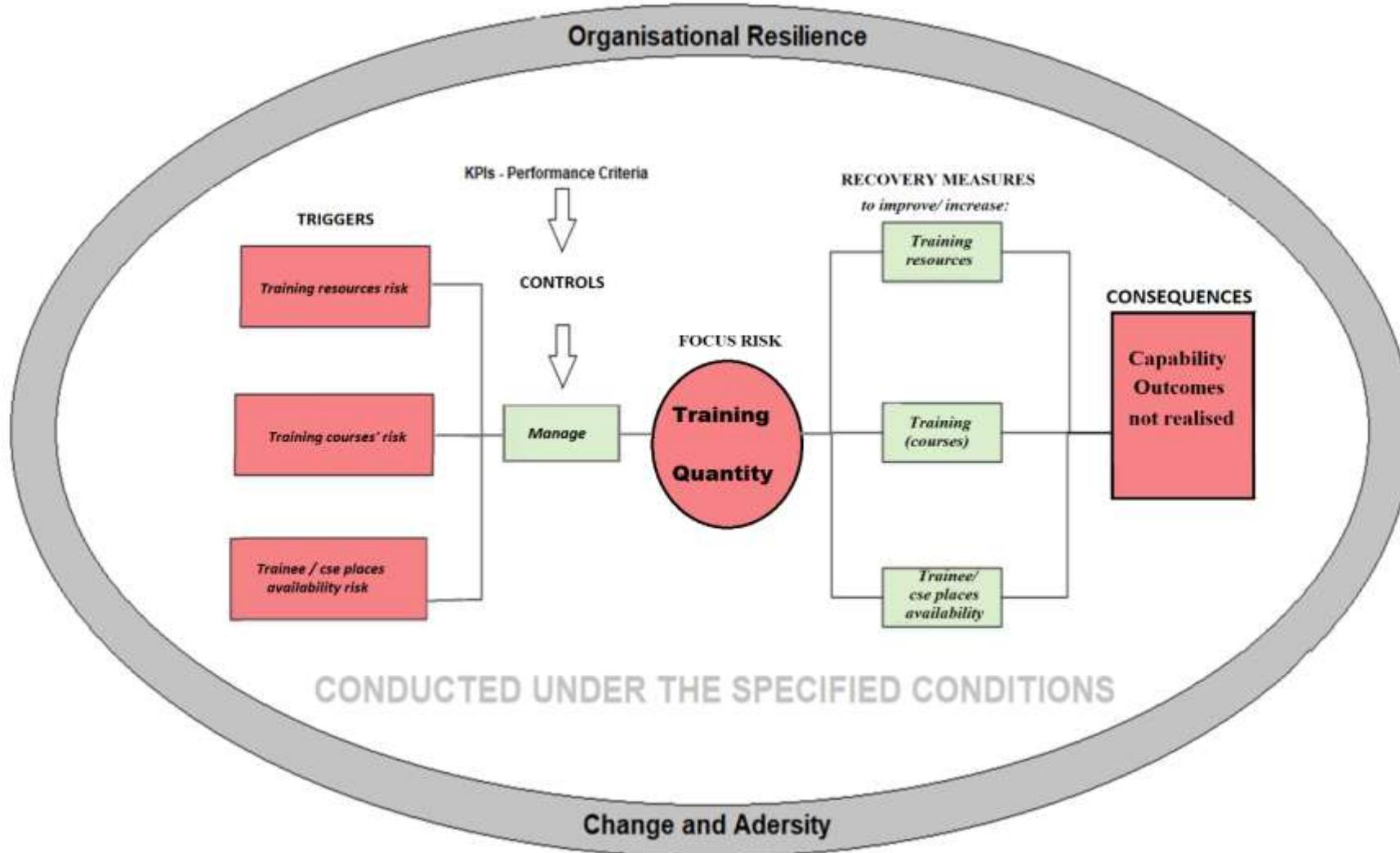
Working Definition of Organisational Resilience

Organisational resilience is a complex function of organisational adaptability, agility, efficiency, robustness, recovery & redundancy, and adaptive capacity that enables organisational ability (within organisational capacity) to sustain change and adversity and continue functioning and delivering its required outputs in uncertain and changing operational environments; which is performed by resilience mechanisms of avoidance, withstanding, recovery and evolution'.

Case Study's Context



Resilience and Organisational Performance Management (example)



Key Resilience Performance Management Challenge

Resilience manifests as a response to adverse events or changes that are uncertain and only partially predictable.

Challenge: How to Measure **Resilience Potential** of a complex and continuously evolving organisation?



Dealing with Resilience Challenge Hypothesis

Resilience Framework



Survey Instrument:

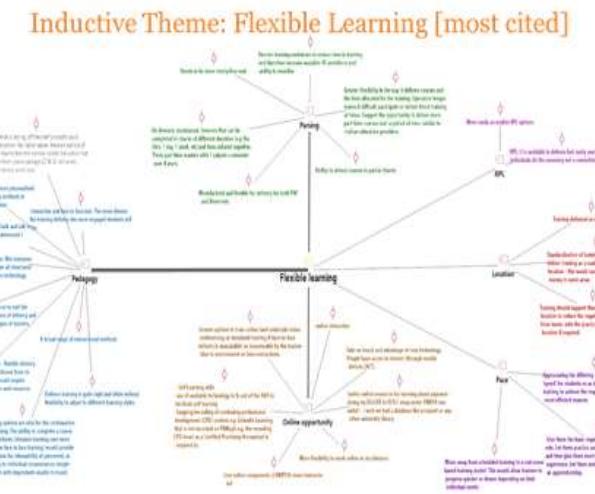
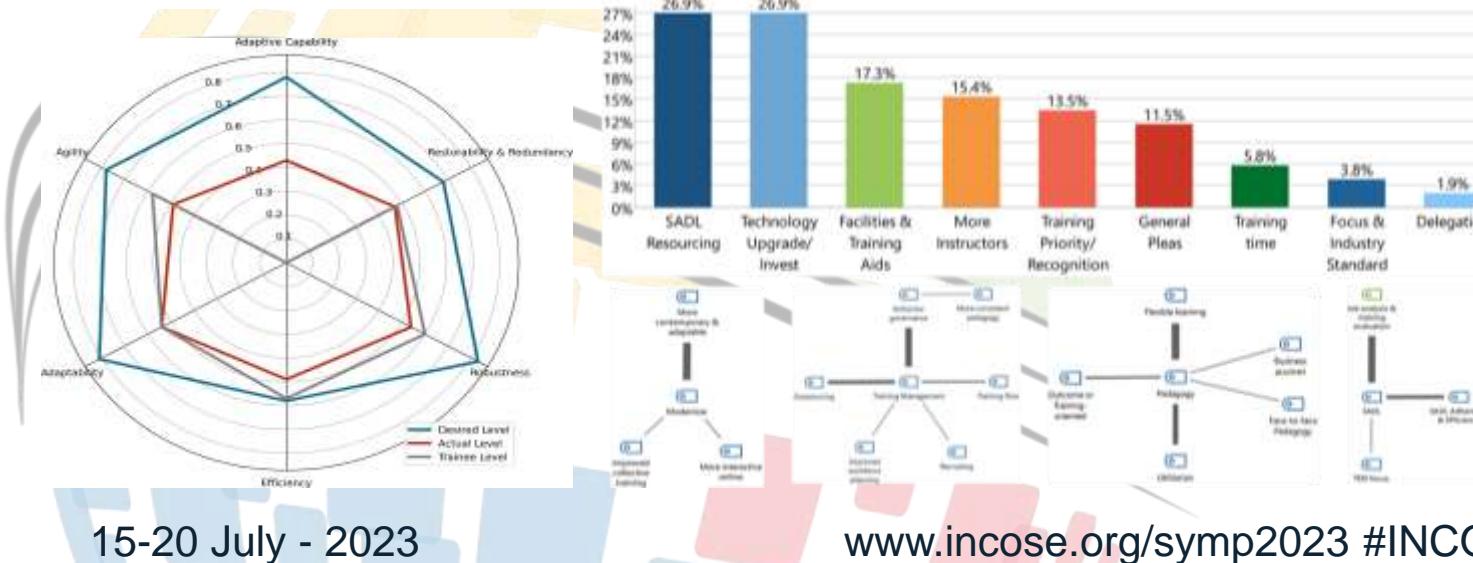
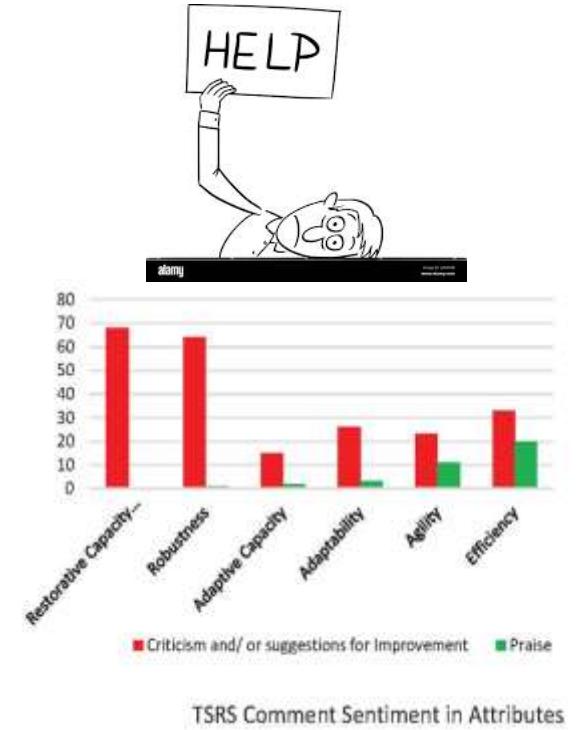
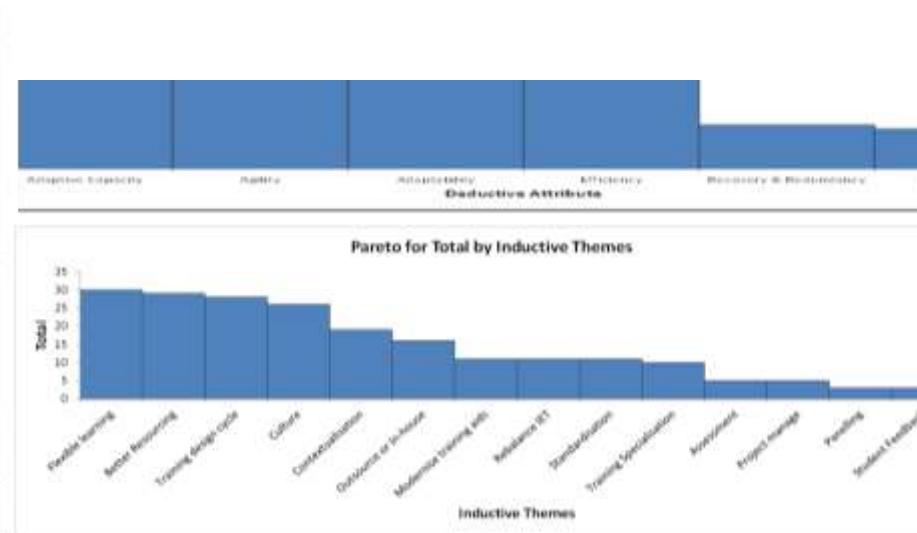
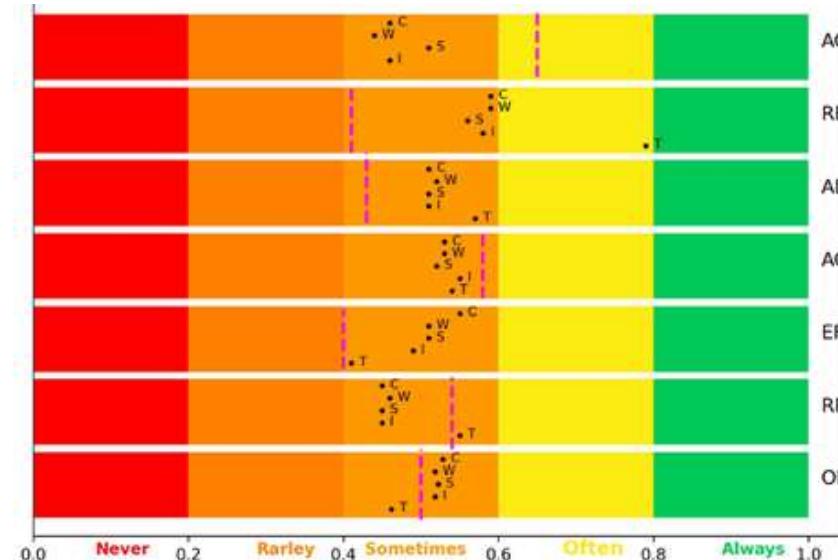
New Training System Resilience
Hypothesis

Implementation: of the recommended
TS design modifications

Road Map: from 'As Is' [Actual] to 'To
Be' [Desired] resilience

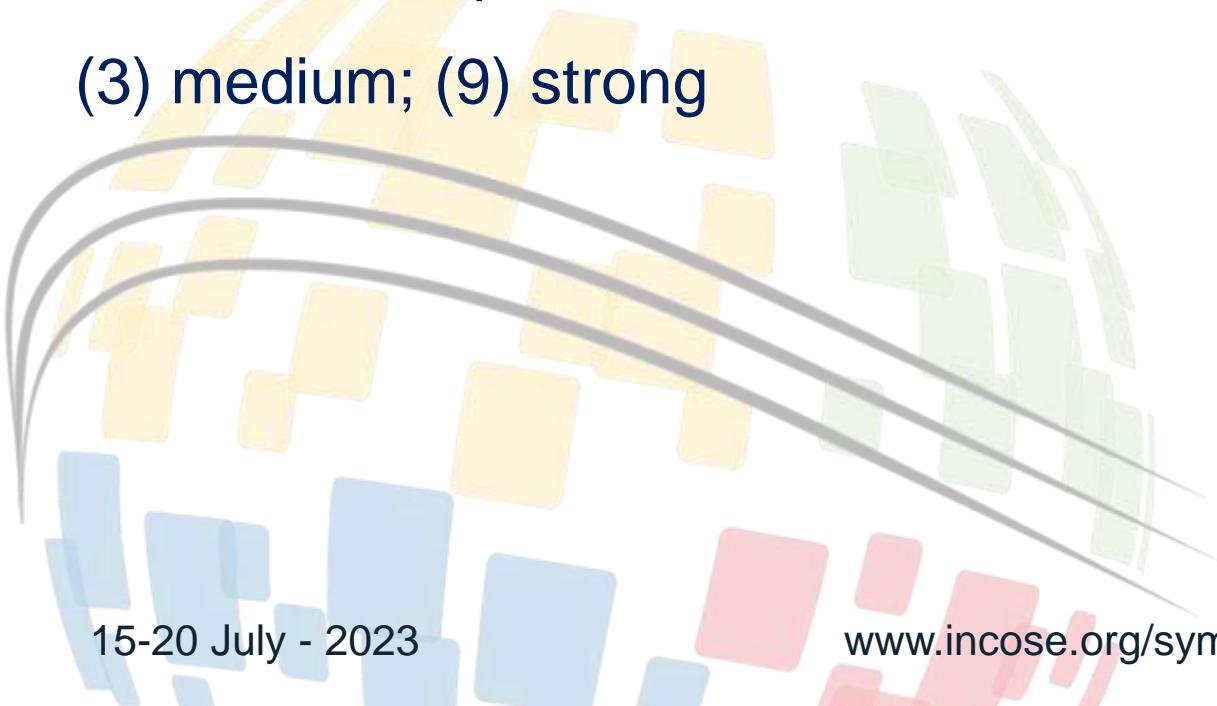
Visualisation Examples: Resilience Survey Results

Solution Prioritisation?

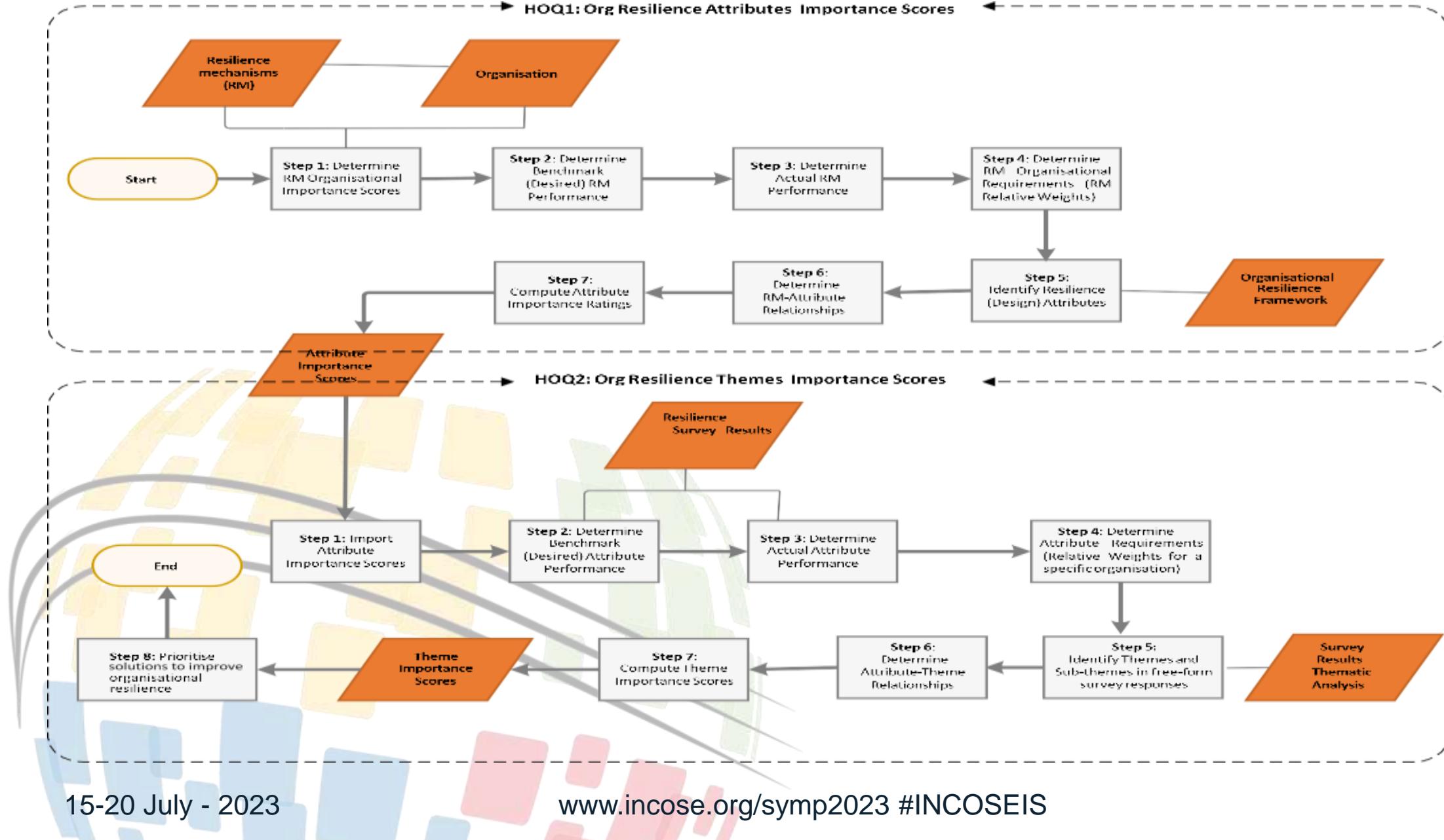


HOQ Instrument

- the HOQ tool is adopted from the SE Course at the UniSA
- it automatically calculates importance scores of proposed solutions based on the strength of their relationships with the customer needs and their associated [known] importance scores represented on a scale from 1 to 5
- the relationship level assessment scales are as follows: (0) not related; (1) weak; (3) medium; (9) strong



Using HOQ to Prioritise Resilience Solutions



HOQ1: Resilience Mechanisms VS Attributes

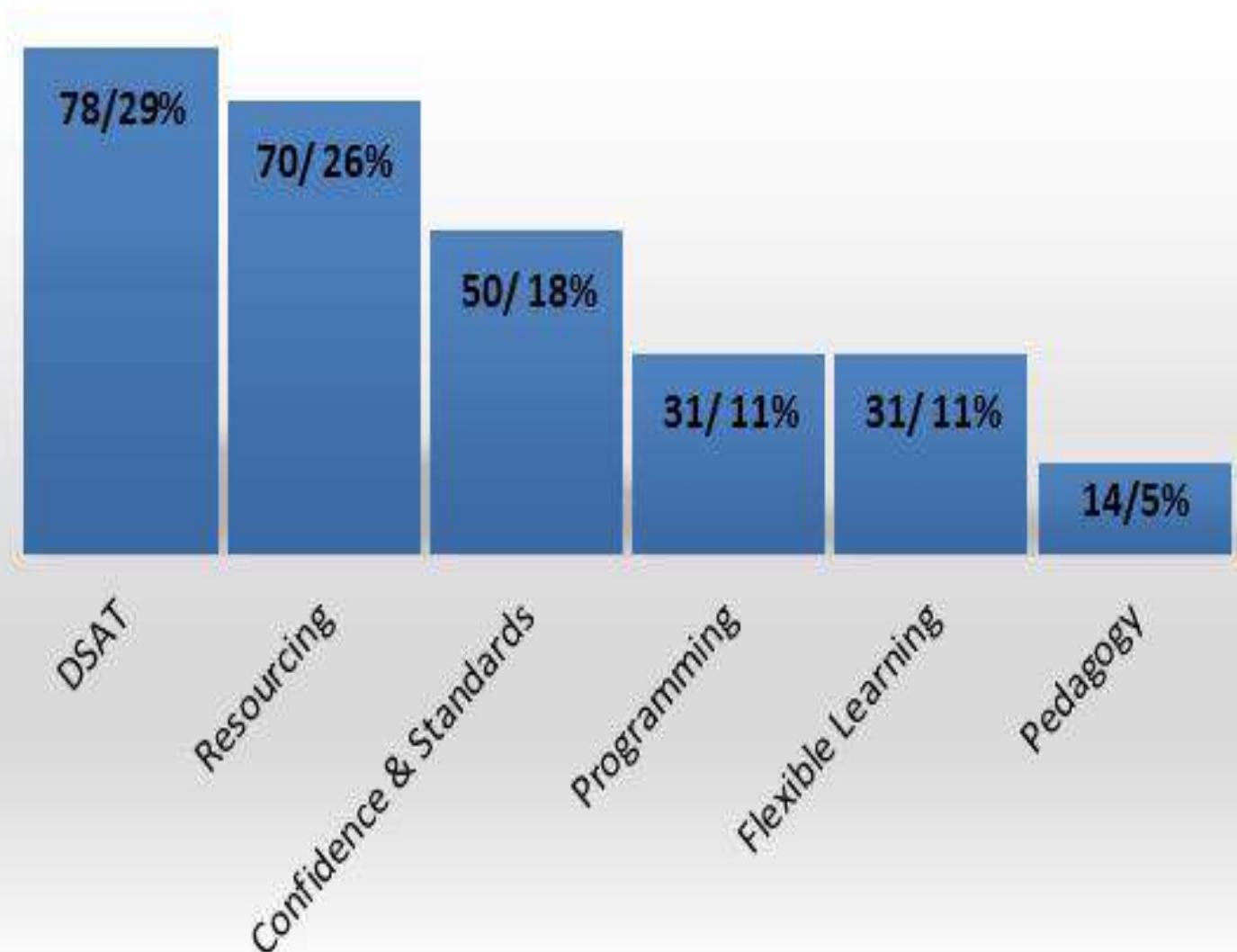
Step 1 Resilience mechanisms
 requirements & importance (1-5)
 Step 2 Benchmark performance (1-5)
 Step 3 Actual performance (1-5)
 Step 4 Relative weight (computed)
 Step 5 Resilience 'design' attributes
 Step 6 Mechanism-Attribute Matrix
 (0,1,3,9)
 Step 7 Attribute relative importance
 (computed)
 Step 8 Not applicable

Resilience attributes	1	2	3	4	5	6	Benchmark performance	Actual performance	Improvement ratio	Absolute weight	Relative weight
	Adaptability	Agility	Efficiency	Robustness	Recovery&Redundancy	Adaptive Capacity					
Customer Needs (Resilience Mechanisms)	Importance										
1 Avoidance	3	3	9	3		3	5	5	1.00	3.00	0.20
2 Withstanding	3	1	1	3	9	9	5	5	1.00	3.00	0.20
3 Recovery	4	9	3	3		9	5	5	1.00	4.00	0.27
4 Evolution	5	3	3	3		3	5	5	1.00	5.00	0.33
Technical Performance Measures										15.00	
Absolute importance	4.20	3.80	3.00	1.80	5.20	4.40	22.40				
Relative importance	0.19	0.17	0.13	0.08	0.23	0.20					

HOQ2: Resilience Attributes VS Solutions

- Step 1 Customer needs & importance
- Step 2 Benchmark performance (1-5)
- Step 3 Actual performance (1-5)
- Step 4 [column A0 computed]
- Step 5 Design attributes
- Step 6 Matrix in the middle (1,3,9)
- Step 7 HoQ done [read row 16]
- Step 8 Concept Scoring Matrix

Prioritised Solutions – Organisational Level



Theme Priority Scores:

- Resourcing – 0.3
- Confidence and Standards – 0.2
- Training Policy – 0.2
- Programming – 0.1
- Flexible Learning – 0.1
- Pedagogy – 0.1

Prioritised Solutions –Theme Level

Pedagogy Sub-Themes Priorities:

- Evolution in change & adversity – 0.6
- Contemporising technology – 0.2
- Contemporising learners – 0.1
- Contemporising training delivery – 0.1



Prioritised Solutions –Sub-Theme Level

Instructor Management Sub-Sub-Themes Priorities:

- Job Performance– 0.4
- Harnessing Competency– 0.4
- Time to prepare– 0.18
- Instructor overloading & stress– 0.02



Conclusion

- based on reputable HOQ methodology
- HOQ use for resilience solution prioritisation is underpinned by our original resilience framework and a survey instrument
- replaces subjective ‘frequency of appearance’ priorities with ‘objective ‘HOQ1-2’ methodology
- applied successfully in a large training establishment
- provides only indicative guidelines as its outcomes are influenced by a selected analysis methodology

Questions & Discussion



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