

What is a data center?

It is the place in which the organization works to provide:

- network services
- applications services
- data storage and backup service
- maintenance services for hardware
- software technical support services

And a place that:

- keeps itself safe and always available

Operations = the organization Data Center = the place

What is a Service?

- A **service** is a set of actions or solutions that are put in place or are performed to provide a **repeatable** and **consistent** set of **outcomes**, deliverables, and performance for people, organizations, and systems that represent consumers or beneficiaries of such results.

The International Foundation for Information Technology.

What is Quality Function Deployment?

FIGURE 5-9

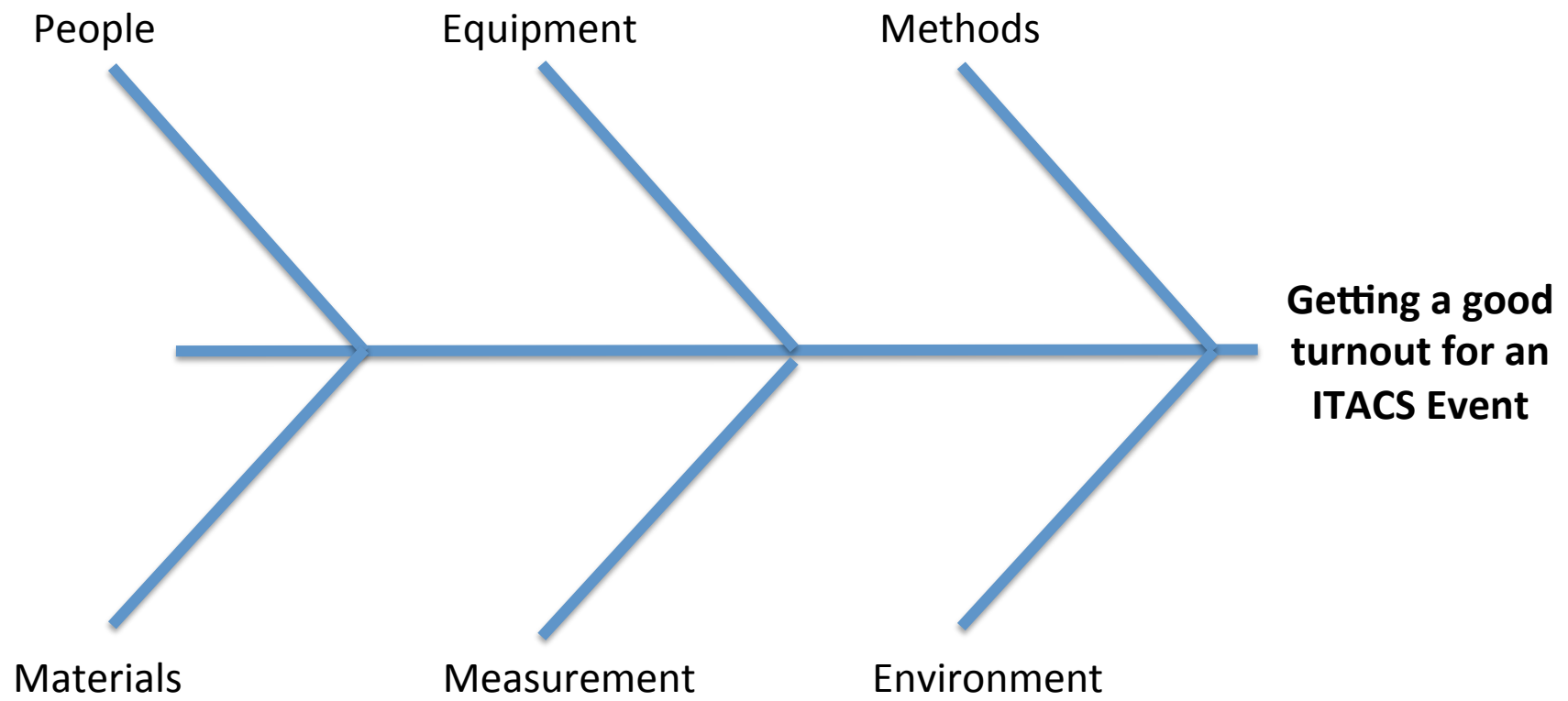
Relationship matrix

Customer Requirements	Relative Importance	Product Characteristics					Competitive Evaluation							
		No. of Zippers & Compartments	Weight of Backpack	Strength of Backpack	Grade of Dye Color	Cost of Materials	1	2	3	4	5			
Durable	25	✓	✓	⊙	✓	⊙	1	2	B	A	US			
Lightweight	20	⊙	⊙	X		✓	1	A	US/B	3	4	5		
Roomy	25	✓	X				1	2	US/A	B	3	4	5	
Looks Nice	20	✓			⊙	✓	1	US	B	A	2	3	4	5
Low Cost	10	X	X	X	X	⊙	1	US	B	A	2	3	4	5
TOTAL	100													

US = Our Backpack
 A = Competitor A
 B = Competitor B

Quality Function Deployment (QFD) is a structured approach to defining customer needs or requirements and translating them into specific plans to produce products to meet those needs. www.npd-solutions.com/qfd.html

Fishbone (Ishikawa) Diagrams



How repeatable? How consistent?

Data Center Tier	Uptime Percentage	Minutes Down Per Year
1	99.671%	1729
2	99.741%	1361
3	99.982%	94
4	99.995%	26

Six Sigma: “ 99.99966% of all opportunities to produce” an outcome “are statistically expected to be free of defects” (Wikipedia)

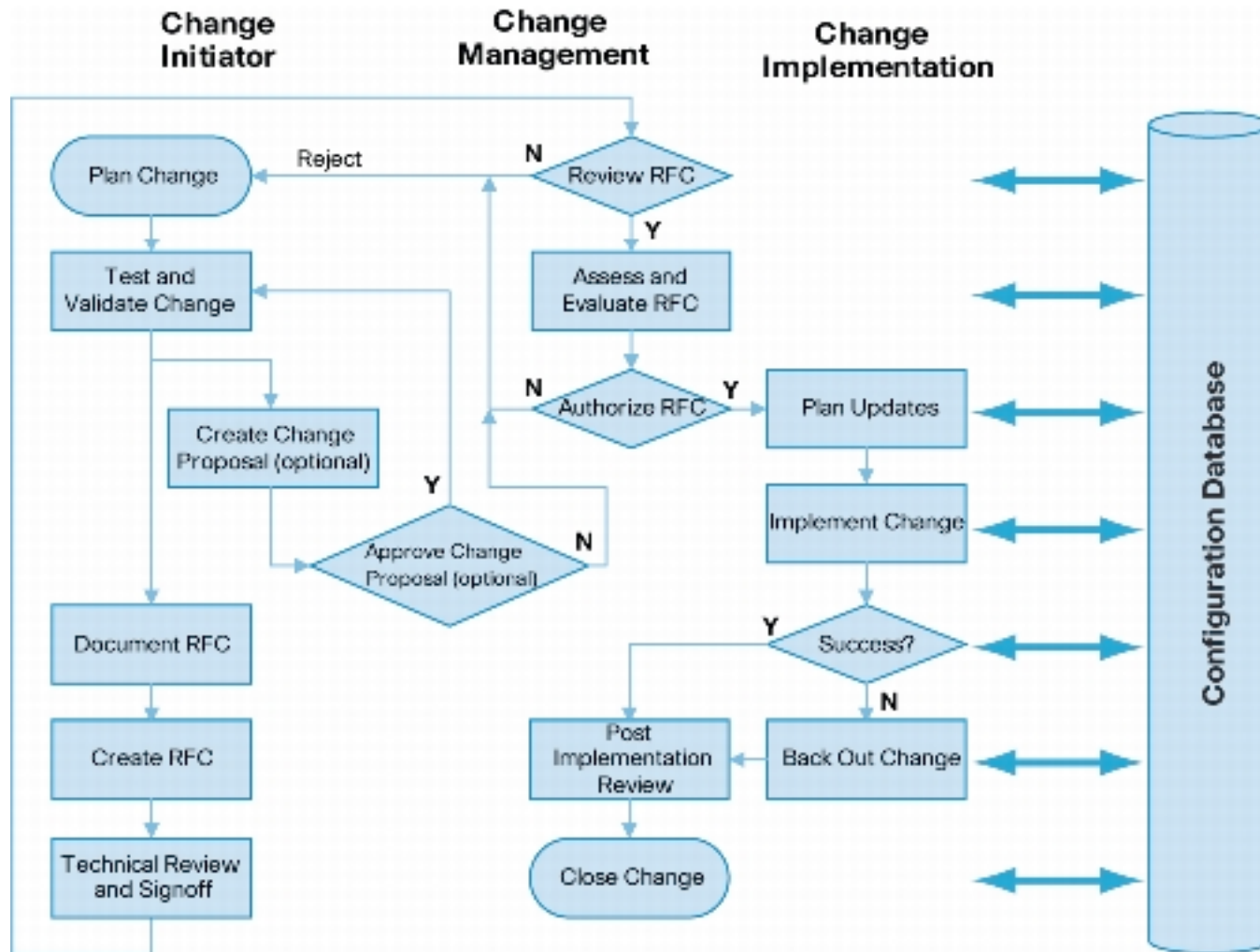
Managing Quality in IT

- IT is all about providing **services**
- Quality of an IT service is determined by the extent to which it consistently meets **desired outcomes**
- Non-desired outcomes are service **defects**
- QMS means an organizational spirit of **continuous improvement**
- Making improvements to prevent service defects means establishing **controls** on the process
- Therefore a strong control environment is highly analogous to having a strong **QMS**

Basic Data Center Controls

- Design and infrastructure controls
- Physical access controls
- Hardware management controls
- Contingency planning and disaster recovery
- Monitoring
- Performance management

Change Management



Software Testing

