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Are We Receiving Value From Our Investment in IT Risk Management?

(1st ISACA Athens Conference)

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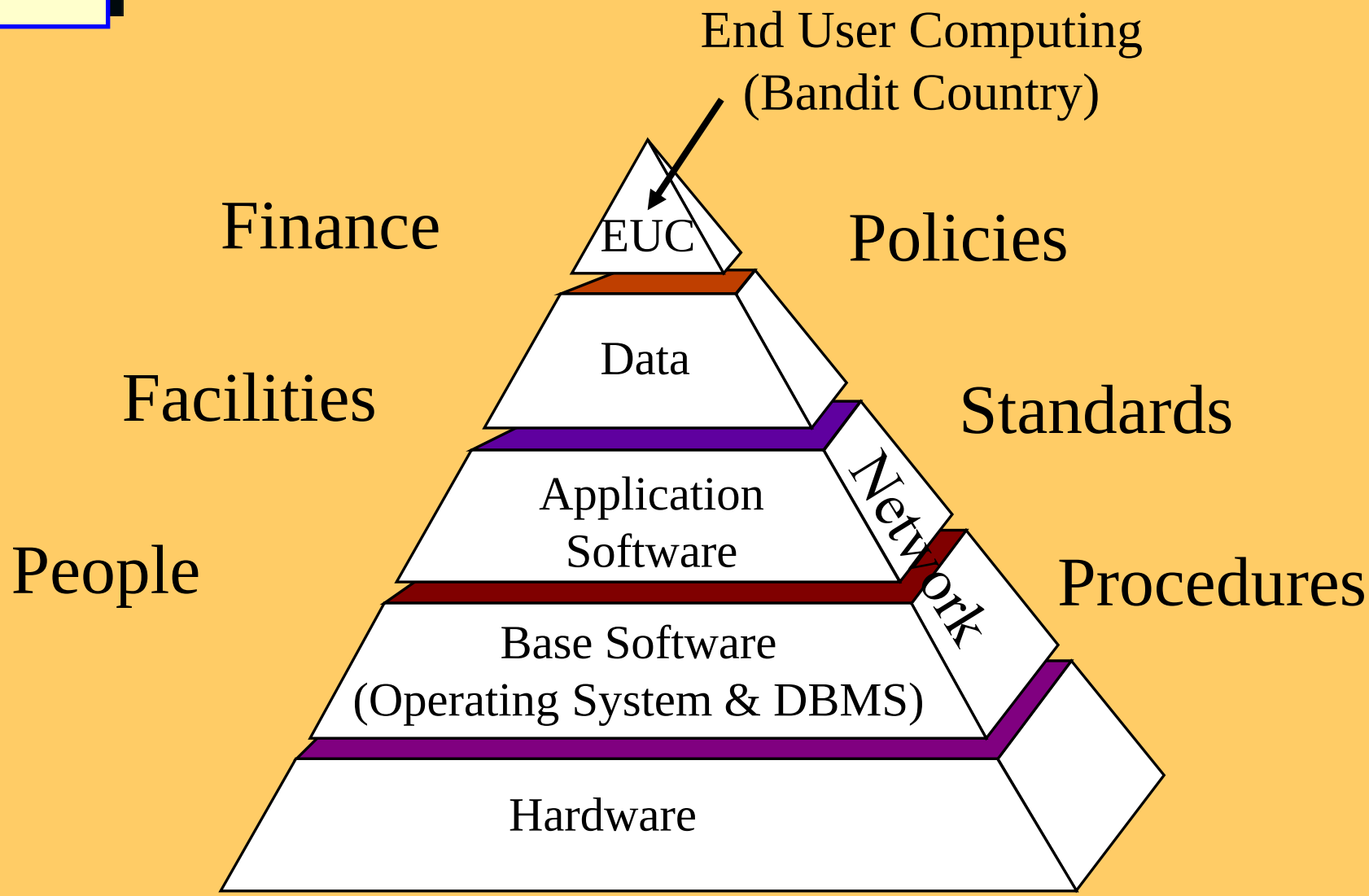
Simple IT Infrastructure



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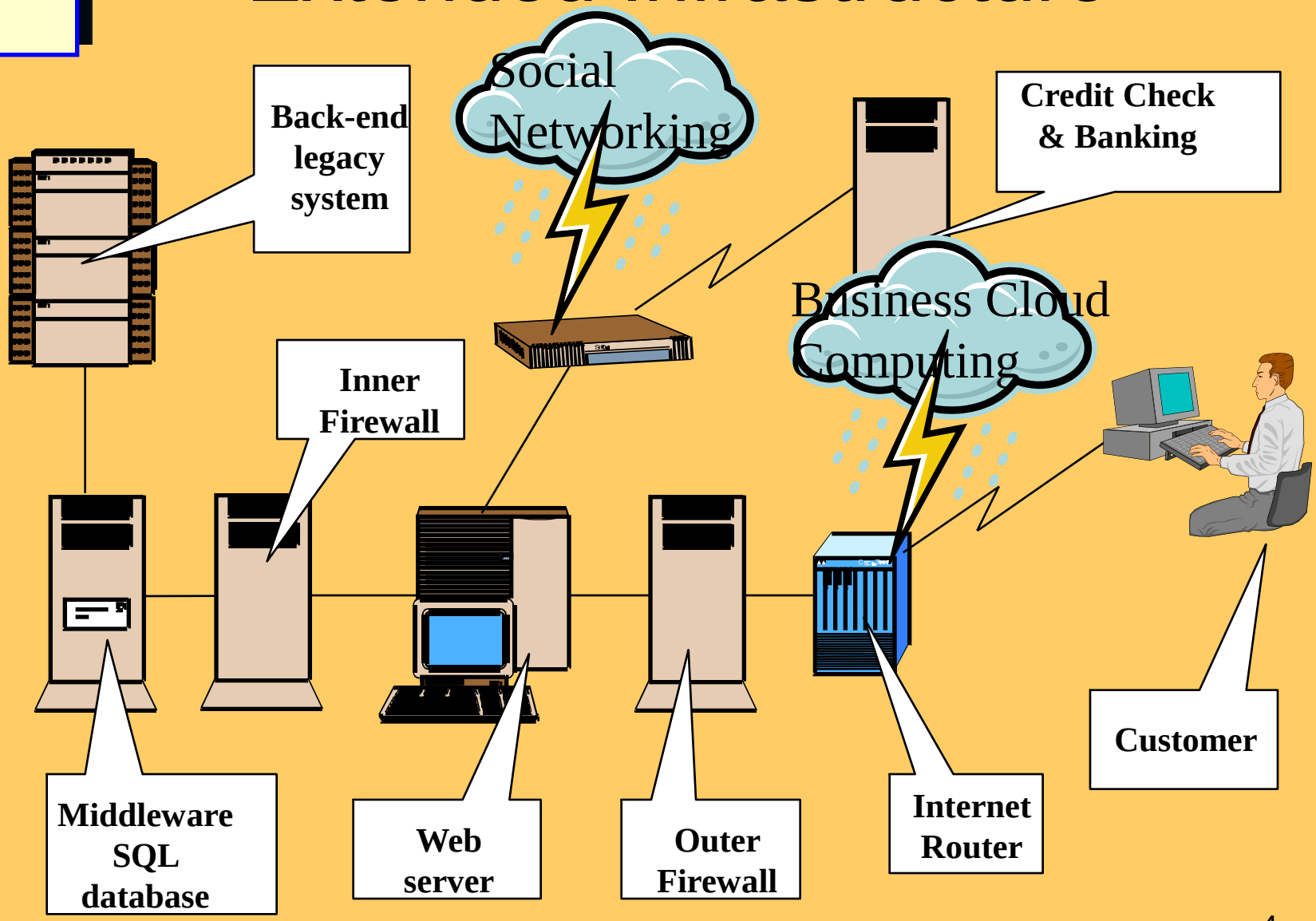
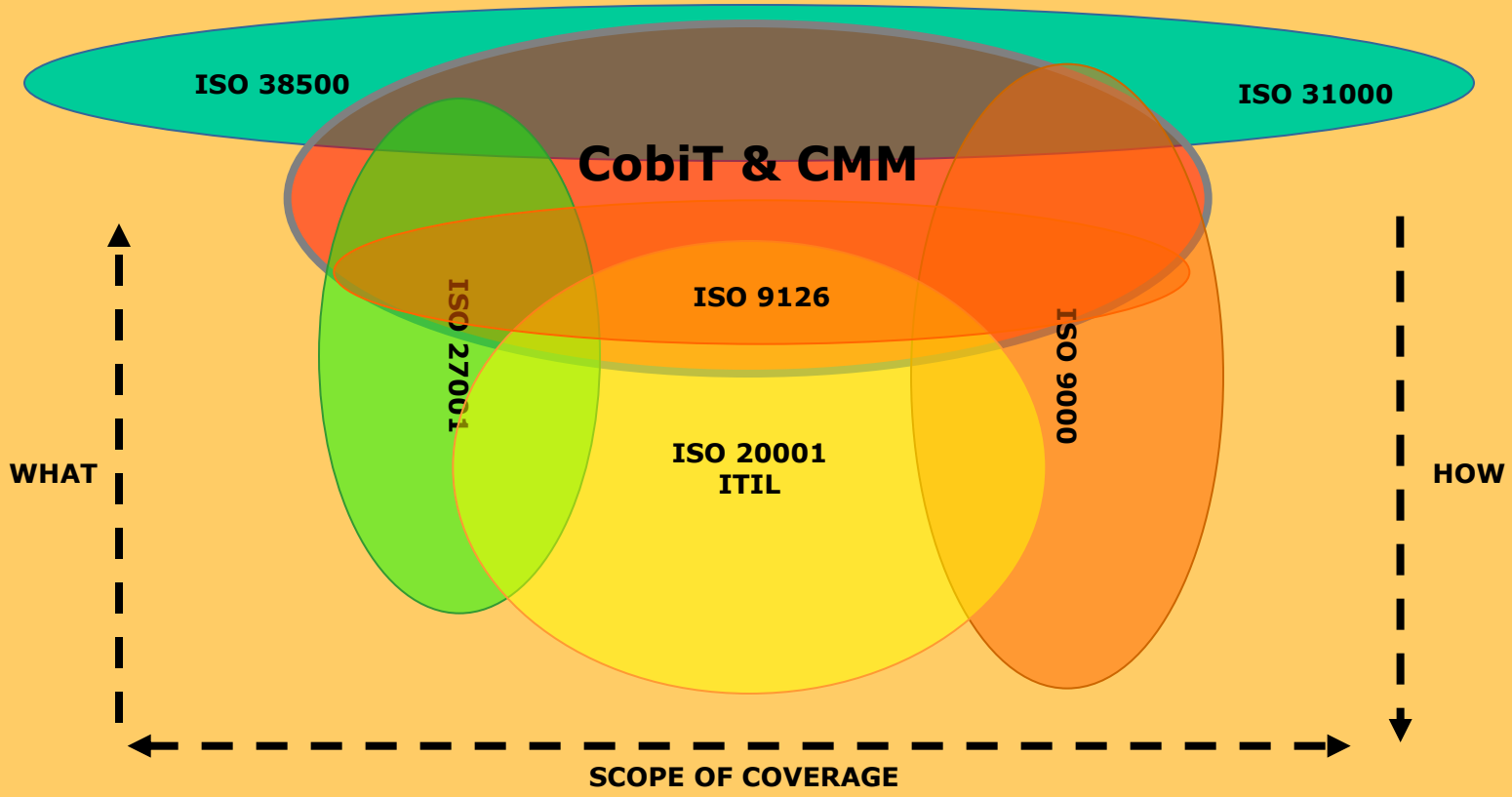
Extended Infrastructure



IT Assurance Frameworks



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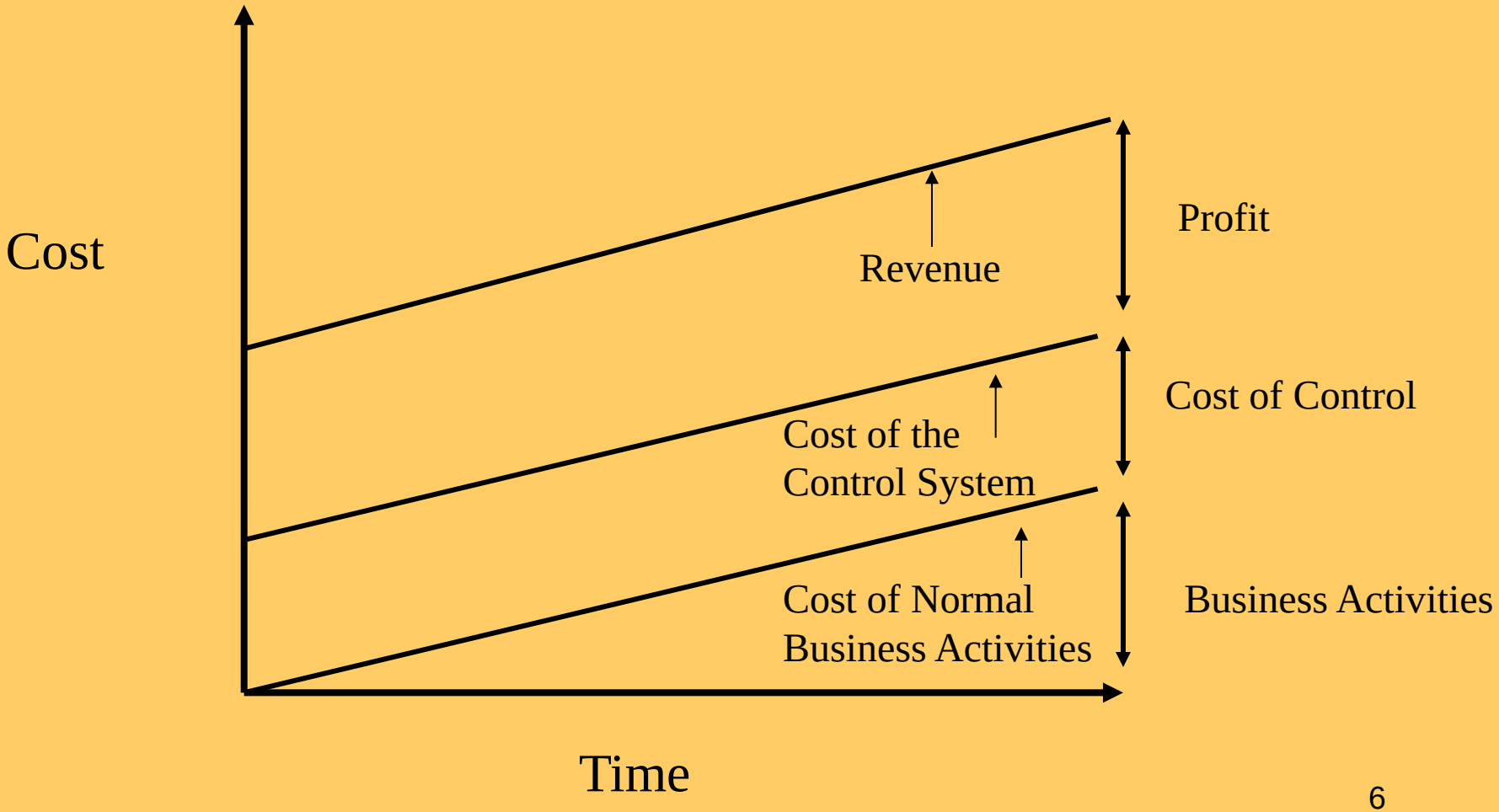
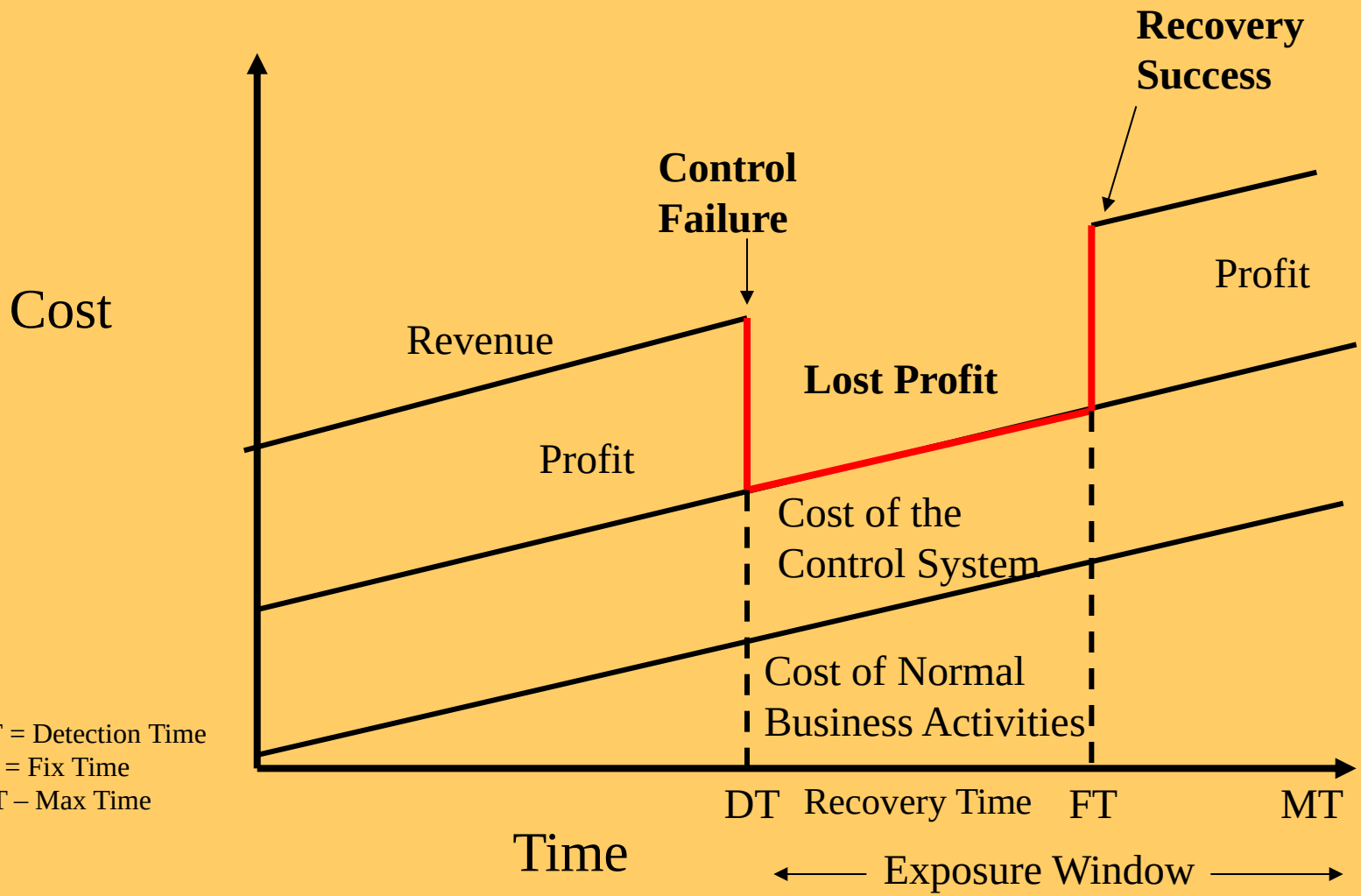
Impact of Control on Profit (Normal Operation)

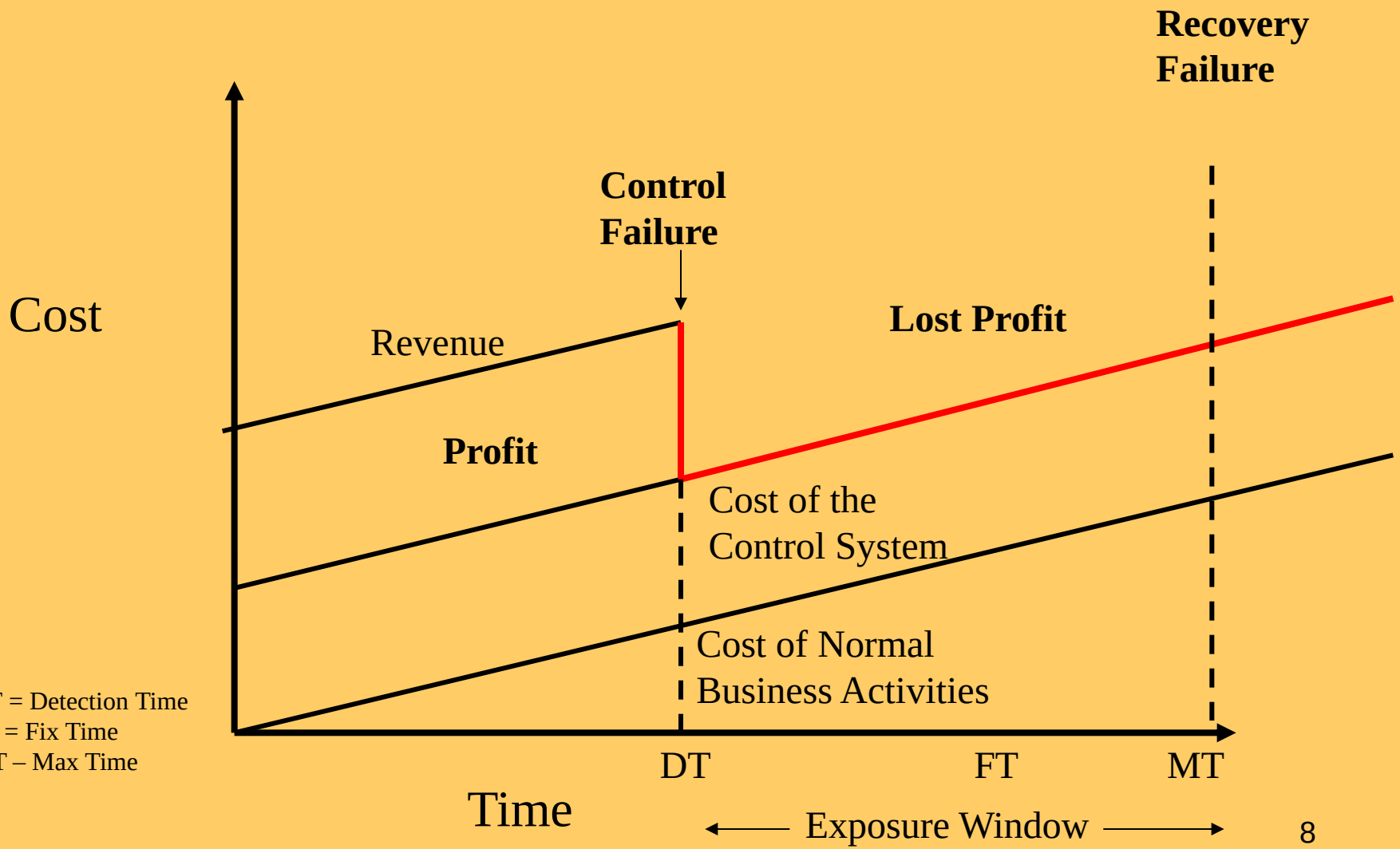


Impact of Control Failure on Profit (With Recovery)



DT = Detection Time
FT = Fix Time
MT – Max Time

Impact of Control Failure on Profit (Without Recovery)



DT = Detection Time
FT = Fix Time
MT – Max Time

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Control Classification

Class	Ability to detect the event and take recovery action	Type
1	Prevents the event, or detects it as it happens and prevents further impact	Preventive
2	Detects the event and reacts fast enough to fix it well within the specified time window	Detective
3	Detects the event and reacts just fast enough to fix it within the specified time window	
4	Detects the event but cannot react fast enough to fix it within the specified time window	
5	Fails to detect the event but has a partially deployed business continuity plan	Reactive
6	Fails to detect the event but does have a business continuity plan	
7	Fails to detect the event and does not have a business continuity plan	

Source: D Brewer & W List

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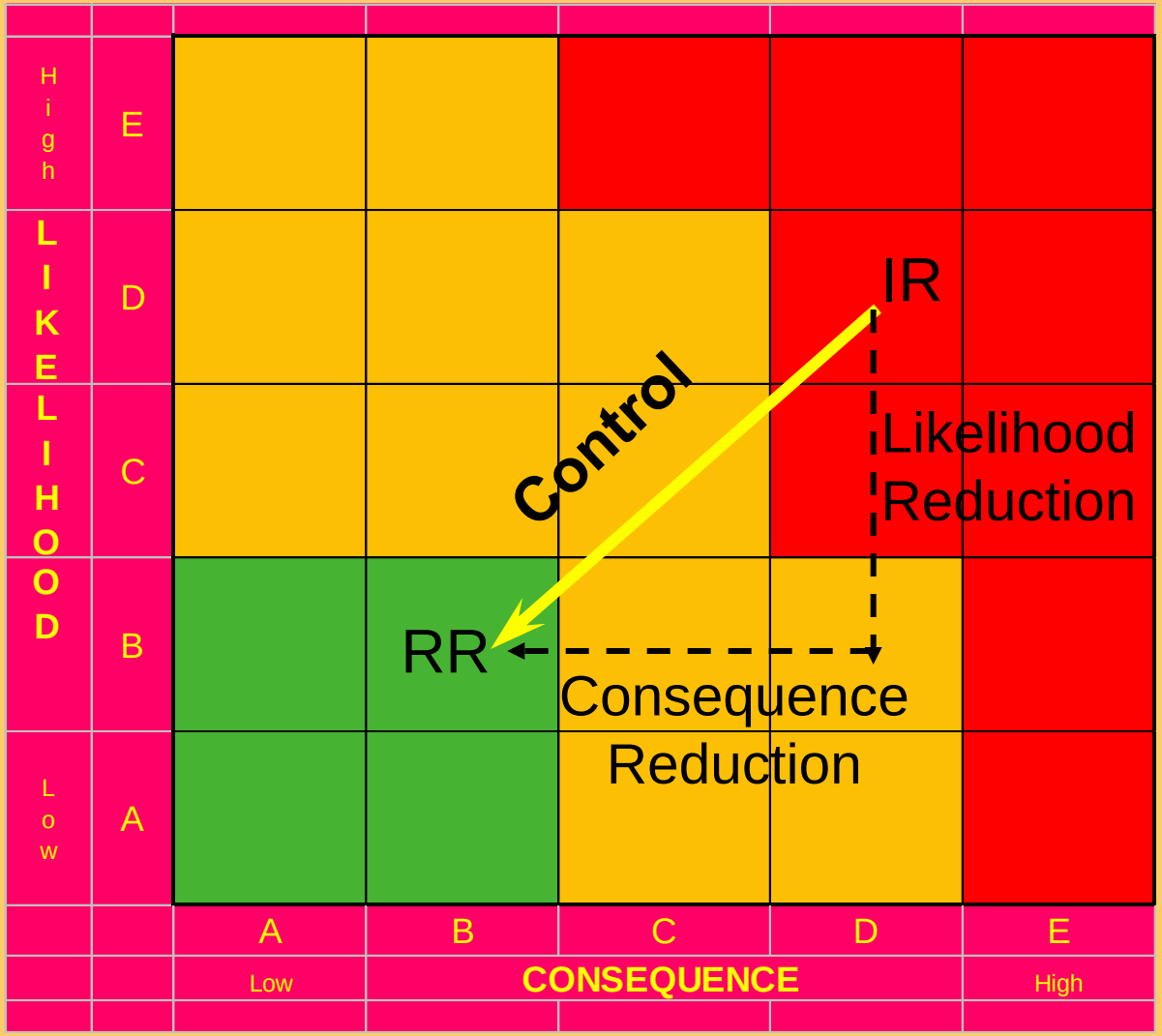
Risk & Control

- Senior Management Attention
- Local Management Attention
- No Action



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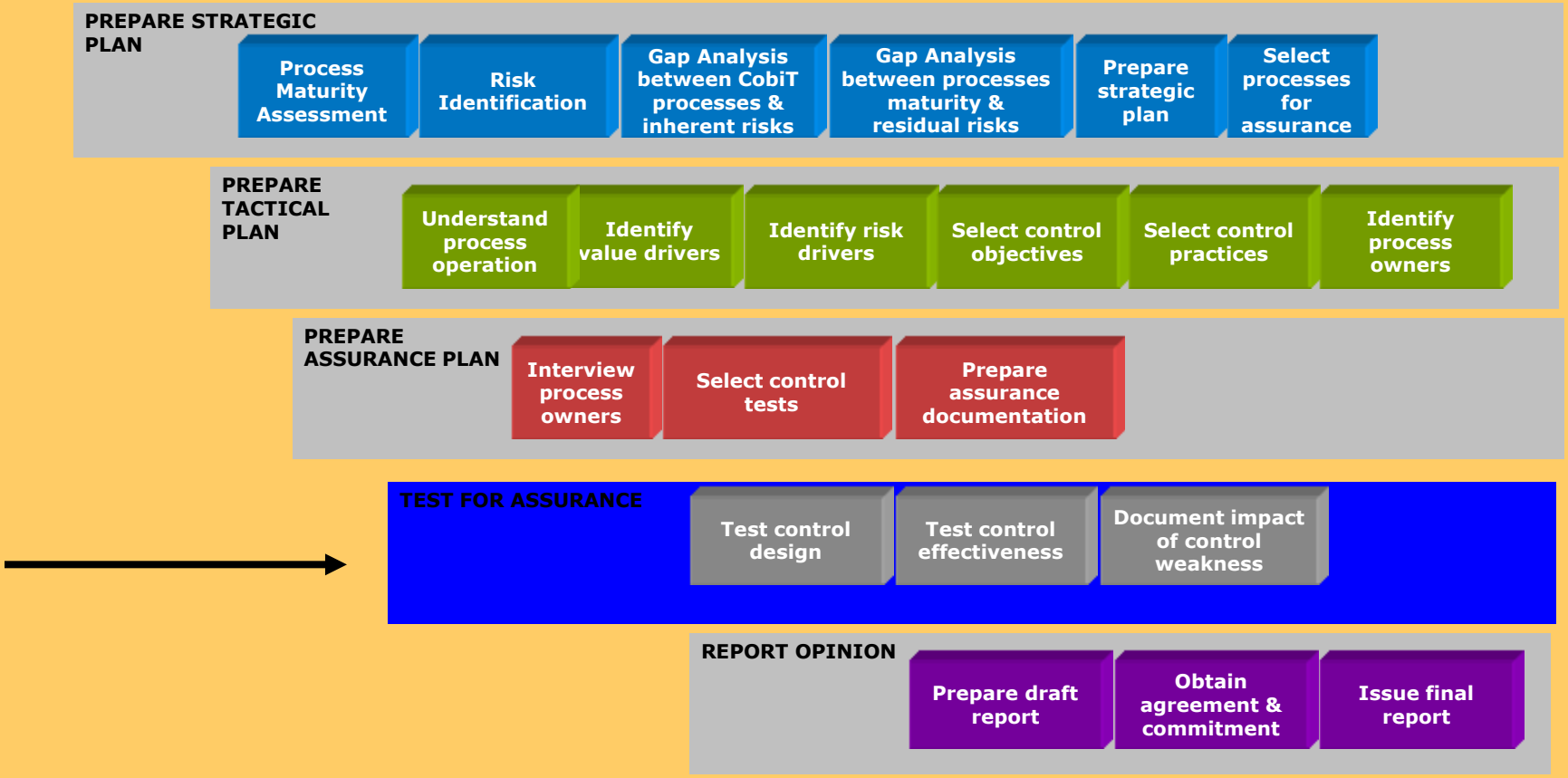
IT Assurance Roadmap



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What Is This Control Stuff?

- Definition
  - Anything which monitors or modifies the behaviour of a process so as to make the process predictable
- How Does It Work?
  - A control is simply a test against a known answer

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Effective Risk Management is a journey

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Which One Would You Audit?

Inherent Risk	Controls	Residual Risk
Risk 1	None	High
Risk 2	Some	Medium
Risk 3	Lots	Low

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Anatomy of a Control

- Design
- Implementation
- Monitoring
- Evaluation

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Design

- How well the control should work, in theory, if it is always applied in the way intended:

3) – designed to reduce a risk aspect entirely (either likelihood or consequence)

2) – designed to reduce most of a risk aspect

1) – designed to reduce some parts of a risk aspect

0) – very limited or badly designed, even where used correctly provides little or no protection

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Implementation

- The way in which the control operates in practice:

  3) – the control is always applied as intended

  2) – the control is generally operational, but on occasions is not applied as intended

  1) – the control is sometimes correctly applied

  0) – the control is not applied, or is applied incorrectly

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Monitoring

- How we know that the the control is continuing to operate (embedded monitor):

  3) – operation is always monitored

  2) – operation is usually monitored, but on occasions is not

  1) – operation is monitored on an ad-hoc basis

  0) – operation is not monitored at all

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Evaluation

- How frequently the control effectiveness is evaluated:

  3) – control is regularly evaluated for effectiveness

  2) – control is occasionally evaluated for effectiveness

  1) – control is evaluated on an ad-hoc basis (usually when something goes wrong)

  0) – control is never evaluated

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Scoring Control Effectiveness (Simple Model)

- Design = 3 (3)
- Implementation = 3 (3)
- Monitoring = 2 (3)
- Evaluation = 1 (3)

TOTAL SCORE = 9 (12) = 75%

or 75% total effectiveness

$$\sum_{\forall i} x_i = 0$$

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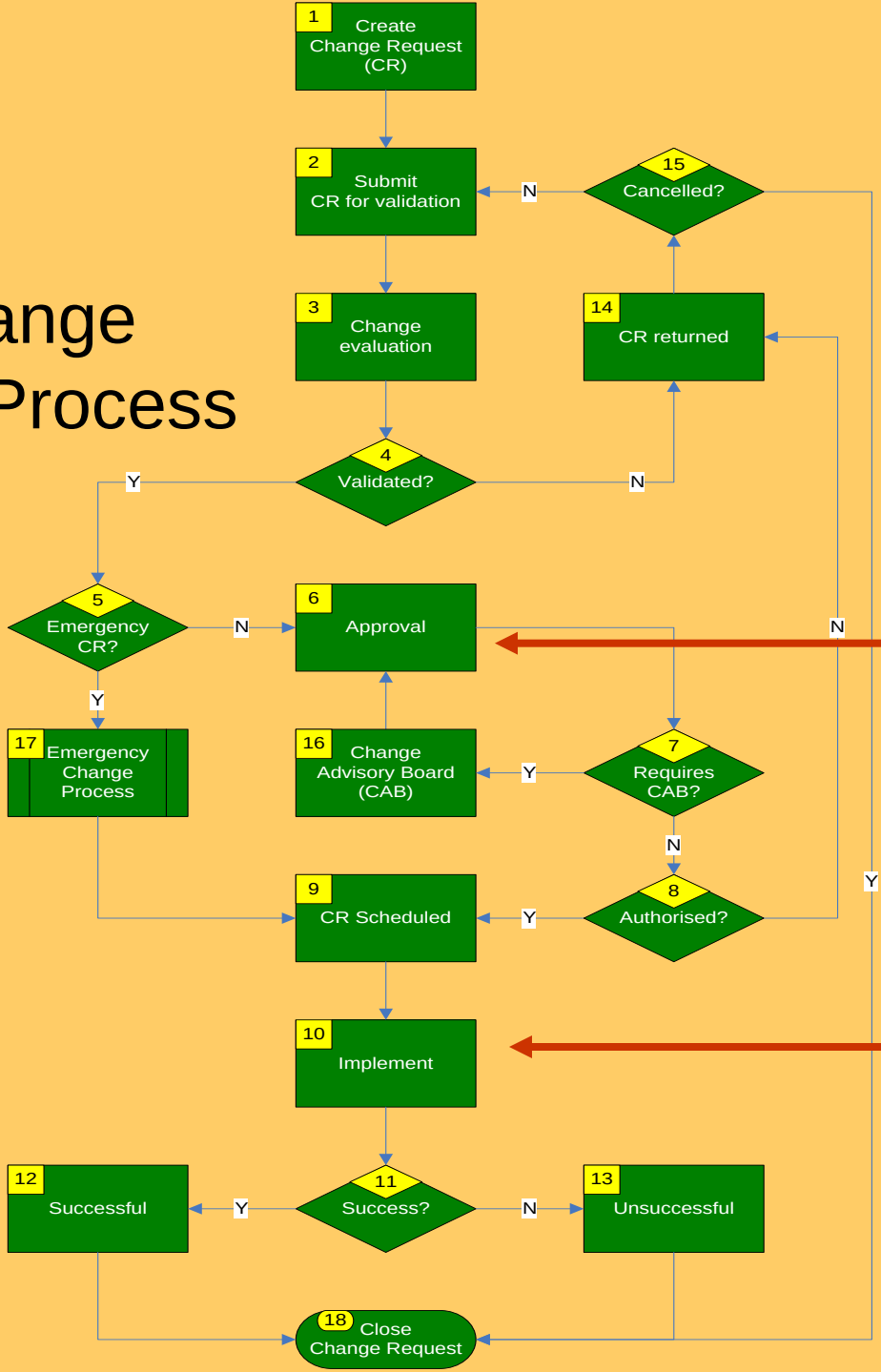
Typical Change Management Process



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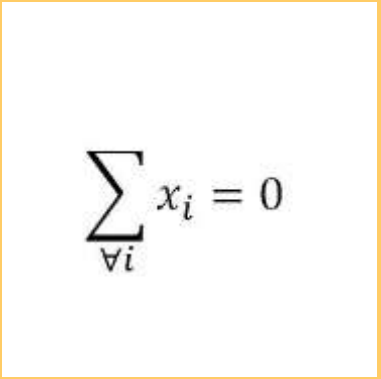
Prevention Control?

- A signature on a change request will PREVENT an unauthorised change being made

  - Design = 0 (3)
  - Implementation = 3 (3)
  - Monitoring = 3 (3)
  - Evaluation = 3 (3)



SCORE = 9 (12) = 75%

However, as Design scores 0, then total score becomes zero.

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Trust
(A Misconceived Control Mechanism)

- Trust is an action that involves a voluntary transfer of resources (physical, financial, intellectual, or temporal) from the truster to the trustee with no real commitment from the trustee
- A time lag exists between the extension of trust and the result of the trusting behaviour

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Detection Control? (Trust Model)

- Unauthorised changes inserted during an authorised change will be DETECTED by testing

  - Design = 1 (3)
  - Implementation = 3 (3)
  - Monitoring = 3 (3)
  - Evaluation = 1 (3)

$$\sum_{\forall i} x_i = 0$$

SCORE = 8 (12) = 67%

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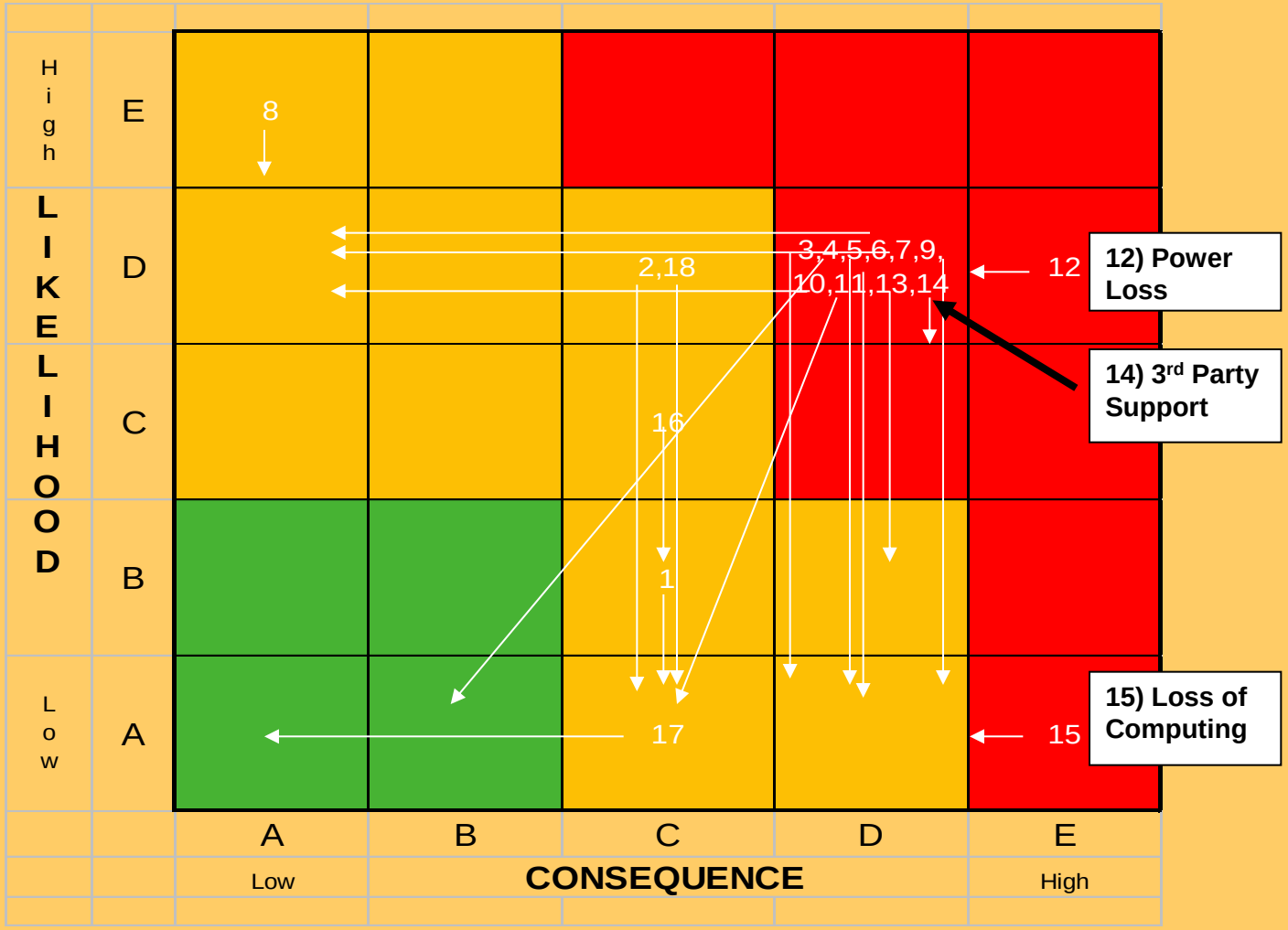
Importance of Control Effectiveness Measurement



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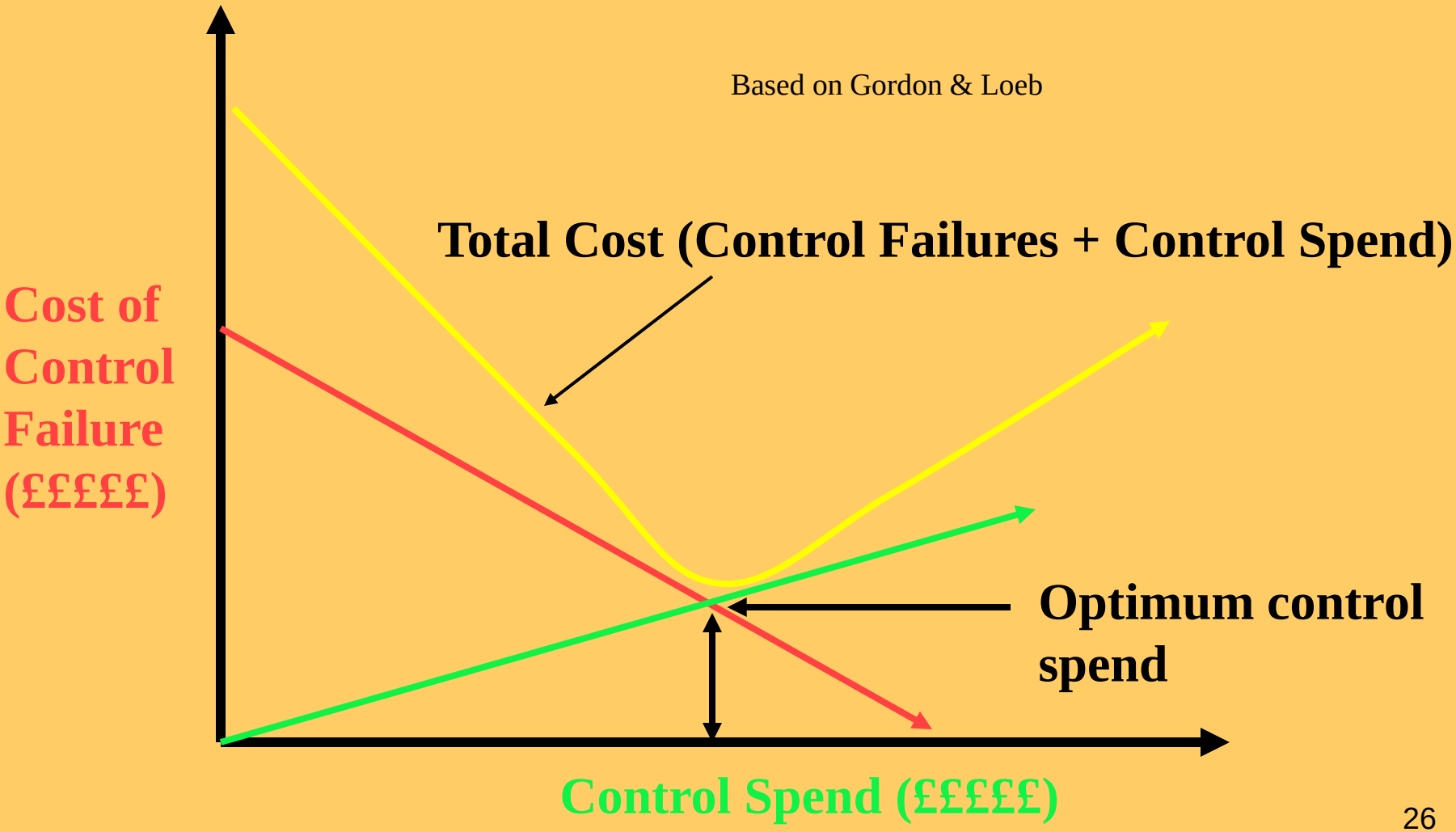
How Much Should We Spend?



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Things To Think about

- A single control only manages one aspect of the risk equation (either likelihood or consequence)
- Many control processes are based around pre-approvals
- Pre-approvals rely on trust
- Trust is not a control mechanism
- Most of our controls are less than 100% effective

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Summary

- Risk is managed by controls
- Evaluating control effectiveness is the key to risk management
- The value we are getting from our control investment is much less than we think, because most of our controls are not effectively managing our risks

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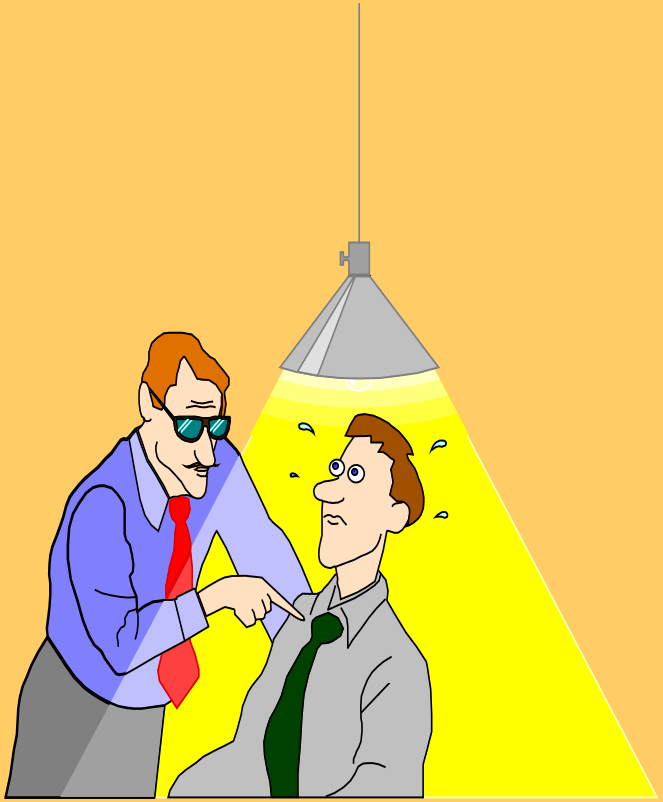
Questions?



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