Enterprise Security Architecture

Business-driven security

April 2012

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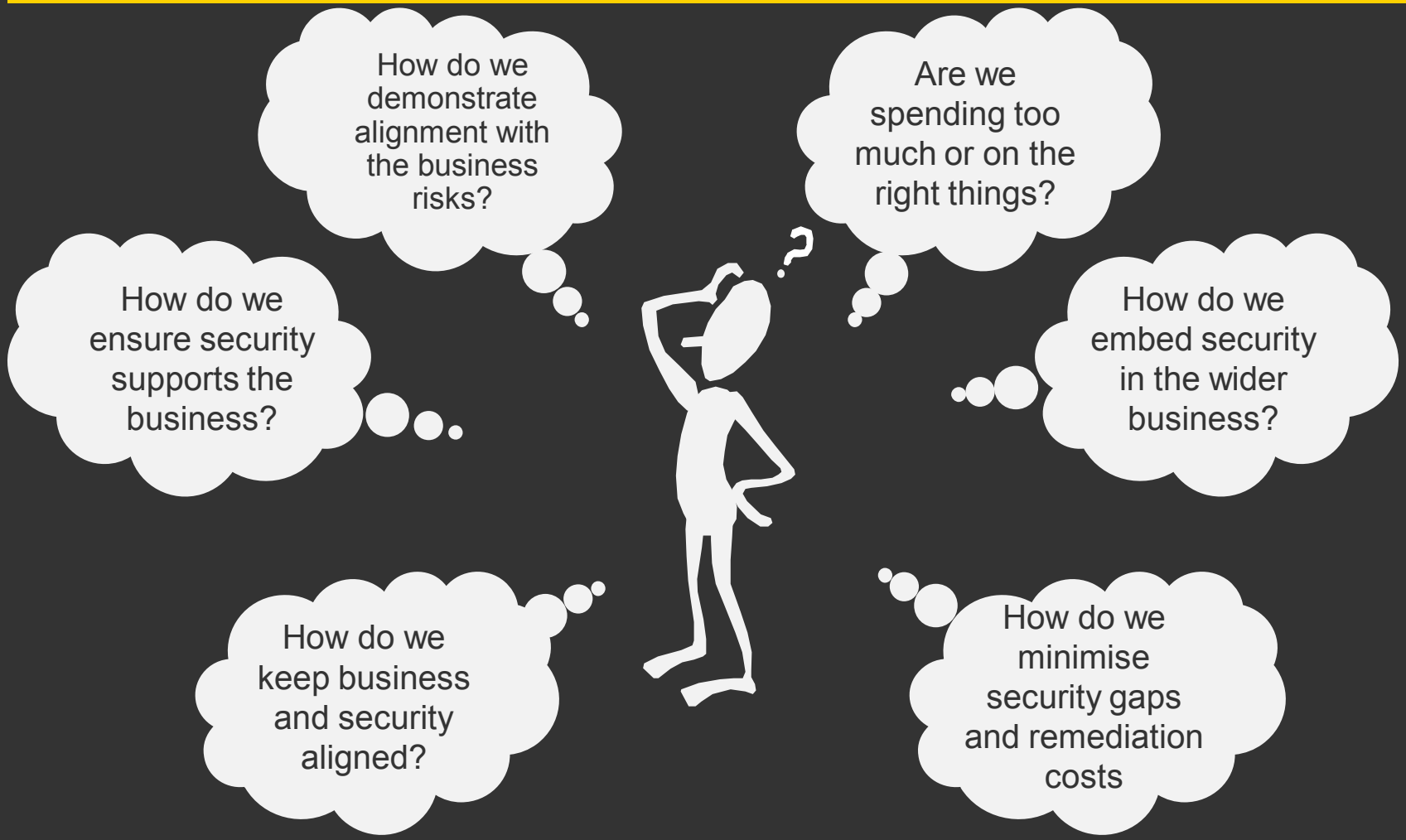
Agenda

- Facilities and safety information
- Introduction
- Overview of the problem
- Introducing security architecture
- The SABSA approach
- A worked example
- Security architecture components
- Facilitated discussion

The Problem: Information Security
The business perspective

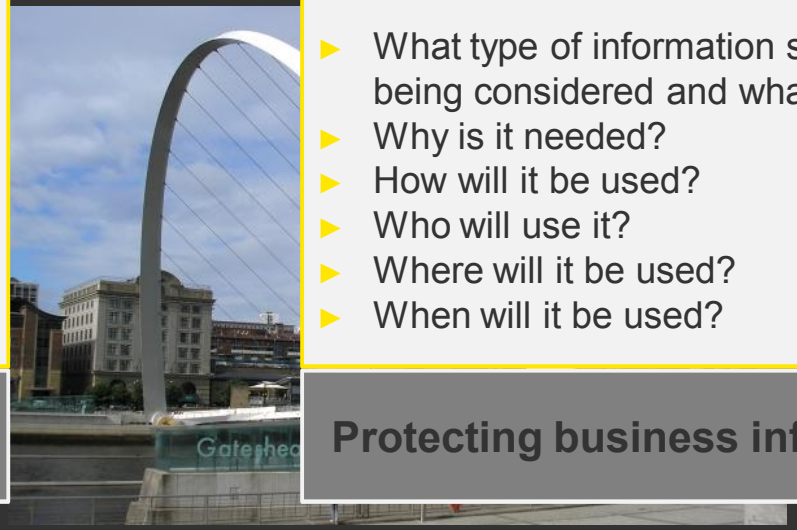
The problem: answering the difficult questions



Introducing security architecture?
Traditional architecture vs. security architecture

- What type of structure do I want?
- Why do I want this structure?
- How will it be used?
- Who will be the users of the structure?
- Where should the structure be located?
- When will it be used?

Building a physical structure

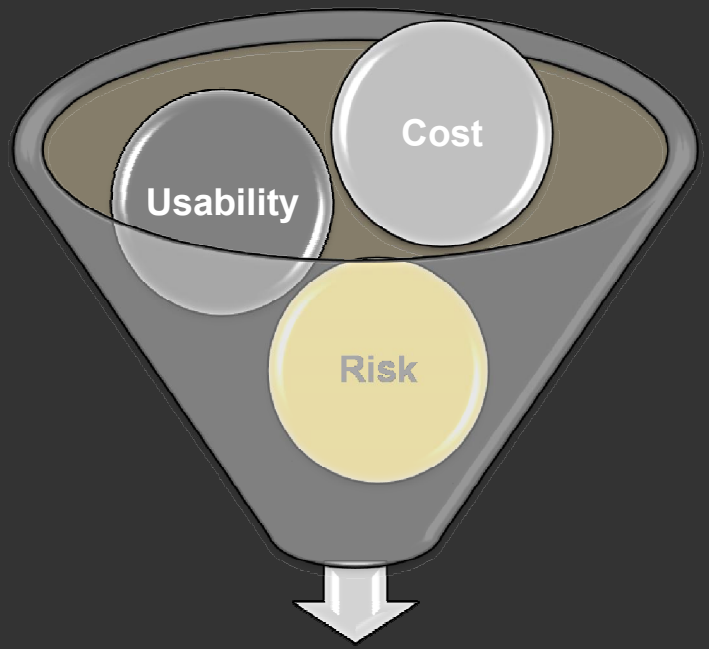


- What type of information system is being considered and what will it do?
- Why is it needed?
- How will it be used?
- Who will use it?
- Where will it be used?
- When will it be used?

Protecting business information

- Designing a secure business information system could take a number of directions, but there is considerable potential for the security and business requirements to clash and neither party is satisfied with the end result.
- The answers to these questions provide the architect with the business requirements which can then be fed into the design process.

How do I solve this problem
What is business security architecture?



- The challenge in developing the architecture is to balance between risk, cost and usability
- Security architecture controls are composed of people, process and technology controls

An organisation needs security controls that are:

- Driven by business requirements rather than technical considerations
- Directly traceable to business objectives
- Designed from the outset to be cost-effective, avoiding remediation effort
- Meet legal, regulatory and policy compliance requirements by design
- Are appropriate to both the business risks and organisation's risk appetite

Why do this? Benefits of the security architecture approach

Customised information security control framework

- Driven by the organisation's business requirements
- Meeting compliance
- Alignment with the business' risk appetite

Reduces information security, IT and security audit costs

- Eliminates redundant controls
- Reduces ad hoc security implementation
- Provides detailed agreed security requirements

Informs executive management about security risk

- Articulates impact of information security risk in business terms
- Provides structured control framework to evaluate compliance
- Creates foundation for quantitative assessment of security ROI

The SABSA approach
Step by step

Business Driver	Business Attributes	Threat analysis	Impact analysis	Control Objectives	Security services
► Identify the business drivers/ objectives. ► Prioritise drivers.	► Translate drivers into business security attributes. ► Security attributes are provided by SABSA framework.	► Perform threat analysis. ► Identify actual threats to business attributes/ business drivers.	► Use qualitative or quantitative methods to define impact of the realisation of the threat on the identified business objectives.	► Define control objectives to mitigate the identified threats to acceptable levels.	► Identify security services to provide the required controls objectives.

The SABSA approach
An architect's perspective – Here comes the science!

	Assets (What)	Motivation (Why)	Process (How)	People (Who)	Location (Where)	Time (When)
Business	The Business	Business Risk Model	Business Process Model	Business Organization and Relationships	Business Geography	Business Time Dependencies
Architect	Business Attributes Profile	Control Objectives	Security Strategies and Architectural Layering	Security Entity Model and Trust Framework	Security Domain Model	Security-Related Lifetimes and Deadlines
Designer	Business Information Model	Security Policies	Security Services	Entity Schema and Privilege Profiles	Security Domain Definitions and Associations	Security Processing Cycle
Builder	Business Data Model	Security Rules, Practices and Procedures	Security Mechanisms	Users, Applications and the User Interface	Platform and Network Infrastructure	Control Structure Execution
Tradesman	Detailed Data Structures	Security Standards	Security Products and Tools	Identities, Functions, Actions and ACLs	Processes, Nodes, Addresses and Protocols	Security Step Timing and Sequencing
Facilities Manager	Assurance of Operational Continuity	Operational Risk Management	Security Service Management and Support	Application and User Management and Support	Security of Sites, Networks and Platforms	Security Operations Schedule

Design

Build

Contextual & conceptual security
Understanding the business and its risks

Gather, assess and analyse business requirements

- Business strategy
- Business processes and functions
- Organisational structure – personnel, geographical, partnerships
- Budgets, technical constraints, time dependencies

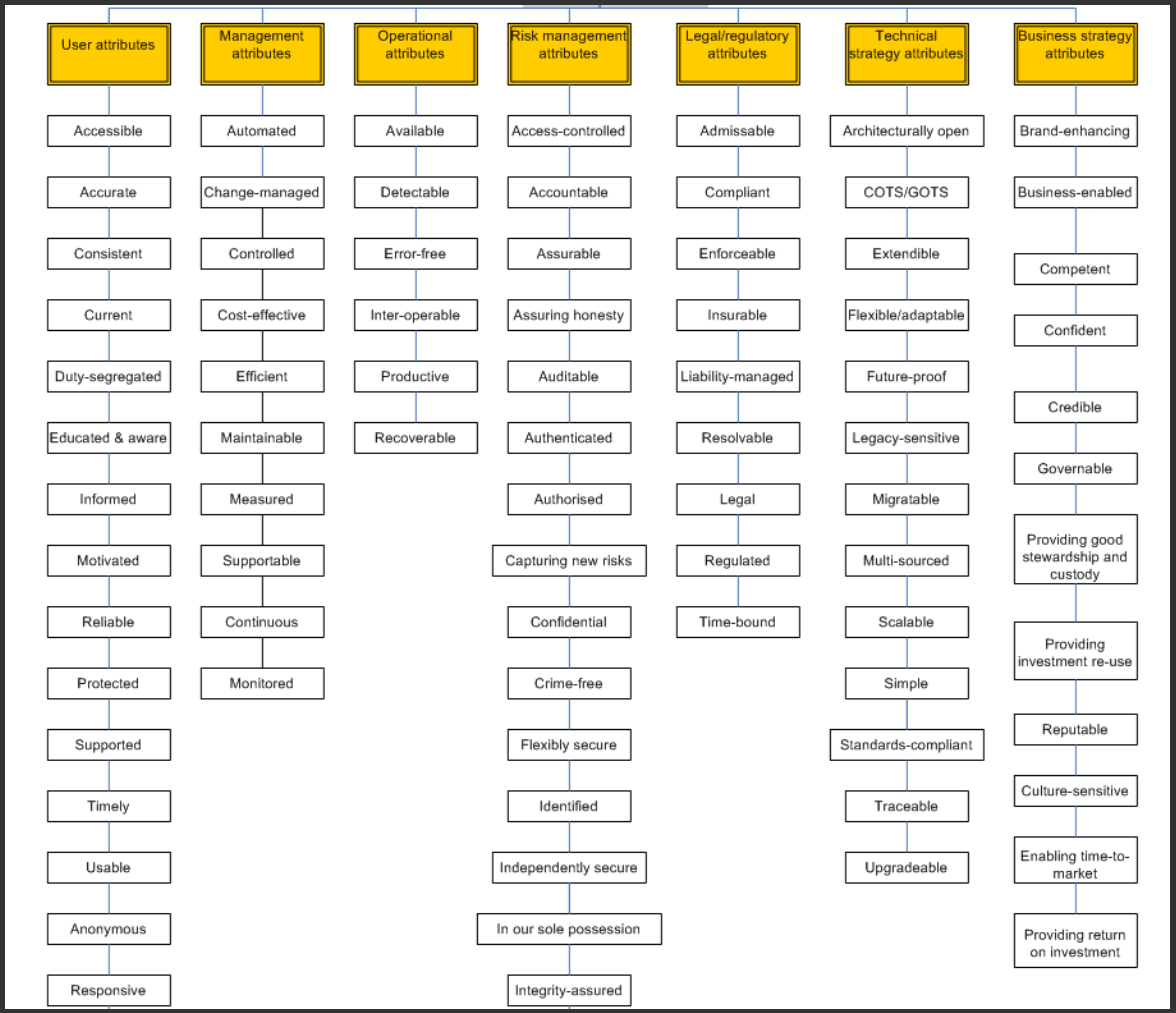
Describe the business requirements

- Use the business attributes database to describe the business in terms of strategy, related assets, business goals and objectives → business attribute profile

Analyse the business risks

- Perform a threat analysis on the business assets, goals and objectives
- Define the business impact of the realisation of the threats
- Identify technical and procedural vulnerabilities

An overview of SABSA attributes database



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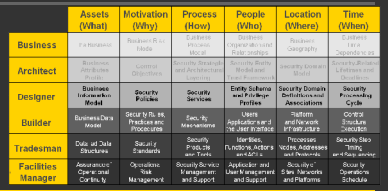
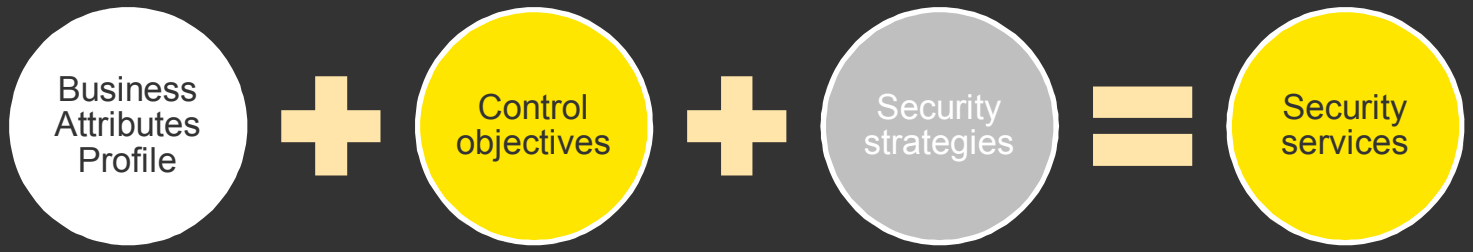
A logical security architecture
What does it look like?





Business Attributes Profile

- Select business attributes (mapped to business drivers).
- Define enterprise-specific business attributes, a measurement approach, metrics and targets.

Control objectives

- Derive control objectives from the Business Attributes Profile and the Business Risk Model developed at the Conceptual layer.

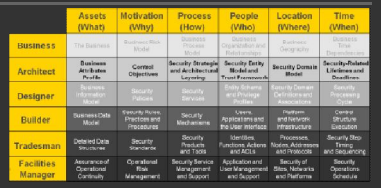
Security strategies

- Define appropriate security strategies based on the business process model, the Business Attributes profile, the control objectives and the assessment of the current state of security

Security services

- Layered model of security services, including:
- Prevention
- Containment
- Detection and notification
- Event collection and tracking
- Recovery
- Assurance

A worked example
Business drivers



Business driver

Protect customer information

Prioritised

Business attributes

Compliant

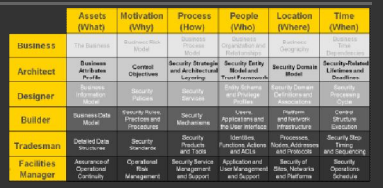
Access-controlled

Protected

Threats

- Customer data is disclosed to internal users through inappropriate access controls
- Staff leak customer information to unauthorised third parties
- Customer information is disclosed in transit to third-party processor.
- Sensitive* customer data is disclosed to unauthorised parties

A worked example
Control objectives



Control Objectives: Protect customer information

Business attributes – Compliant, access-controlled and protected

Operations, process and procedures

- User access management
- Monitoring user access levels and user activity, particularly third parties
- Incident response for data breach

People

- Training and awareness for all staff on data protection
- Focussed training for high-risk areas, e.g., call centres

Compliant Access-controlled Protected

Technology

- Identity management
- Authentication and authorisation
- Database and network encryption to protect personal data in storage and in transit
- Auditing and logging of access to sensitive* personal data

Governance

- Nominated Data Protection Officer
- Data protection policies, standards and procedures
- Third party risk management framework
- Data protection assurance

A worked example
Security services

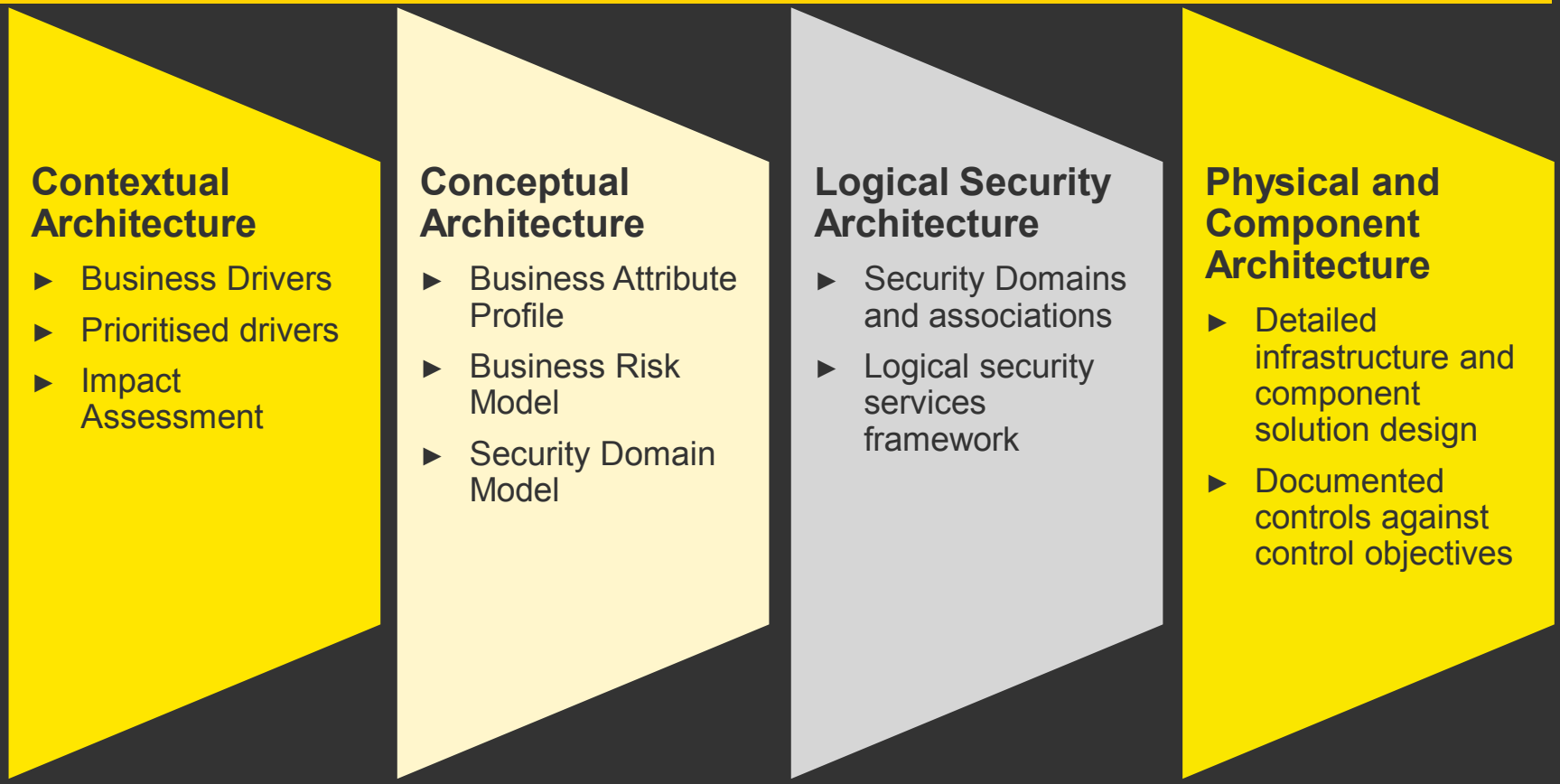
Technical security services

- Identity management tools
- Authentication
- Access control
- Authorisation
- Auditing
- Storage encryption
- Link encryption
- Breach

Technical security services

- Security management
- Incident management
- Policies, standards, procedures, guidelines
- Training and awareness
- Proactive reviews
- Third party management frameworks

Security architecture deliverables
What do you get?



Portrait of a successful security architect

An architect's skill-set is different from a tradesman

Understands the business strategy and objectives

- There are more than just 'security' requirements

Thinks in business terms at all times

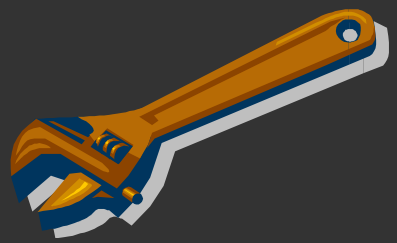
- Why are we doing this?
- What are we trying to do?

Has good communication skills

- Bridges the gaps between business and technology

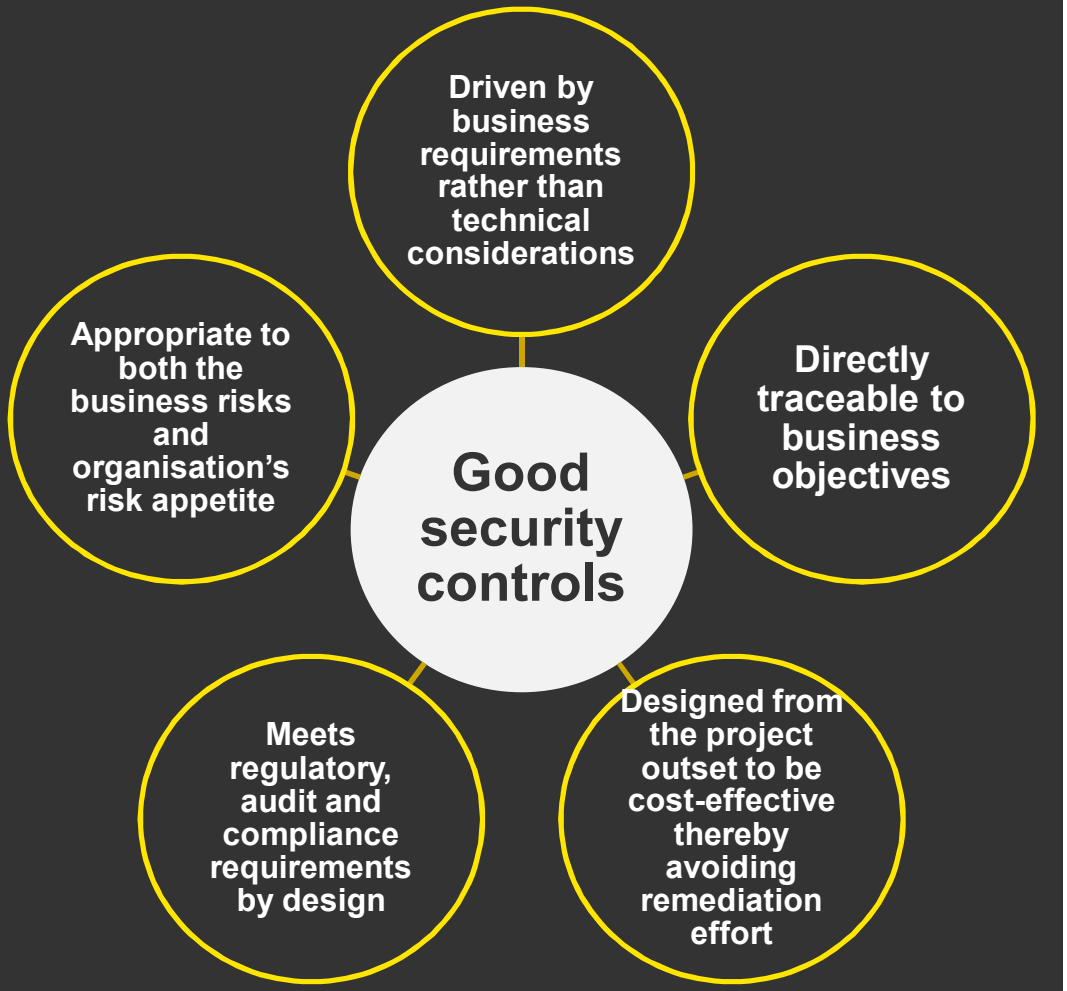
Maintains strength of character

- Defends the security architecture
- Meets the constant challenge

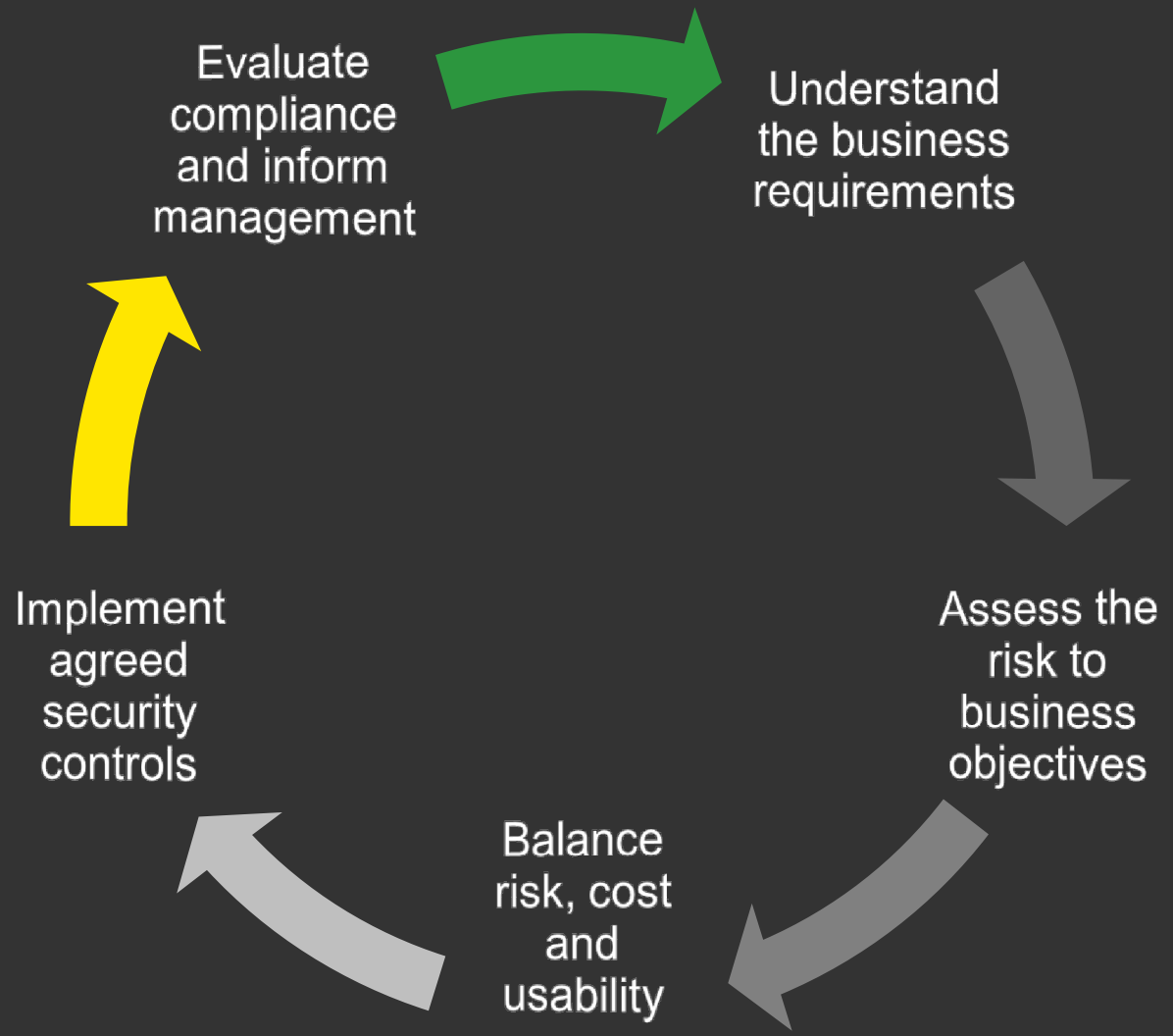


Optimising your investment in security architecture – measuring success

- Characteristics of a good business security architecture
- Strategic alignment: aligned to the current business strategy
- Agility: designing a security architecture to deal with the changing legal, regulatory and client requirements
- Extensibility: expanding the architecture on a phased based throughout an organisation
- Robustness: demonstrates a thorough development with appropriate input, review and approval and will withstand critical evaluation from detractors
- Pragmatism: reflects the operating environment of the organisation and imposes appropriate security controls for the people and culture.



Security Architecture Summary



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