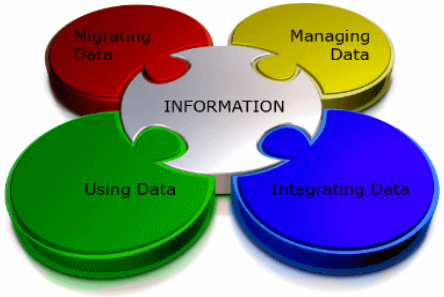
System Architect & Enterprise Data Management

Turning Data Into Information



Paul Stewart
Business Intelligence & Enterprise Data Manager
Australian Red Cross Blood Service

August 2009

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Purpose of this Presentation

- The purpose of this presentation is to provide the audience with an overview of the approach taken by the ARCBS in implementing an Enterprise Data Management strategy
- It looks at the initial problem and our approach to addressing the problem with a focus on the use of System Architect as the central repository for it's Enterprise Data Definitions
- It aims to provide the audience with the useful examples to the EDM approach and the use of System Architect in managing Enterprise Data

How will I take you through our journey ?

- I will introduce you to the ARCBS
- I will discuss our background data dilemma
- I will discuss how we defined and approached Enterprise Data Management
- I will talk about why we use an EA tool (System Architect) and how we use it in the Data context
- I will finish by sharing our lessons to data and what we are doing differently

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Who is the ARCBS ?

- ARCBS is the largest operating division of the Australian Red Cross Society & fully funded by the Federal & State governments
- ARCBS have been involved in the collection, screening, processing and distribution of blood and blood products since 1929 in Victoria
- 3300+ employees and 2400+ volunteers
- 569,000 Blood and 170,000 Bone Marrow Donors, 1.2m Donations per annum
- Supplies over 3 million units of blood components & products to more than 600 Approved Health Providers

The vision of Australian Red Cross Blood Service is:

"To improve the lives of patients through the power of humanity"

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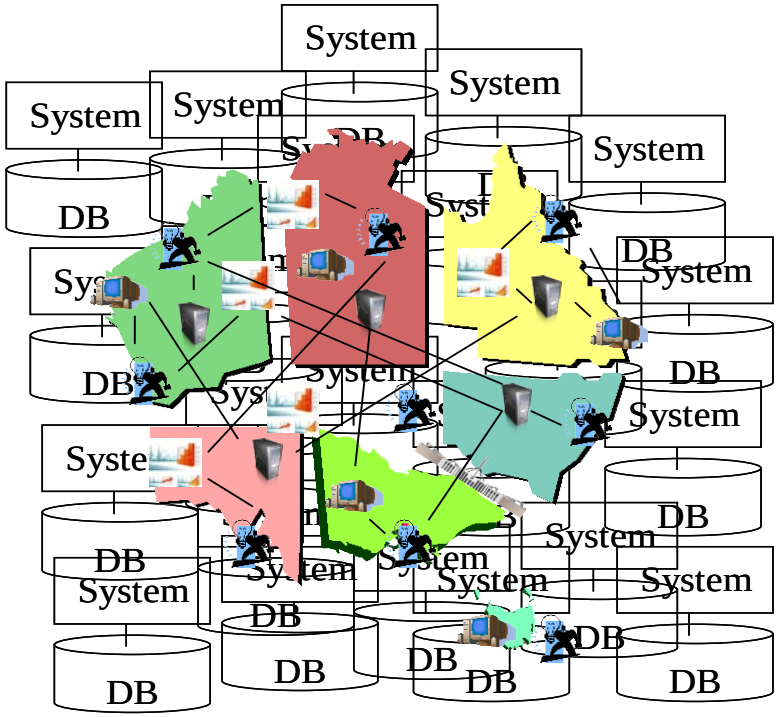
Background to our Data Dilemma

- In 1996 the ARCBS (National) was formed
- Prior to this each state had it's own 'blood service' with their own supporting applications, processes, data etc
- In 2000, a new National Blood Management System (PROGESA) was chosen and implemented state by state between 2003-2006
- PROGEA holds around 90% of ARCBS data
- There were 135+ applications in the ARCBS

ARCBS Pre EDM (2008)



- Multiple Data Repositories
- Multiple/ No Standards
- Multiple “Owners”
- Overlapping Data spaces
- Duplicated Data
- Lack of consistency
- Fragmented approach to reporting & analysis
- Duplication of effort
- Absence of source of truth

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So……

At an enterprise level we didn't have a handle on

- what we had
- where it was
- who owned it
- what it was used for
- how it was maintained
- how we could use it
- if it could be relied on

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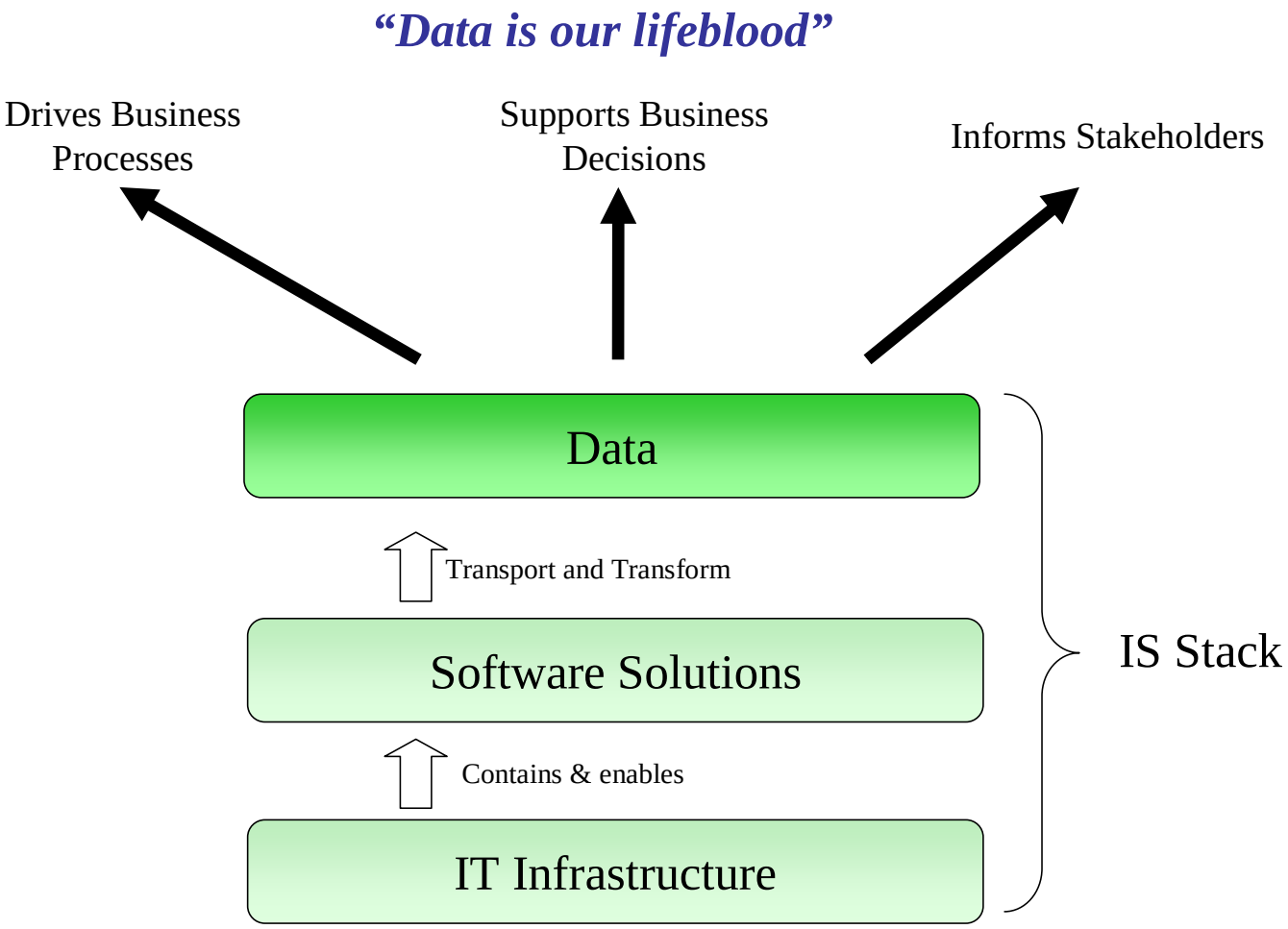
The Importance of the Data Layer



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WHAT IS ENTERPRISE DATA MANAGEMENT ?

"An organisation's ability to properly define, effectively integrate and easily retrieve data between applications as well as internal and external users."*

* Wikipedia

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Our Approach to Enterprise Data Management

- Define Data Management Principles (What)
- Define Data Management Elements (How)
- Create an Organisational Data Catalogue
- Implement a centralised repository for Data Catalogue
- Implement a solution to replicate Reference & Master Data instead of duplicating it

ARCBS Data Management Principles

ENTERPRISE DATA MANAGEMENT PRINCIPLES

DATA WILL BE USED RESPONSIBLY	DATA WILL HAVE AN OWNER	DATA WILL HAVE AN AUTHORITIVE SOURCE & WILL NOT BE DUPLICATED	DATA MUST BE ACCESSIBLE	DATA IS AN ASSET

The core principles behind data management within ARCBS are:

Data will be used responsibly Data will be used for legitimate organisational purposes in compliance with organisational policies and state and federal laws.

Data will have a custodian Ensures data is collected, protected, and maintained in accordance with appropriate standards and guidelines.

Data will have an authoritative source and will not be duplicated Each individual data item has a single authoritative source.

Data must be accessible Data stored in information repositories within the extended organisation should be widely available and accessible by all entities within the extended organisation and other appropriate partners and entities

Data is an asset Data is an asset that must be managed for the benefit of the extended organisation. Data must be shared to the maximum degree possible without jeopardizing security and confidentiality.

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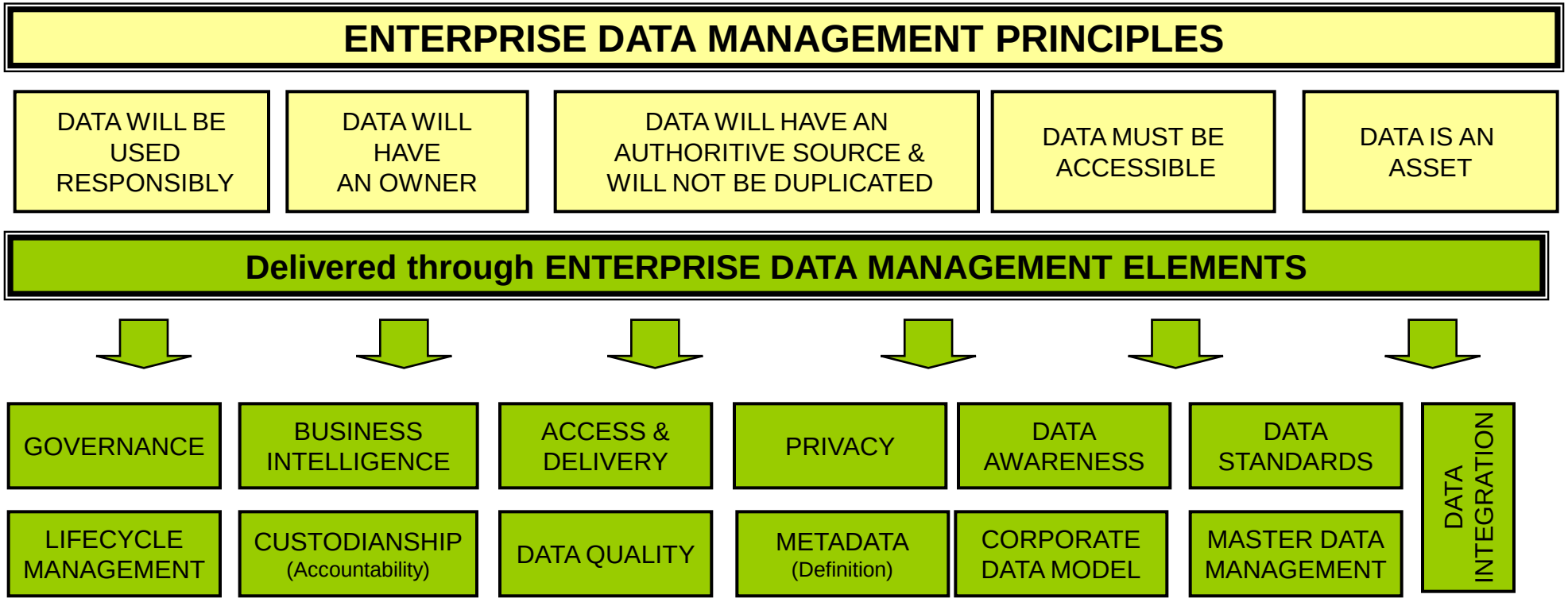
Enterprise Data Management Elements



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Data Cataloguing

- The purpose of Data Cataloguing is to create a centralised catalogue of all the organisations data for the purpose of understanding relationships, ownership, usage, integration, identification of the organisations Master Data and Reference Data and to assist in understanding impacts of change

- Data Cataloguing involves the detailed cataloguing of data held in each of the organisations applications

- It involves the creation of each data element at Application level

"If you don't know where you've been you don't know where you going"

Why did ARCBS need an Enterprise Architecture Tool ?

- Enterprise architecture models and documentation was spread inconsistently in spreadsheets, word documents, power points presentations, Visio diagrams, Erwin models etc
- There was no single, consistent view of our enterprise architecture
- We had minimal understanding of the relationships and overlaps between hardware, software, data, business processes and ownership
- We had minimal understanding of the downstream impact of many of the decisions we make in relation to our architecture
- Documentation was difficult, and at times impossible, to find
- Documentation was inconsistent
- We needed somewhere to capture our Data Catalogue

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What Key Benefits would an Enterprise Architecture Tool Deliver ?

- A central repository for the documentation, maintenance and delivery of enterprise architecture information (Hardware, Software, Applications, Data & People)
- The ability to understand and manage relationships between architecture components
- The ability to publish this information
- The ability to understand the impacts of our decisions regarding changes to hardware, software, data, people etc
- The ability to maintain & support relationships between architecture components, users and custodians.

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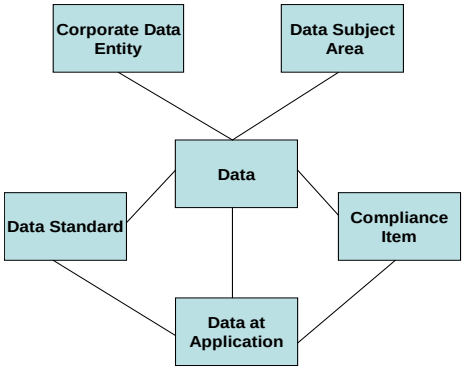
Defining the System Architect Meta Model



- Consider the questions you want answers to and design around capturing the data you will need to answer you questions
- Consider how you will want to analyse the impact of change
- Rome wasn't built in a day….neither will be a perfect meta model
- Don't aim for perfection before you start….run with a prototype and evaluate and update your meta model through it

Data + Meta Data = Information

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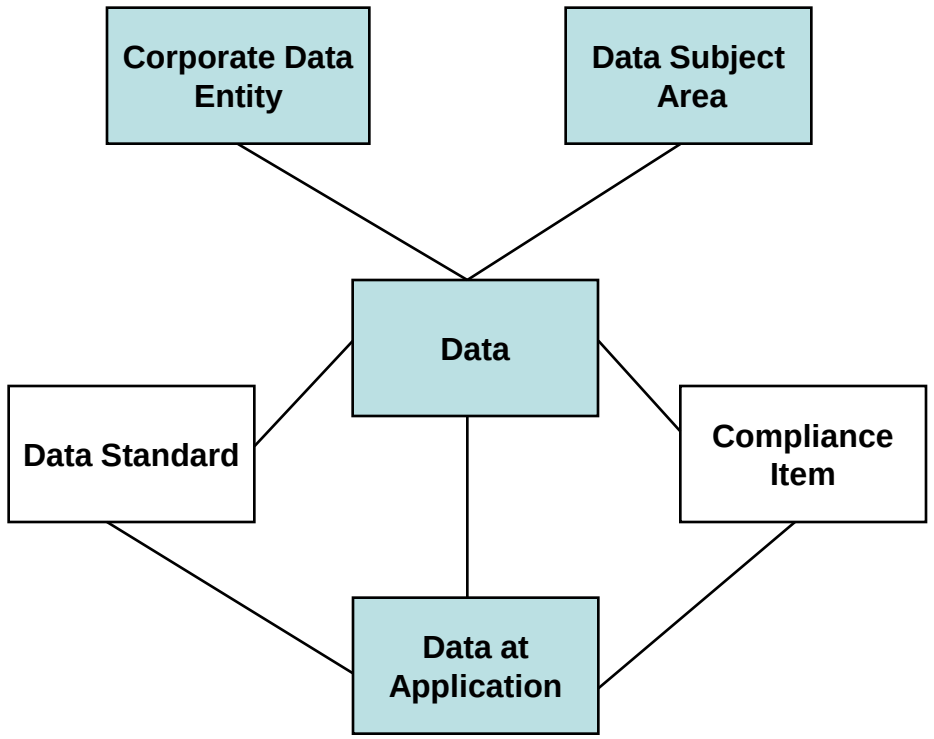
Meta Model for Data Definitions

Data Related Definitions



Other Data Related Definitions

Organisational Unit

Role

Application

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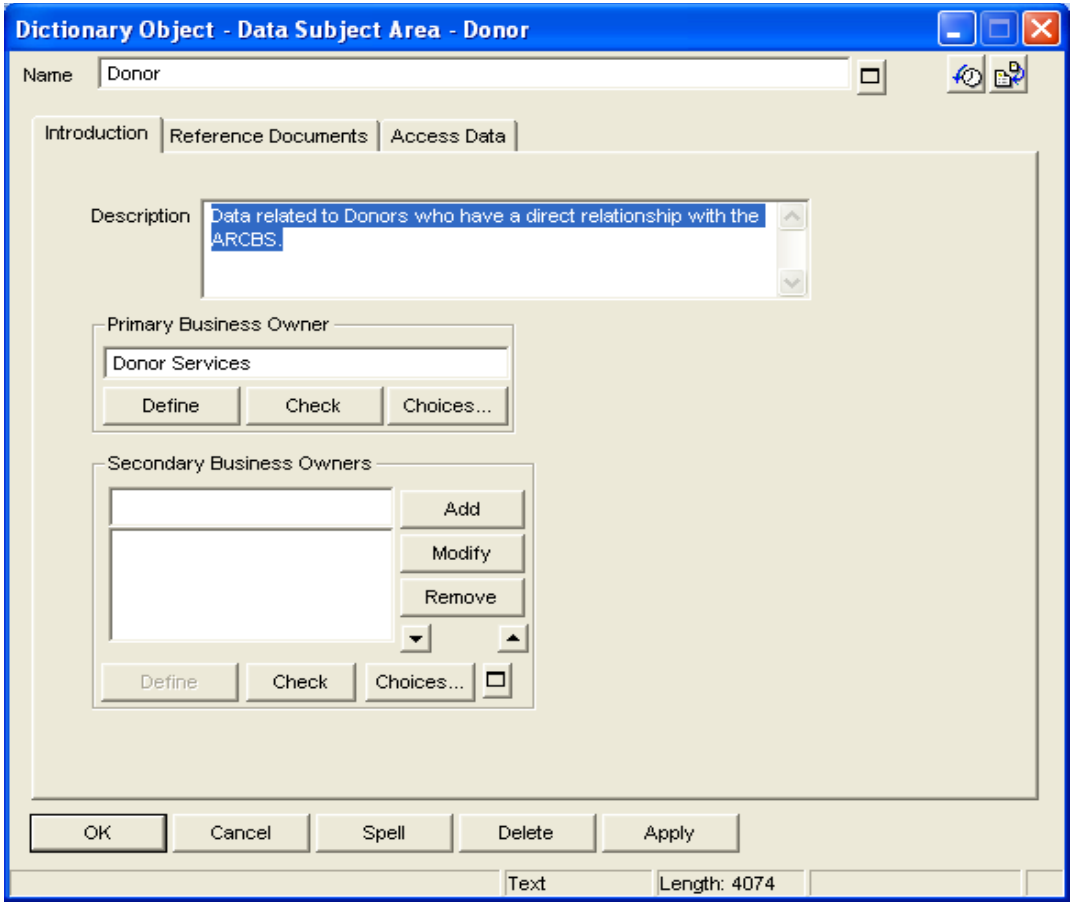
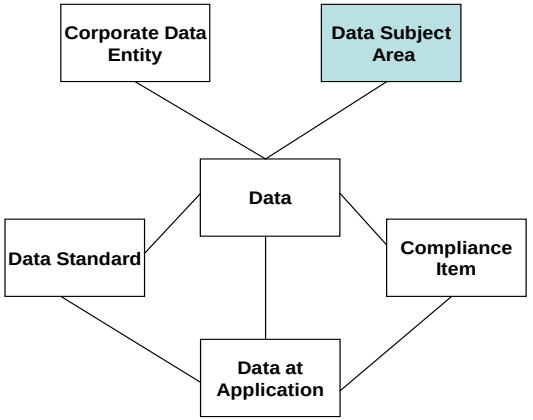
Data Subject Area Definition

The **Data Subject Area** Definition defines a logical subject area within our business.





Data Subject Areas include:

- Donor
- Appointments
- Donation Attendance
- Component Product
- Inventory

Identifies Primary & Secondary Business Owners (Org Unit)

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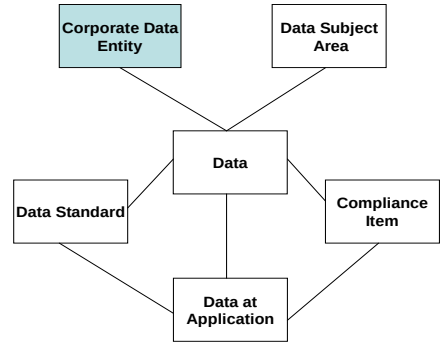
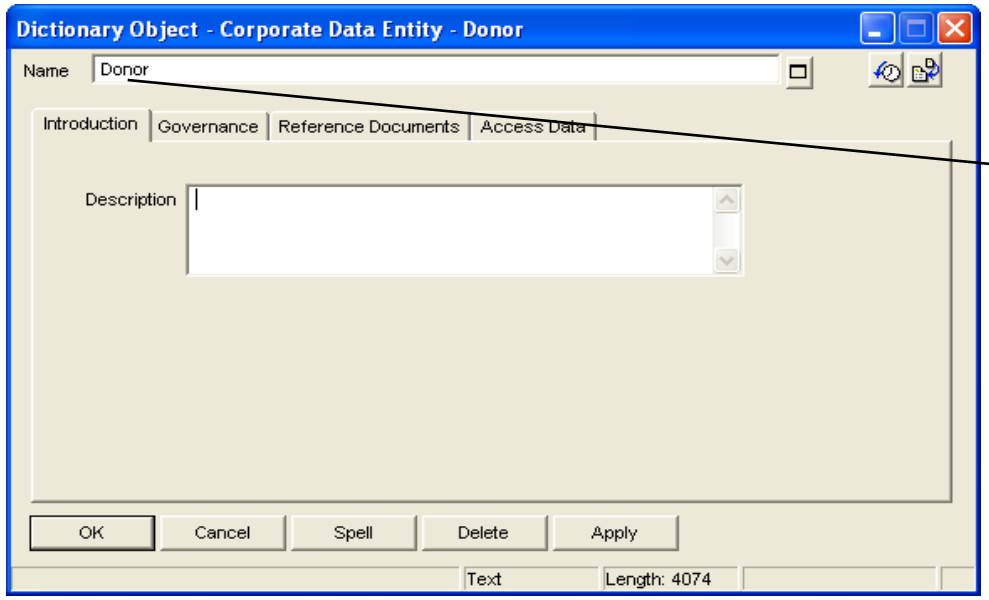
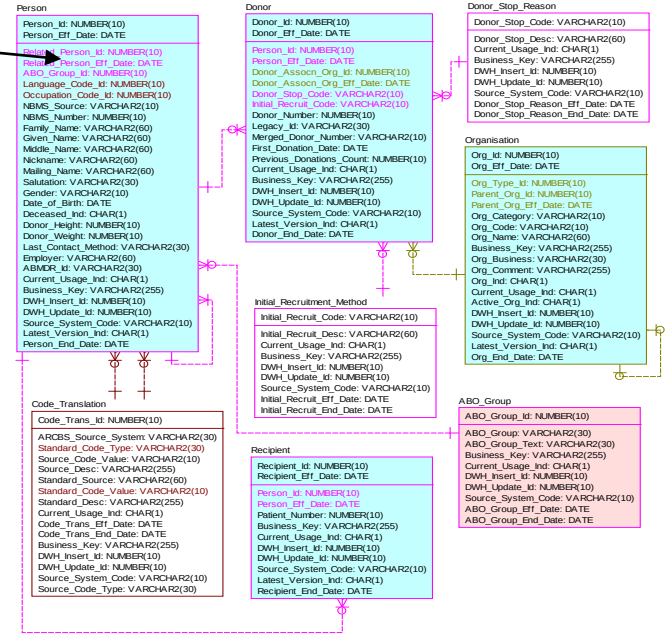
Corporate Data Entity



The **Corporate Data Entity** Definition defines the mapping of a logical Data entity as it exists in the Corporate Data Model. Logical **Data Definitions** are mapped to the **Corporate Data Entity** Definition.





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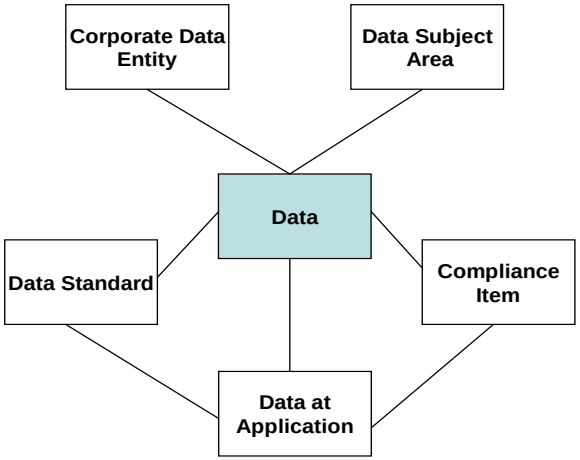
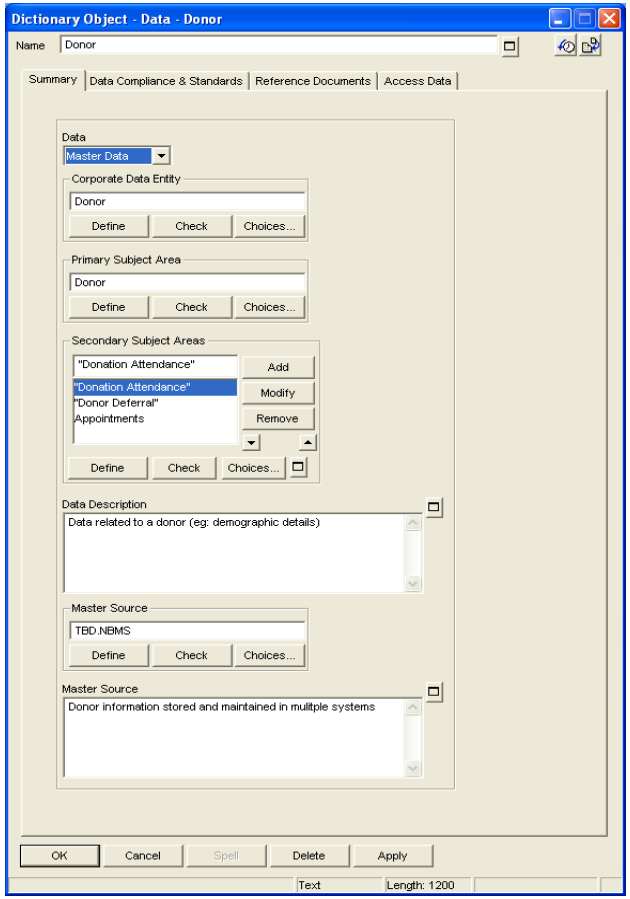
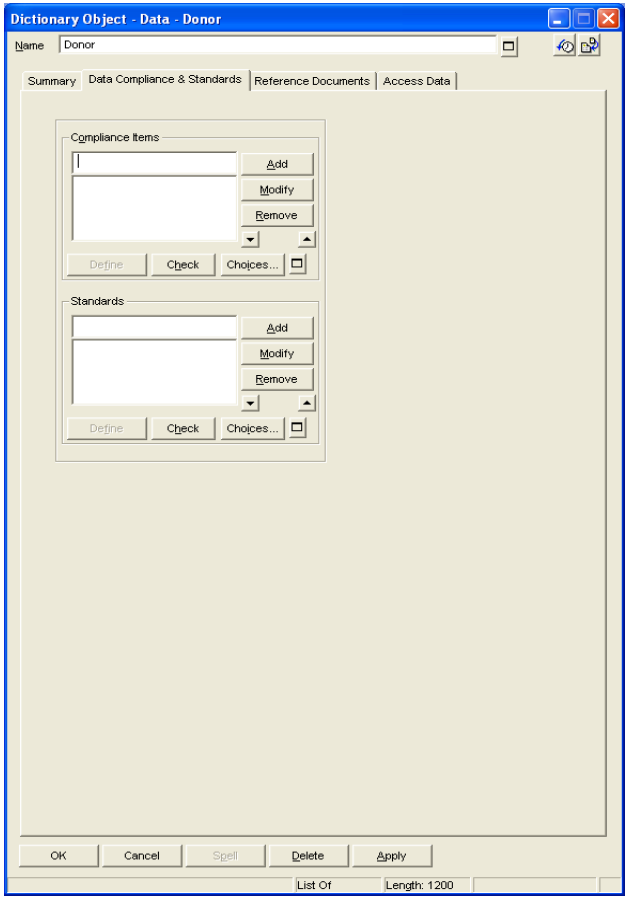
Data Definition

The **Data** Definition is the generic definition of a logical piece of data. The definition will represent the over-all definition of that piece of data but will not necessarily physically exist in that form at the Application level.







Data Types

Master
Internal/ External Reference
Transactional
Derived

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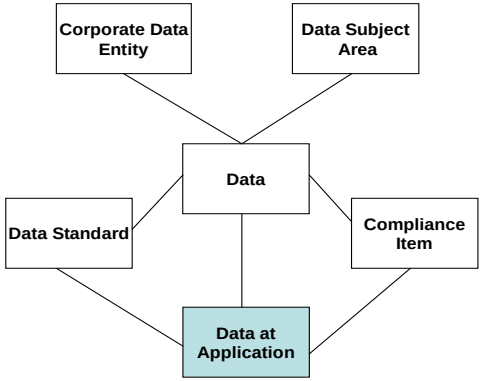
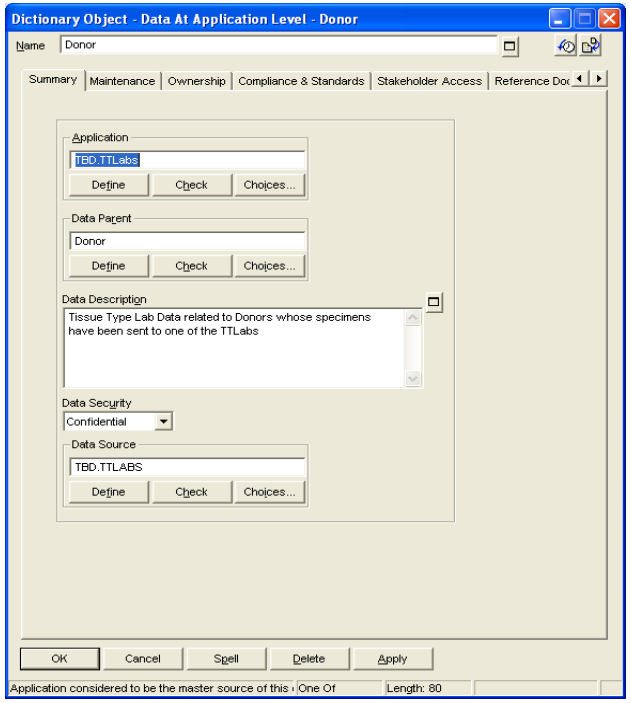
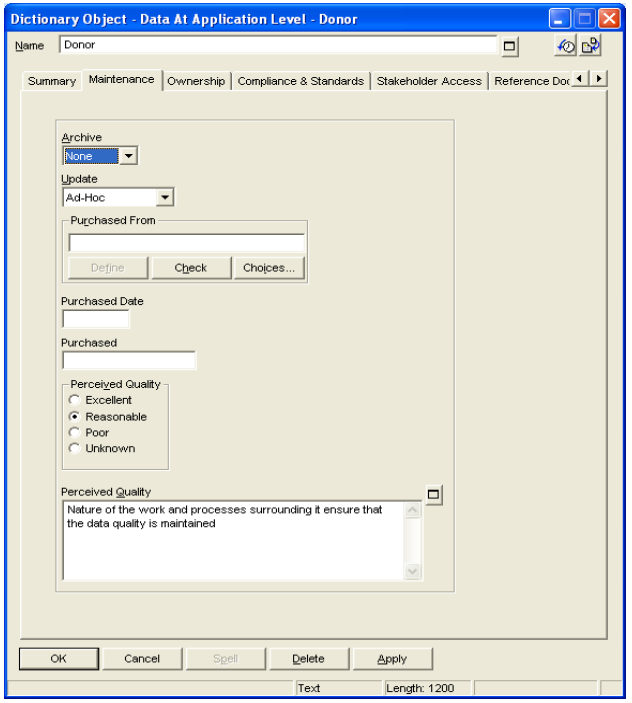
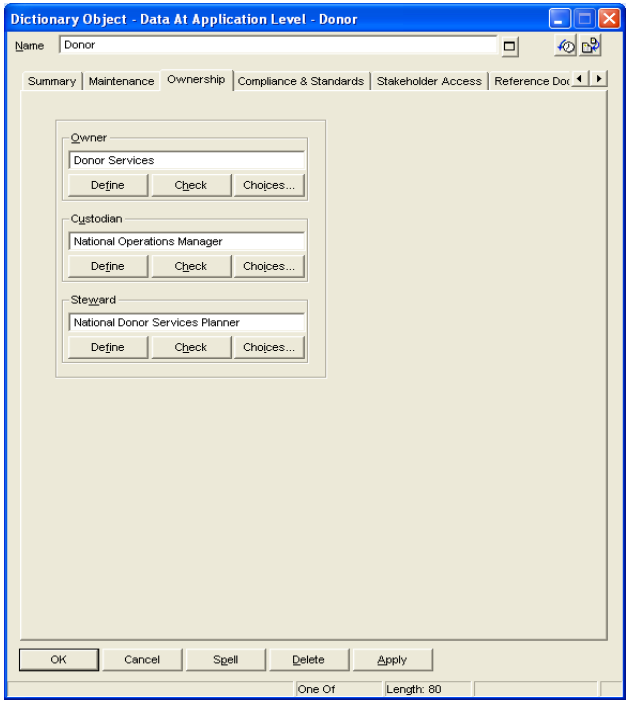
Data at Application Level Definition

The **Data at Application Level** Definition represents the definition of each physical instantiation of that type of data in an Application.









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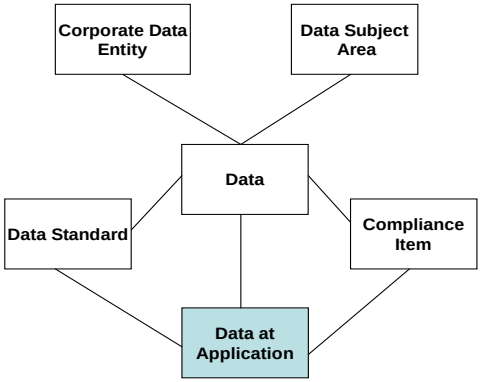
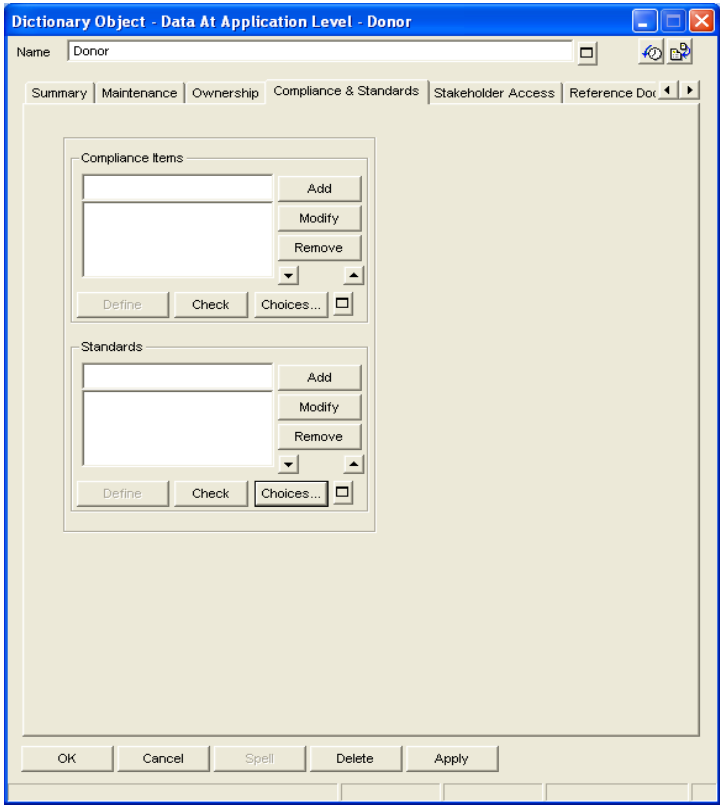
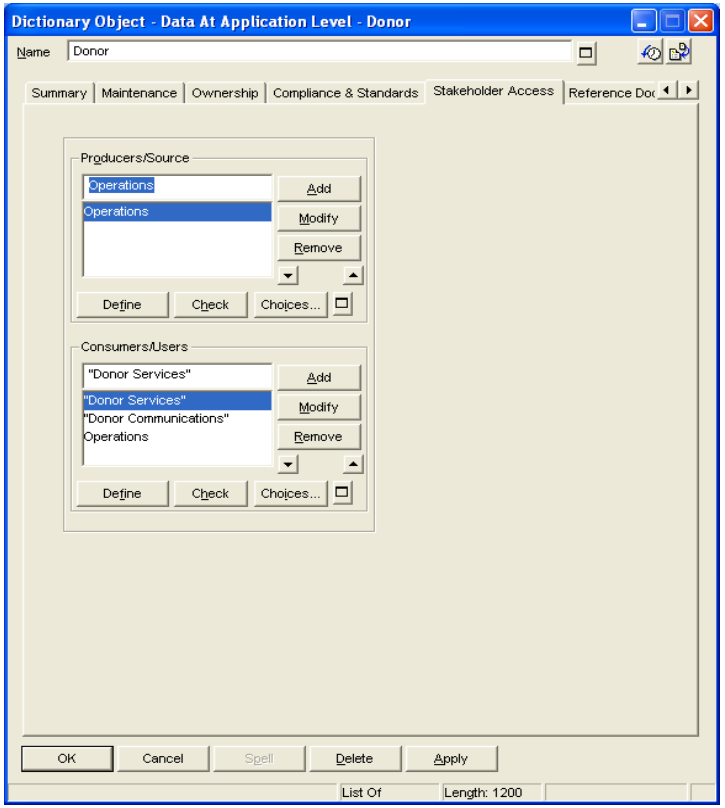
Data at Application continued







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Other Data Related Definitions

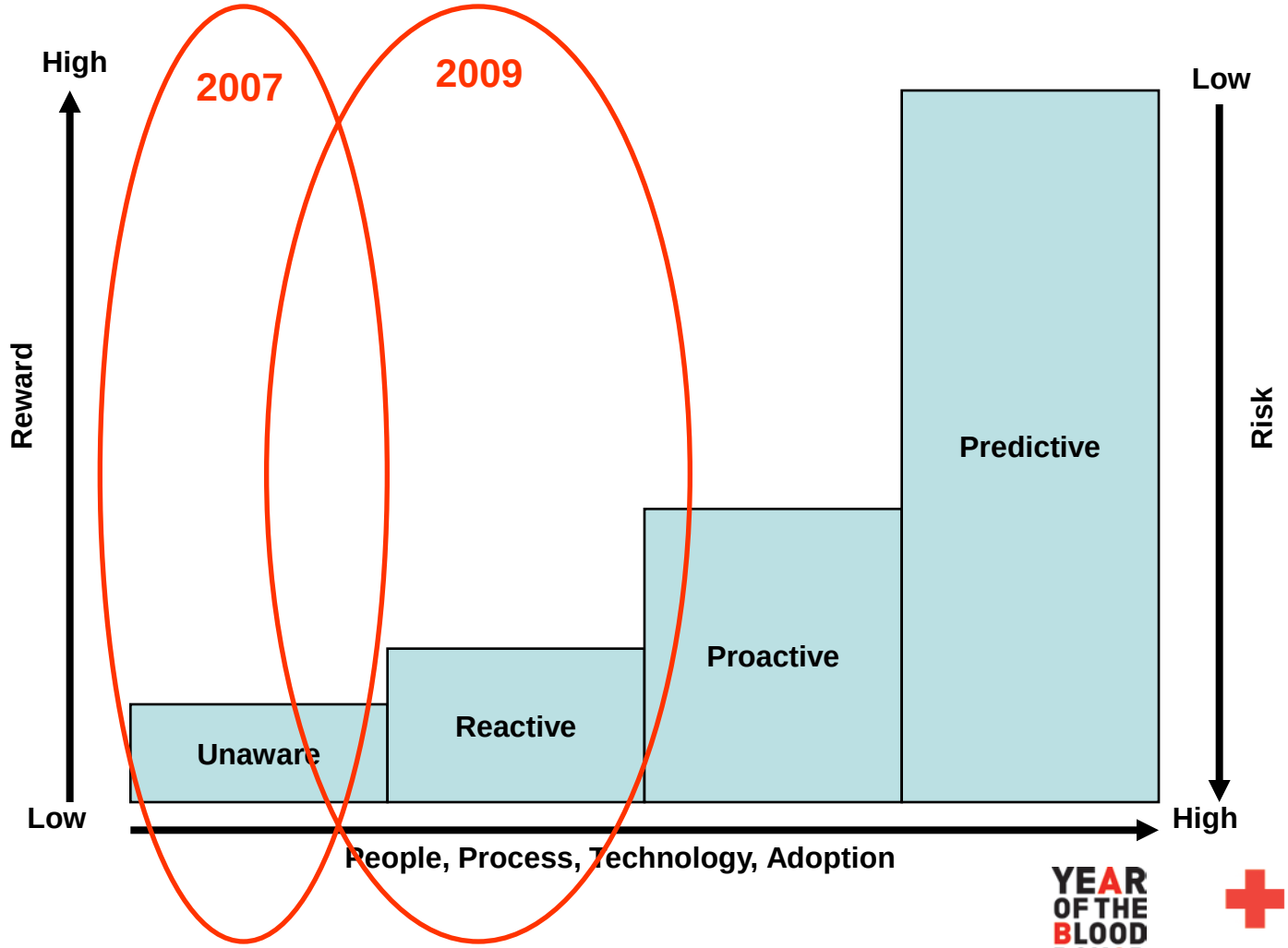
As part of defining our Data we were required to define a number of other definitions that had relationships directly with the data.

Organisational Unit	Defines each of the Organisation Units, their relationship to other Org Units
Role	Defines Roles in the Organisation and their relationship to Org Units
Application	Defines each application including details of software services, deployment, ownership, Physical instances, supported business processes etc

So what does this all mean ?

- We understand the importance of data – **DATA IS AN ASSET !!!!**
- We have a central repository of our Enterprise Data Definitions
- We understand its relationships and usage
- We can analyse the impact of change
- We can publish this data to various interested stakeholders
- We are replicating data – not duplicating
- We are creating data standards
- We are building databases inline with standards and according to a CDM

EDM Maturity Model



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ARCBS Learning to Date

- EDM is not a project
- Think of the Big Picture but take small steps
- Understand and acknowledge your limitations
- Aim to demonstrate value early and regularly
- Ensure executive level support to ensure commitment from participants
- Don’t try and include everyone in your initial phase. Start small.
- Don’t get bogged down in terminology and definitions and where possible adopt industry standards
- Clear Problem Definition – categorisation of pain points
- Understanding of Data – how data is organised
- Process Knowledge – hows things work
- Organisational Awareness – who is doing what – before & after

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Conclusion

- EDM is a journey and we have only just started
- The EDM journey does not end
- There is no ‘one size fits all’ rule book
- You WILL benefits from EDM and you CAN do it

Data is our life blood, without it we could not operate

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Kick-starting Enterprise Architecture

The ARCBS Enterprise Architecture Programme

Ken Lai
Enterprise Architect
Australian Red Cross Blood Service

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What is Enterprise Architecture

- EA = S + B + T
  - S = Strategy
  - B = Business
  - T = Technology

Source: An Introduction To Enterprise Architecture: Second Edition, by Scott A. Bernard (Chapter 1)

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My EA Formula

- Expectations
  - Set the right expectations from the start, and stick to it
- Communications
  - If everyone in an organisation are good communicators, we would be out of a job
- “Strategy”
  - EA is designed as a Strategic Planning discipline, so start with “Strategy”

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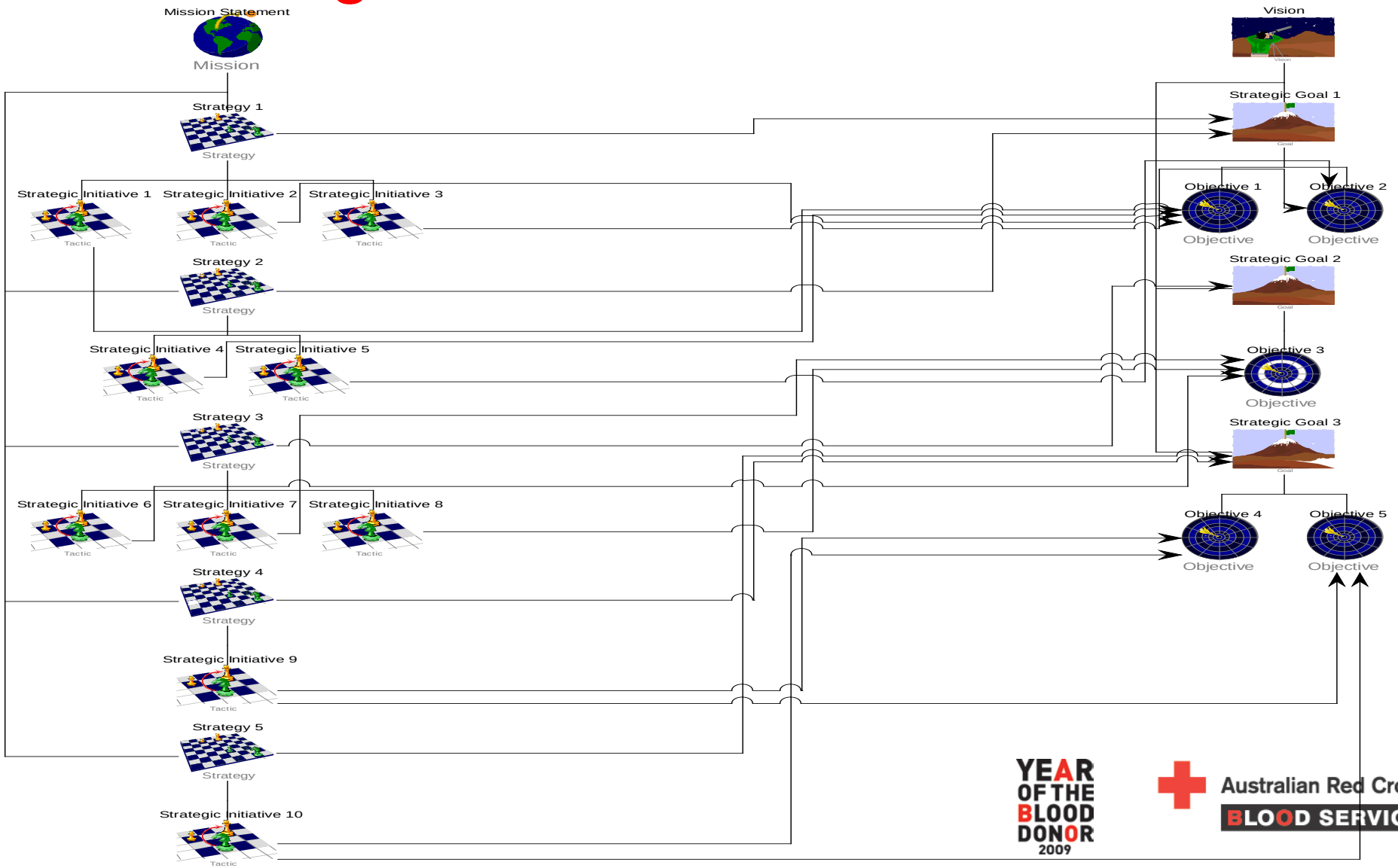
The Strategic View



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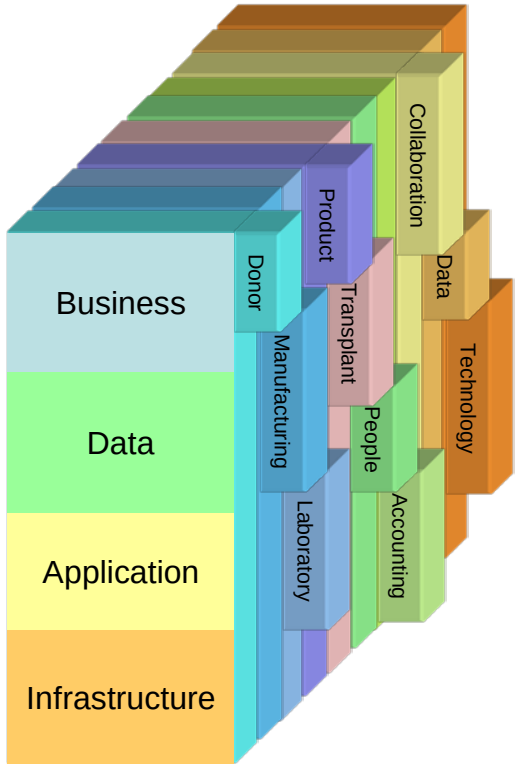
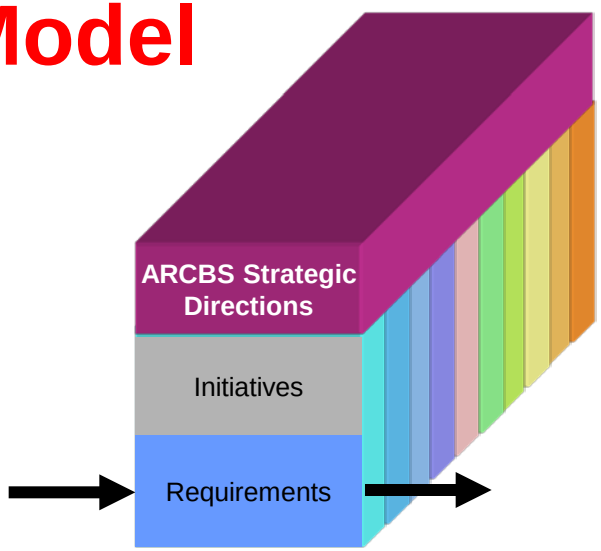
The ARCBS EA Model



CURRENT STATE MODEL



DRIVERS OF CHANGE

Gap Analysis

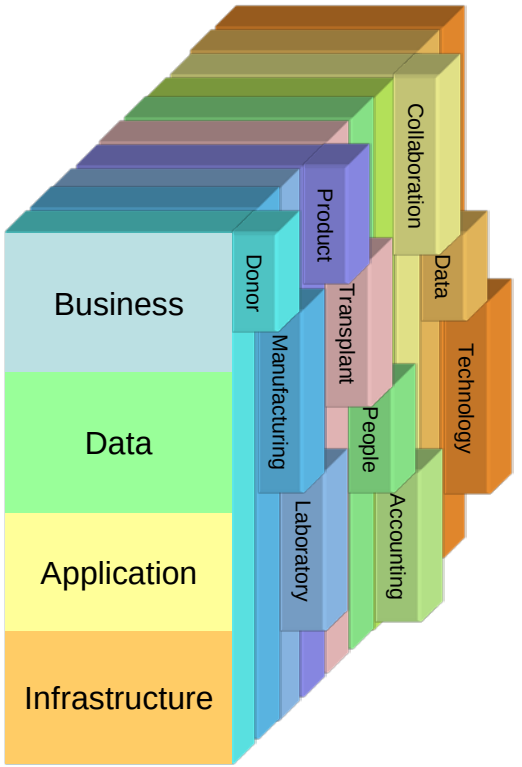
+

Technology Trends

=

IS Roadmap

DELIVERABLES



FUTURE STATE MODEL

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Conclusions

- In the space of 3 months:
  - We now have strategic visibility, even our Corporate Strategy & Planning Division is using SA for Programme Management
  - We are now aligned with our strategic initiatives, ie doing what is important for the organisation
  - We are now developing our long term view, ie high level future state EA Model
- EA is a way of behaviour
- And this is all happening whilst our Baseline EA Model is being defined and populated