TOGAF in practice

gmcclelland@cfos.com.au
The IT Challenge

- The IT environment must support distributed information systems of unlimited size and complexity.
- This requires an IT infrastructure that provides transparent communication, security, scaling, software portability, manageability, and international operation.
- IT users cannot continually invest in new technologies to keep up with infrastructure requirements: they require stable, open systems that can easily grow and evolve.
- No single company can or should control the IT infrastructure.
Today’s Corporate IT Problems

• Growing use of IT - sheer scale of the problem.
• Growing complexity of IT infrastructure.
• Growing demands from business units for IT that provides competitive business advantage.
• Rationalizing existing technologies.
• Identifying solutions to link technologies together.
• Protecting investment in heritage technology.
• Developing a migration path to tomorrow’s technology.
Disparate Architectures
- a challenge for management

- Stand alone projects which empowered the business but which now represent islands of functionality which must be integrated
- Customer Relationship Management (CRM) applications and Data Warehouses requiring access to multiple systems in near real time
- Intranet, extranet and Internet oriented eCommerce applications requiring tight integration with your existing heritage systems
- Widely varying views on the way forward; from your information systems staff, your IT vendors, your consultants and your business units.
TOGAF - an architectural framework not an architecture

- Presents a set of:
  - services, standards, design concepts, components and configurations to guide the development of specific architectures

- Correct use of TOGAF should lead to:
  - the use of common principles, assumptions and terminology within your teams and across your systems architectures
  - the development of information systems with better integration and interoperability especially with respect to whole of enterprise issues such as directories, security and systems management
DFG Technical Architecture
Designing for the future
Agenda

• DFG—Introduction to the Company
• Why develop an Architecture?
• DFG TA Development Process
• DFG TA Structure
• What has changed in the last 3 years?
Dairy Farm—Mission

*To be the Leading Food and Drugstore Retailer in the Asia Pacific Region in terms of sales and long-term shareholder value creation.*
The Dairy Farm Group (as at 31 Dec 2000)

- Operated 2,200 outlets, principally supermarkets, hypermarkets, convenience stores and drugstores
- Employed some 79,000 people in nine territories and had sales of US$6.6 billion in 2000
- Operates under well-known local brands, including:
  - Supermarkets - Wellcome in Hong Kong and Taiwan, Franklins in Australia, Woolworths in New Zealand, Cold Storage in Singapore, Giant in Malaysia, Hero in Indonesia, and Foodworld in India;
  - Hypermarkets - Giant in Malaysia and Singapore
  - Drugstores - Mannings in Hong Kong, Guardian in Singapore, Malaysia and Indonesia, and Health and Glow in India; and
  - Convenience stores - 7-Eleven in Hong Kong, Mainland China and Singapore.
Dairy Farm—the company

- New CEO (Ronald J. Floto, ex Kmart) appointed June 1997
- Significant changes took place
  - Moved from a federation of companies to a Group
  - Created centres of excellence to leverage competencies across the group
DFI Business Evolution

**OLD**
- De-centralised
- Federation
- Retailer push
- Large inventories
- Manual processes
- Buying / Selling
- Mass consumers

**NEW**
- Group
- Cohesion
- Customer pull
- Just in time
- Automatic processes
- Category Management
- Individual customers
Architecture development rationale

- Competition from US/European retailers—requires rapid response
- Historic under-investment in IT. Now a one time chance to ‘get it right’
- Facilitate migration from Federation to Group (i.e. Regional Hubs, Central buying etc.)
- Business moving so fast, BU IT can’t catch up
- Need to minimise large $$$ risk
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Technology/Business Cycle Times

- Business Process Change
  - 1980: 7 yrs
  - 1990: 3 yrs
  - 1998: 6-18mths
- Technology Life Cycle
  - 1980: 5 yrs
  - 1990: 3 yrs
  - 1998: 2 yrs

Source: Meta Group
Vertical Business Processes

Source: Meta Group
Value Chains

Source: Meta Group
The Changing Nature of IT

1960–1980
- Centralised Computing
- Mainframe Systems
- Back-Office Applications
- Data processing
- Management Information Systems
- Consolidated IT Management

1981–1995
- Decentralised Computing
- Midrange/Server Systems
- Client/Server Applications
- PC/NOS
- Distributed computing
- Distributed IT Management

1996–2002
- Dispersed, Network Computing
- Mobile, End-User Systems
- Web-based Applications
- Electronic Commerce
- Business-Centric Computing
- Embedded IT Management

E = Enterprise Domain
T = Technology Domain
B = Business Domain (Functions/BU)

Source: GartnerGroup
IT Staff Negative Price Performance

Source: Meta Group
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Charter

To conceive, design, populate, publish and continually improve a Technical Architecture for the Dairy Farm Group
Technical Architecture Program Group

Membership

- DFG Technical Architects
- Industry Consortia Consultants
- DFG Vendors

Mike Aikins
Shawn Davies
Paul Hickey
Ronald Fons
Paul King
Frank May
Geoff McClelland
Nick Price
Tim Redhead
Policy formation

The DFG IT policy is captured and interpreted within the Technical Architecture by the TAPG through a formal bi-monthly review of the document. TAPG updates and publishes the Technical Architecture Document every six months.

Strategic direction & Policy adoption

The Strategic direction for IT policy comes from the DFG Operating Committee who meet monthly. The DGF IT Steering Committee that meets bi-monthly is responsible for policy adoption.

Policy review

The DFG IT policy is reviewed by the DFG Business Units, DFG’s Technical Partners and by the IT Council.
IM Governance

TECHNICAL ARCHITECTURE

BU Management

ClO

BU Management

Office of Enterprise II

Product Office

Relationship Manager

Relationship Manager

Office of Architecture, Standards and Methodology

Project Office

Requirements

Assessment

Specification

Design

Build

Test

Network Competency Centre

Data Management Competency Centre

Change Management Competency Centre

‘Exotics’ and New Technology (e.g. Multimedia)

Source: Gartner

End User

Infrastructure and Production Support

Network

Apps

Data

Systems

Training

Admin

Help Desk and Local/Peer Support

Tier 3 Support

Tier 2 Support

Tier 1 Support

Source: Gartner

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DFG Architectural Principles

- Customer Focus
- Infrastructure Investment
- Total Cost of Ownership
- Open Vendor Neutrality
- Innovation
- Single Systems Architecture
- Endorsed Architectures
- Reuse then Buy rather than Build
  - Build for Competitive Advantage,
  - Buy for Competitive Parity
- Core attributes
What is the DFG TA?

• A process not a document
• A business led technology plan
• A mechanism to ensure technology convergence (technologies, suppliers, system re-use etc.)
An expression of IT strategy embodied as a logically consistent set of principles that:

- Are derived from business requirements
- Guide engineering of IT systems across underlying component architectures
- Are understood and supported by senior management and LOB’s
- Take into account the full context in which the TA will be applied
- Enable rapid change in business processes and the applications that enable them

Source: Meta Group
DFG TA Purpose

1. To enable rapid change in DFG business processes and systems by providing a clear definition of:

- *DFG Endorsed technology standards*
- *Technologies and products for use within DFG*
- *Policies that govern the use of technology within DFG*
2. To present to planners and strategists within DFG and its technology partners a clear view of DFG technology strategy over a three-year time horizon
Three challenges to successful implementation:

- *Must be seen to be continually ‘actionable and affordable’*
- *Senior management must understand how the TA enables the business to achieve its objectives*
- *Design decisions must be demonstrated to link to DFG business requirements*
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The DFG Technical Architecture Inputs

- DFG Direction and Business Requirements
- Principles
- Current (de facto) Architectures
- Industry Technology Trends
- Technical Architecture
  - Applications
  - Hardware
  - Software
  - Communications
- Standards
- Investment Decisions
- Product Selection
Deployment Table - Data Management

- Avoid
- Use
- Emerging

**Group**
- **Netware Essbase**
  ORACLE Express Server V6.x

**Business Unit—Analytical**
- **Sybase Essbase**
  Informix, Redbrick, Business Objects, Pilot, Crystal
  ORACLE Express Server V6.x

**Business Unit—Operational**
- **Sybase**
  Informix, Adabas, IBM IMS
  ORACLE V8

**In-Store**
- DBASE IV, Cobol Files
- Microsoft SQL Server V6.5

**Core Infrastructure Services**
- Microsoft SQL Server V6.5

- **AVOID**
  - Heritage
  - Reference
  - If necessary
Scope of the DFG TA
Business Process Domains

TECHNICAL ARCHITECTURE

GROUP
- Executive Information Systems
- File & Print
- Office Automation
- Directories (DNS, DHCP, Email, LDAP)
- Enterprise Application Integration (EAI)

Analytical
- Data Warehouse
- Data Marts
- Analytical Applications

Operational
- Financial
- Human Resource
- Merchandising
- Warehouse

Business Unit
- POS
- EFT
- In-Store Merchandising
- Labour Scheduling
- Time & Attendance
- Loyalty

In-Store
- POS
- EFT
- In-Store Merchandising
- Labour Scheduling
- Time & Attendance
- Loyalty

High Availability

Very High Availability

Disaster Recovery

CORE INFRASTRUCTURE SERVICES
- Network
- System
- Application
- Management
- Security
- Time

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Application Logical Partitioning for E-RETAIL

TECHNICAL ARCHITECTURE

User Interface Layer
- Presentation Services
- Access or Control Mechanisms

Application Layer
- Applications

Data & Transaction Layer
- System Interconnection
- Remote Application Services
- Data Access

Browser -> SSL / HTTP -> Web Server -> Active X -> Application Services

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Application Physical Topology for E-RETAIL

TECHNICAL ARCHITECTURE

Standard Client
User Interface
Netscape or Microsoft IE3 Browser

Application Business Logic
Minor validation using JAVAscript

Infrastructure
SSL/HTTP
SMTP, MIME
IP

Any JAVA Capable Browser

Firewall

Application Services
Application Business Logic
E-RETAIL US Interactive/DE Inc.
Microsoft Site Server—Commerce Edition

Infrastructure
Microsoft MQ (Internal)
IBM MQ Series (External—Target)
Microsoft DCOM
IP
Microsoft NT Domain Security
Tivoli Network, Systems & Applications Management (Target)

IBM / AIX

Core Systems & DBMS
Data Management
Microsoft SQLServer

Application Business Logic
NIL

Infrastructure
Microsoft MQ (Internal)
IBM MQ Series (External—Target)
Microsoft DCOM
IP
Microsoft NT Domain Security
Tivoli Network, Systems & App. Management (Target)

Microsoft NT on IBM Netfinity

Microsoft NT on IBM Netfinity
Service Qualities: Security

Management, Audit & Control
- Policy
- Procedures
- Reporting
- Audit
- Administration

Functional Interface—Security API

Services
- Principal Authentication
- Access Control
- Confidentiality
- Integrity
- Non Repudiation

Mechanisms
- Passwords
- Tokens
- Smart Card
- Biometrics
- Access Control Information
- Engineering Mechanisms
- Encryption/Decryption
- Message Authentication
- Modification Detection
- Digital Signatures
DFG’s Business Process Approach
Management applied holistically to critical processes.

Traditional Approach
Management applied separately to technology domains.
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What has changed over the last three years since we started this process?

- Many of the IT people and the senior management team
- Business have been brought and sold
- The Asia meltdown has largely run its course
- The effects of the NASDAQ meltdown is still being felt
- Technological change has continued apace
- Supply chains have been reengineered but not as fast as many thought
- Several major planned initiatives couldn’t substantiate a business case
- We learnt that in Asia even with good corporate discounts, “one size doesn’t fit all”
- We still weren’t able to move as fast as we needed to
What has changed? – Cont’d

- To be more responsive to each marketplace, Dairy Farm is shifting back to more autonomy at a country level.
- The business and the IT have moved a lot closer together after some pretty rough moments.
- We have done a lot more on IT Governance and have much more control over IT spend.

The Technical Architecture V1.1 is still in use, the strategies are still being pursued and can genuinely thought to have largely stood the test of time.
Summary

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Questions & Answers