The Open Group Second Architecture

Practitioners' Conference

Developing Architecture Competencies for the Telecommunications Industry

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Introduction

- About ETIS, and me
- Developing Architecture Competencies for the Telecommunications Industry, the hi(story) so far. This means competence in an organisational sense as well as a personal skills.
- Elephants, Greek temples, Dinosaurs, Starships
-
- English spoken here

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About ETIS






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» What is ETIS?

- ETIS is the platform for the interchange of information, experiences and professional networking at the heart of the Telecommunications industry.

» Mission

- The mission of ETIS is to enable telecommunications service providers to improve their business performance by using information technology effectively.

» ETIS Background

- A Dutch Stichting founded in June 1991 (non-profit)
- Vendor neutral, independent and impartial Membership based organization
- Activities include Working Groups, EU Projects & events

ETIS Members






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Bouygues Telecom · BTC · Cellcom סלקום · HT Hrvatski Telekom

CYTA · Czech Telecom · Deutsche Telekom · FINNET GROUP

kpn · Lattelekom Esam tuvāk · MALTACOM · antenna hungária

OTE · Slovak Telecom · Makedonski Telekomunikacii · Telekom Slovenije

Telecom Italia · TeliaSonera · P&T Luxembourg · Turkcell

telenor · Beeline · maláv

ETIS Associates & Partners

» Associates

COMARCH

SchlumbergerSema

META Group

Amdocs

Teradata

» Partners

ETSI

etno

ITU

OMG

THE Open GROUP

GEA

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ETIS Pillars of Activities

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ETIS

- Electronic Billing
- International Settlements
- TeBIT Study
- Information Security
- IT Application Survey
- Enterprise Architecture
- EU Projects
- Events & Conferences

The Global IT Association for Telecommunications

Sharing Knowledge is our Strength!

About me

- Senior Advisor and Project Director in ETIS, since its inception (1991)
- Facilitating the ETIS working group sharing experiences and best practice in IT Architecture since 2000/2001
- BT 27 years, senior IT Manager, O&M practitioner

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Elephants and Architectures

ANSI/IEEE

- *The fundamental organisation of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution*

» TOGAF

- *1. A formal description of a system, or a detailed plan of the system at component level to guide its implementation*
- *2 The structure of components, their interrelationships, and the principles and guidelines governing their design and evolution overtime.*

» ETIS Description

- *A stylised description or representation of a system with associated rules.*

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Architectures and their uses

Uses

- Put real things together better
- Model
- Improve ability to plan, manage, make decisions
- Reduce complexity
- Predict future behaviour (improve performance)
- Improve understanding, Discover
- Communicate

- Business Process Re-engineering - Holistic

The ETIS space in Architecture

- The developments in IT (and ICT) in recent years, and their wide application, together with changes in business organisation and practice have led to the need for better means and techniques of organising and planning the use of IT resources as well as business resources. One of these means is IT Architecture.
-
- The objective of the IT Architecture group is to seek to identify best practice in the development and use of IT Architectures in the business context of its members and to identify and define those building blocks within an IT Architecture for Telecoms which could be of importance.

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ETIS IT Architecture Governance model






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Business Strategy from Economic Environment & Technical Trends

Business architecture

Business roles

Business abilities

Processes

Business Requirements

Business req. on IT

Information-architecture

Conceptual information model

Logical information model

Objekt X
Attribut 1
Attribut n

Ownership

Application-architecture

Reference model

Architecture

Technology-architecture

IT Infrastructure/Standards

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Business Architecture






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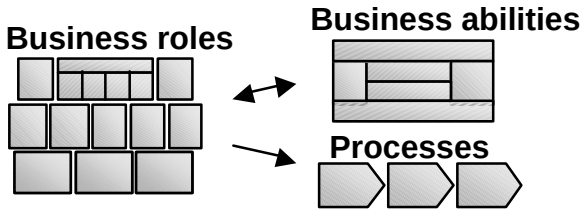
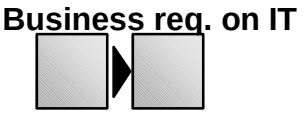
Business Roles:

- the way how to participate in a processes



Business abilities:

- the competences that are needed for the roles



Processes:

- sets of activities to achieve specific business objectives with identified owners

Business requirements on IT:

- business needs that should be translated into IT solutions

Information Architecture

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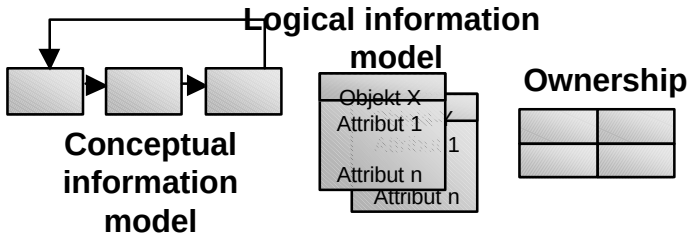
Conceptual information model:

- description of business information requirements & information flow in the processes
- with specific terminology & definitions



Logical information model:

- objects, attributes, relationships, methods
- with specific terminology & definitions

Ownership:

- conceptual & logical ownership, responsibilities, data ownership,
- ownership at each level, matrix

Application Architecture



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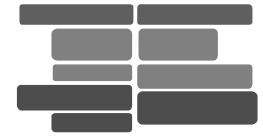
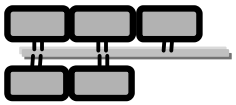
Reference model:

- Functional areas to be covered (f.e. SIM model)
- Visualisation & description
- Application portfolio
- „The City Plan“
- High level framework for the IT/IS Architecture



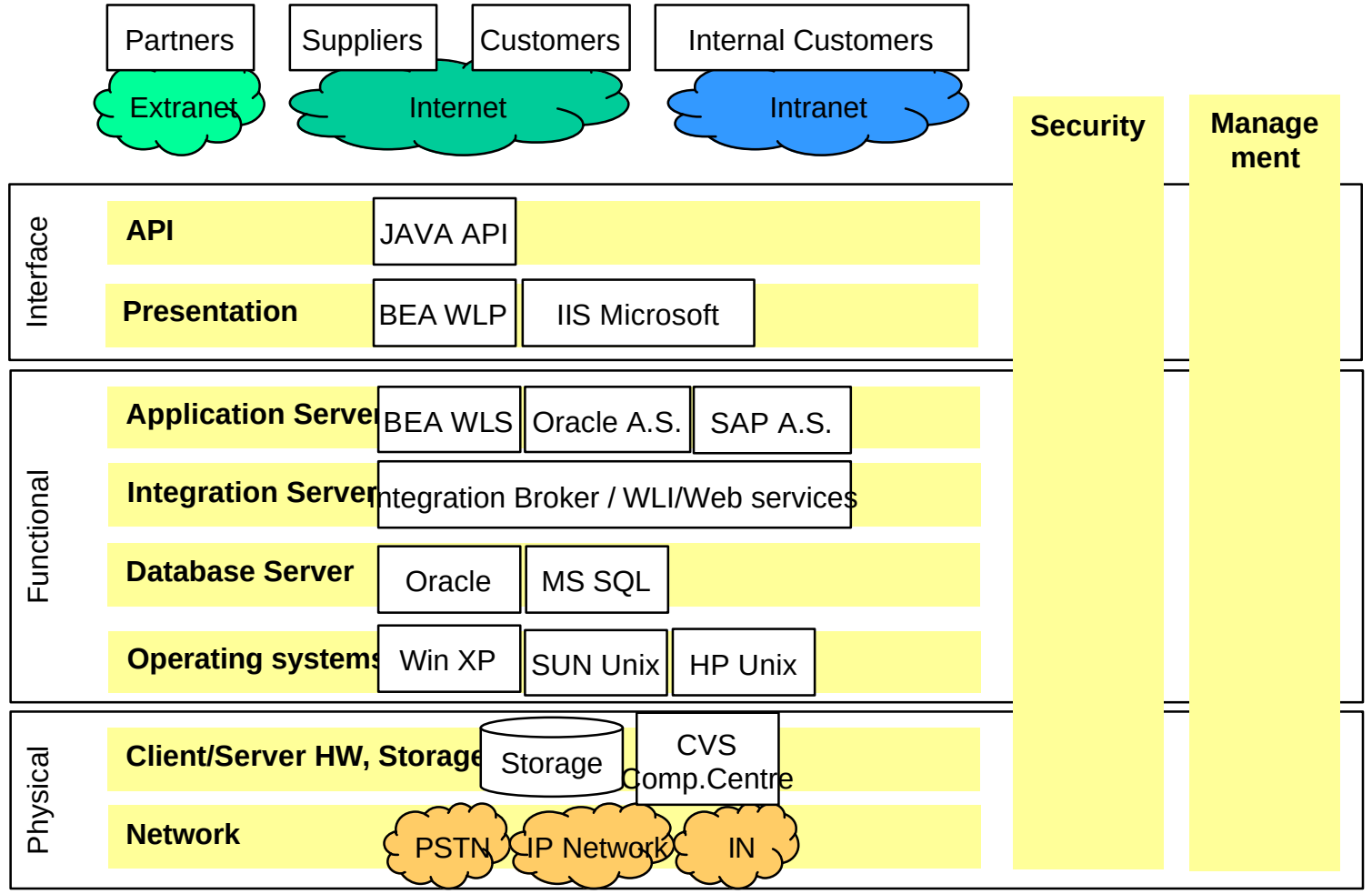


Architecture:

- Functional Architectures for specific areas/projects
- How the functional areas related to each other
- Single person responsible for the specific area who should be asked for

IT Architecture

IT Infrastructure/Standards: IT Environment, Security&Management roles



Dinosaur ……

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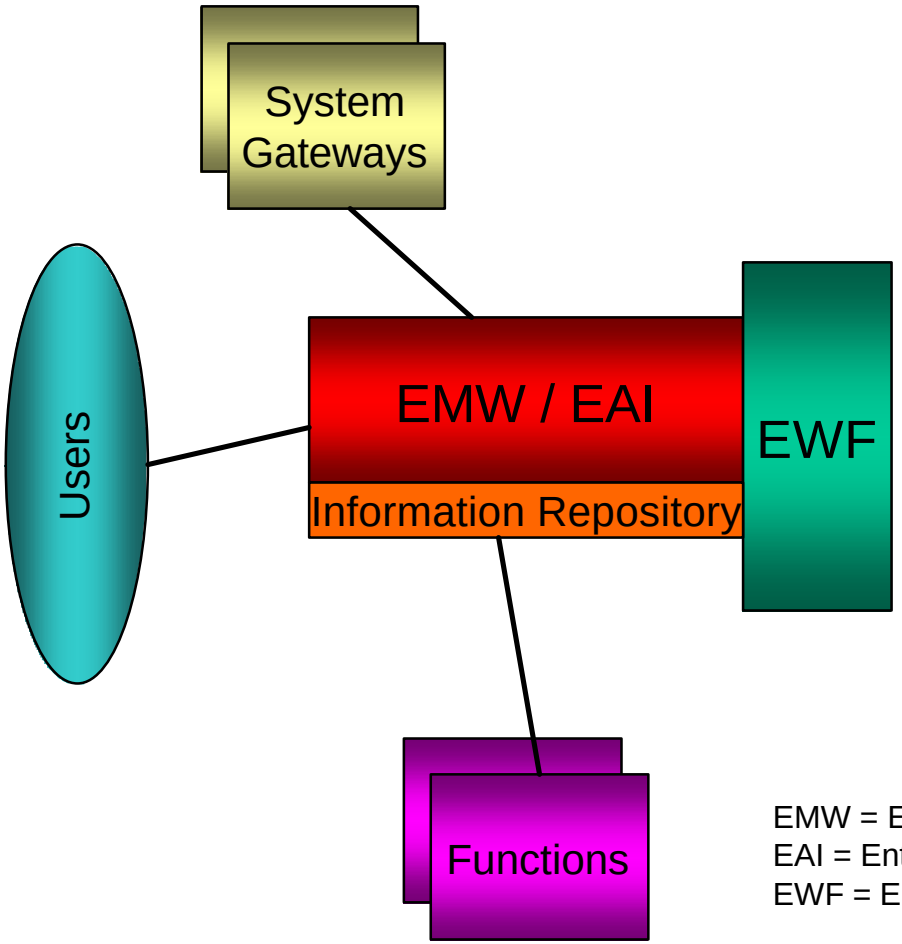
Starship…….



EMW = Enterprise MiddleWare
EAI = Enterprise Application Integration
EWF = Enterprise WorkFlow

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Some Organisations and their contributions

- Tina-C 1993
- Eurescom 1991
- TeleManagementForum 1988?
- Telcordia (Bellcore) 1984/1997
- ITU 1865
- ETSI 1988
- ETIS 1991

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Some Organisations and their contributions






- Tina-C
- **Principles of TINA**
- TINA is intended to be applied to all parts of telecommunications and information systems: for example, terminals (personal computers, etc.), transport servers (switching systems, routers, etc.), service servers (VoD, web, etc.) and management servers (authentication, billing, etc.). **Reference Points** are defined to specify conformance requirements for TINA products.
  The architecture is based on four principles.

  1) **Object-oriented analysis and design**,
  2) **distribution**,
  3) **decoupling** of software components,
  4) **separation** of concern.

Some Organisations and their contributions

- Tina-C
- Towards the end of 1996, the TINA Consortium entered a phase of **consolidating its results** with the goal of making TINA real in the shortest possible time. Major progress was seen in different areas, e.g., extension of the Service Architecture to new classes of services, consolidation of the Network Resource Architecture and adoption of many features of the DPE architecture by the industry. TINA-C has been interacting with standards bodies and industry consortia, including ATMF, DAVIC, ITU-T, TMF and OMG in order to achieve harmony of mutual specifications and avoid duplication of work.

Some Organisations and their contributions






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- Eurescom
  - **Eurescom - advancing innovation through collaboration**
- **Eurescom is the leading organisation for collaborative R&D in telecommunications. We provide efficient management of research projects and programmes for member companies and other clients. Companies who wish to collaborate on the key issues facing the telecoms industry are welcome to join the Eurescom community.**

Some Organisations and their contributions






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- **Study P1149**
- **What are the main objectives of this Study?**
- **The study undertakes investigations to identify the impact of the Model Driven Architecture for Telecommunication Operators with respect to the specifics of telecommunication systems. Techniques will be studied, that can be used to utilize the MDA in the telecommunication arena. Moreover, the study will try to propose an evolution path for how the MDA needs to be adapted or specialised in order to enable its efficient utilization in the telecommunication domain.**

Some Organisations and their contributions






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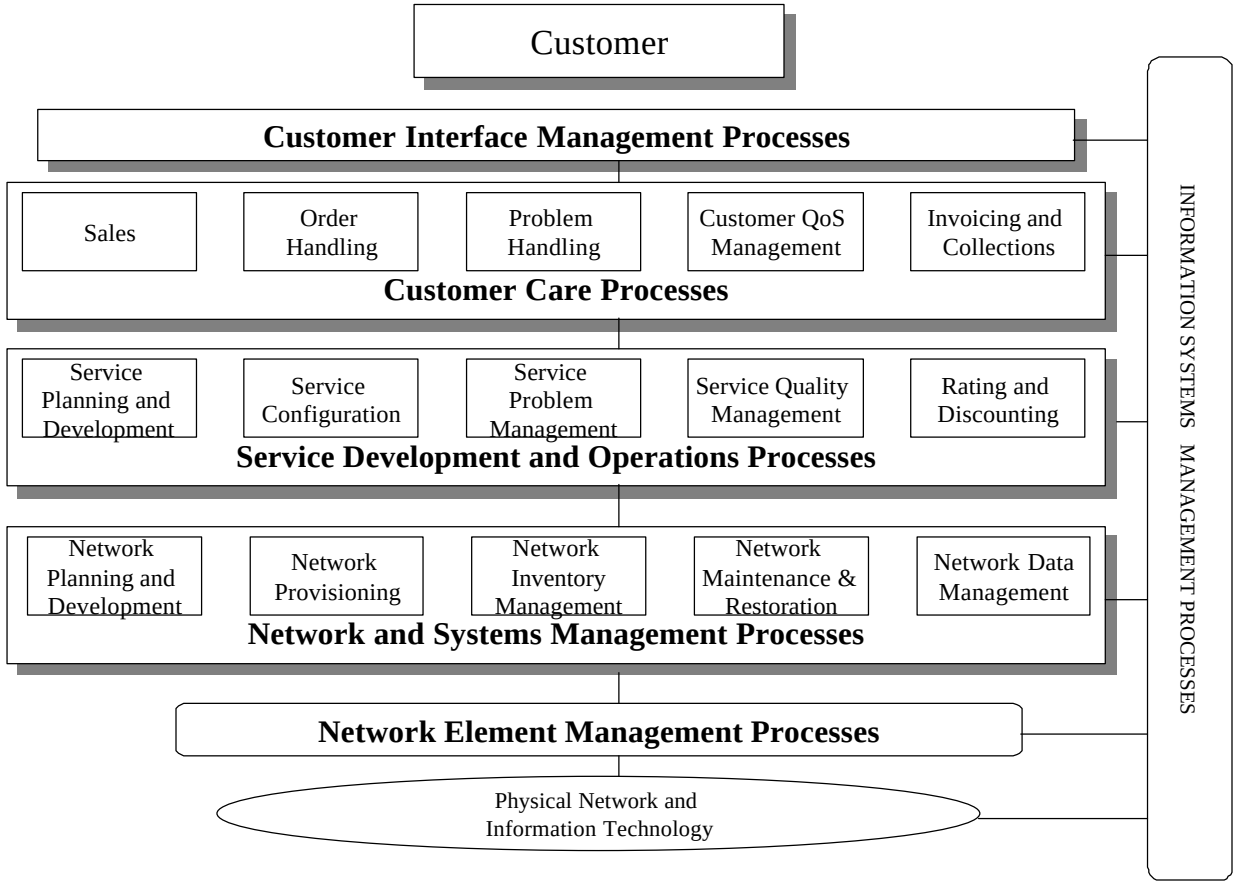
- TeleManagementForum
- The TeleManagement Forum (TM Forum) is a non-profit global organization that provides leadership, strategic guidance and practical solutions to improve the management and operation of information and communications services. Our open membership of over 340 companies comprises incumbent and new-entrant service providers, computing and network equipment suppliers, software solution suppliers and customers of communications services. TM Forum has been contributing to the Information and Communications Services (ICS) Industry for over 15 years.

TMForum Enhanced Telecommunications Operations Map ® eTOM



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Some Organisations and their contributions

- TeleManagementForum Shared Information Data Model - SID
- The SID, as the NGOSS information model, provides an information/data reference model and a common information/data vocabulary from a business as well as a systems perspective. (Future SID work will also provide implementation and deployment entities) Put another way, the SID provides a knowledge base that is used to describe the behavior and structure of business entities as well as their collaborations/interactions. The SID uses UML to formalize the expression of the needs of a particular view: Business, System, Implementation or Deployment.

Some Organisations and their contributions






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- ETSI
- The European Telecommunications Standards Institute (ETSI) is an independent, non-profit organization, whose mission is to produce telecommunications standards for today and for the future.
- Based in Sophia-Antipolis in the south of France, ETSI unites 688 members from 55 countries, and brings together manufacturers, network operators and service providers, administrations, research bodies and users - providing a forum in which all key players can contribute.

  ETSI's Members determine the Institute's work programme, allocate resources and approve its deliverables. As a result, ETSI's activities are closely aligned with market needs and there is wide acceptance of its products.

  ETSI's standards are built on consensus.

Some Organisations and their contributions






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- ETSI
  - **The TIPHON™ accelerates**
- Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Functional entities, information flow and reference point definitions; Guidelines for application of TIPHON functional architecture to inter-domain services

- **Scope and Field of Application**
- The technical specification should clarify the application of the TIPHON functional architecture in order to support services over several administrative domains. For each service, the specification will elaborate on the services functional layer, identifying (not necessarily defining new ones) the required service functions, information flows and reference points between these service functions and other functional entities in the service control layer, IP transport plane, Management plane, and SCN plane as necessary

Some Organisations and their contributions






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» ITU

- *On 17 May 1865, after two and a half months of arduous negotiation, the first International Telegraph Convention was signed in Paris by the 20 founding members, and the* International Telegraph Union *(ITU) was established to facilitate subsequent amendments to this initial agreement.*
- *Following the patenting of the telephone in 1876 and the subsequent expansion of telephony, the International Telegraph Union began, in 1885, to draw up international legislation governing tele-phony. With the invention in 1896 of wireless telegraphy — the first type of radiocommunication — and the utilization of this new technique for maritime and other purposes, it was decided to convene a preliminary radio conference in 1903 to study the question of international regulations for radiotelegraph communications.*
- *The first International Radiotelegraph Conference held in 1906 in Berlin signed the first International Radiotelegraph Convention, and the annex to this Convention contained the first regulations governing wireless telegraphy. These regulations, which have since been expanded and revised by numerous radio conferences, are now known as the* Radio Regulations*.*
- *The year 1920 saw the beginning of sound broadcasting at the improvised studios of the Marconi Company, and in 1927, the International Radio Consultative Committee (CCIR) was established at a conference held in Washington D.C. The International Telephone Consultative Committee (CCIF, set up in 1924), the International Telegraph Consultative Committee (CCIT, set up in 1925), and the CCIR were made responsible for coordinating the technical studies, tests and measurements being carried out in the various fields of telecommunications, as well as for drawing up international standards.*
- *At the 1932 Madrid Conference, the Union decided to combine the* International Telegraph Convention *of 1865 and the* International Radiotelegraph Convention *of 1906 to form the* International Telecommunication Convention. *It was also decided to change the name of the Union to* International Telecommunication Union.

Some Organisations and their contributions






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- Information technology - Open Document Architecture (ODA) and interchange format: Introduction and general principles
- T.412 (03/93) Information technology - Open Document Architecture (ODA) and interchange format: Document structures
- X.460 (04/95) Information technology - Message Handling Systems (MHS) Management: Model and architecture
- X.703 (10/97) Information technology - Open Distributed Management Architecture
- X.703 (1997) Amendment 1 (06/98) Support using Common Object Request Broker Architecture (CORBA)
- X.800 (03/91) Security architecture for Open Systems Interconnection for CCITT applications
- X.805 (10/03) Security architecture for systems providing end-to-end communications
- X.903 (11/95) Information technology - Open distributed processing - Reference Model: Architecture
- Y.110 (06/98) Global Information Infrastructure principles and framework architecture
- Y.1231 (11/00) IP Access Network Architecture

Some Organisations and their contributions






- ISO
- CEN/ISSS

- TOG
-
- Zachman

- BCS
- NCC
- CCTA
- COBIT

CORBA
TMN
OMG

META
GARTNER

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Building Blocks & Tools

- RosettaNet (Framework) (Supply Chain)
- Supplier Data Models

- Metis
- Rational Rose
- Popkin

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Architecture ☹
Politics and Finance

- Governance
- Lines of Business
- Linking Strategy and IT
- Return on Investment
  - *Simple ROI shortsighted and restricted*
  - *Holistic view needed*
  - *Direct valuation methods (Int. Asset Valuation Method n. Sullivan)*
  - *Market capitalization method - Tobin*
  - *ROA based method – Stewart*
  - *Score Card-method*
  - *KPIs*

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Architecture ☹
Politics and Finance

- Architects must market and sell architecture
- Architects must talk like businessmen
- Use Consultants
- Architecture a constant process
- Architecture use and application depends on Board support and involvement

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Conclusions and Summary

- An increasing recognition of architecture as a competence and an essential management weapon.
- Architecture as a tool and as a discipline is well recognised in Telecoms by practitioners in networking, IT, Business Architects. It is less well accepted by LOB and by Boards in general.

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Conclusions and Summary

- There is a large, rich, and growing body of expertise and knowledge, fostered by individuals (evangelists), user organisations, commercial organisations. Sometimes it overlaps.
- Companies which use Architectural principles, and sound Business practice can go like stink = improve their performance enormously.

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