SOA, API and ESB Primer (and more...)

or

Acronym Bingo!

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Introduction
Terminology
Software Architecture

Presentation Layer
User interface represents the interaction between applications and the user logic.

Business Processes Layer
Business value chain & Process Modeling

Business Domains Layer
Classification of services, facilitates communication and discovery among business and implementation.

Services Layer
Services that expose the functionality of business applications.

Integration and Data Management Layer
Integration needs and data management.

Functional Applications Layer
Functional applications. Represents the basic systems.

Infrastructure Layer(**)
Products and technology implemented to support the other layers.
Service Oriented Architecture (SOA)

Figure 1: The Basics of SOA
Enterprise Service Bus (ESB)

Turn this ....

Service  Service  Service
Interface  Interface  Interface
Interface  Interface  Interface
Service  Service  Service

.... into this.

Service  Service  Service  Service

RESULT

Greater business responsiveness, reduced costs
Business Process Management (BPM)

Process Map
Micro Services Architecture (MSA)
Application Programming Interface (API)

The evolution of APIs

The idea behind APIs has existed since the beginning of computing; however in the last 10 years, they have grown significantly not only in number, but also in sophistication. They are increasingly scalable, monetized, and ubiquitous, with more than 12,000 listed on ProgrammableWeb, which manages a global API directory.*

1960–1980
Basic interoperability enables the first programmatic exchanges of information. Simple interconnect between network protocols. Sessions established to exchange information.

TECHNIQUES
ARPANET, ATTP, and TCP sessions.

1980–1990
Creation of interfaces with function and logic. Information is shared in meaningful ways. Object brokers, procedure calls, and program calls allow remote interaction across a network.

TECHNIQUES
Point-to-point interfaces, screen scraping, RFCs, and EDI.

1990–2000
New platforms enhance exchanges through middleware. Interfaces begin to be defined as services. Tools manage the sophistication and reliability of messaging.

TECHNIQUES
Message-oriented middleware, enterprise service bus, and service-oriented architecture.

2000–today
Businesses build APIs to enable and accelerate new service development and offerings. API layers manage the OSS/BSS of integration.

TECHNIQUES
Integration as a service, RESTful services, API management, and cloud orchestration.

Representational State Transfer (REST)

REST Based Web Service

GET  PUT  POST  DELETE

Service 1  Service 2  Service 3
(Originally) Simple Object Access Protocol (SOAP)
Cloud
Infrastructure, Platform, Software as a Service (IaaS, PaaS, SaaS)
Virtualization
Futures
THANK YOU!