Other Enterprise Architecture Domains

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Focus of This Module

Cloud Computing

Big Data

Enterprise Social

Security Architecture

Cloud Technologies

Enterprises need the capability to experiment, innovate and be nimble to leverage opportunities and neutralize threats

Impetus is on solving business problems effectively, quickly and economically

Cloud technologies in various forms makes this a possibility for enterprises

Cloud Computing

It is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction

5 Essential Characteristics of Cloud

On-demand Self Service
Consumers should be able to unilaterally provision computing capabilities without human interaction with service provider

Broad Network Access
Computing capabilities are exposed on the network access and accessible through heterogeneous platforms

Resource Pooling
Provider's computing resources are pooled using a multi-tenant model

Rapid Elasticity
Resources can be elastically scaled up and down on demand

Measured Service
Cloud systems automatically monitor, control and optimize resource usage by leveraging a metering capability

Service Model

Deployment Model

Cloud Service Models

Software as a Service (SaaS)

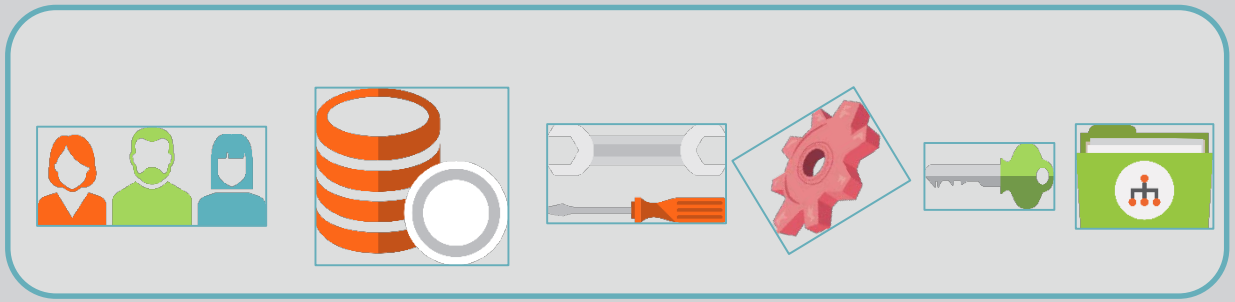
Platform as a Service (PaaS)

Infrastructure as a Service (SaaS)

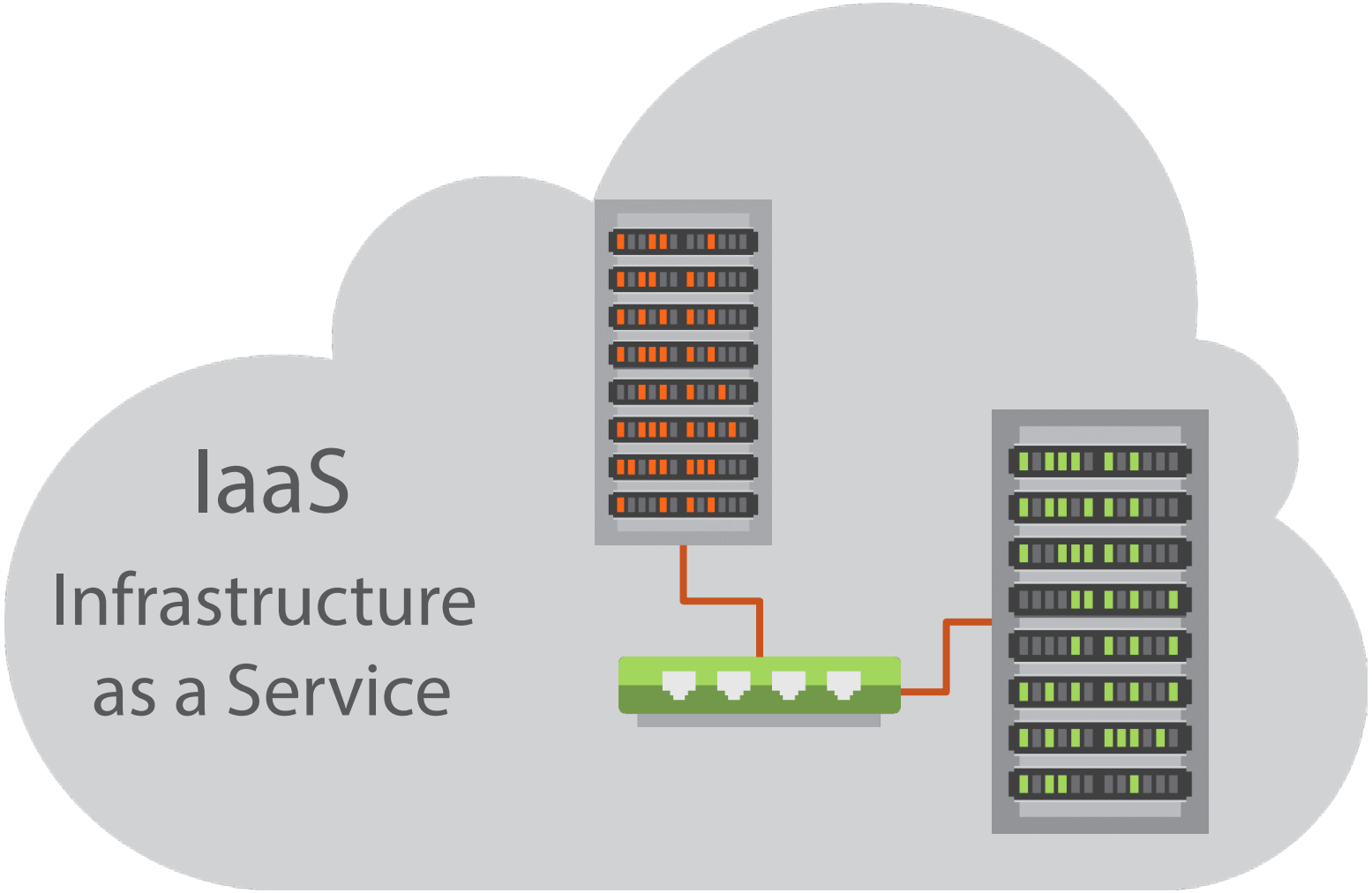
Service provider's applications run on a cloud infrastructure
Applications accessible from various client devices thin client or API
Consumer does not manage or control the underlying cloud infrastructure, platform or application capabilities

PaaS

Platform as a Service

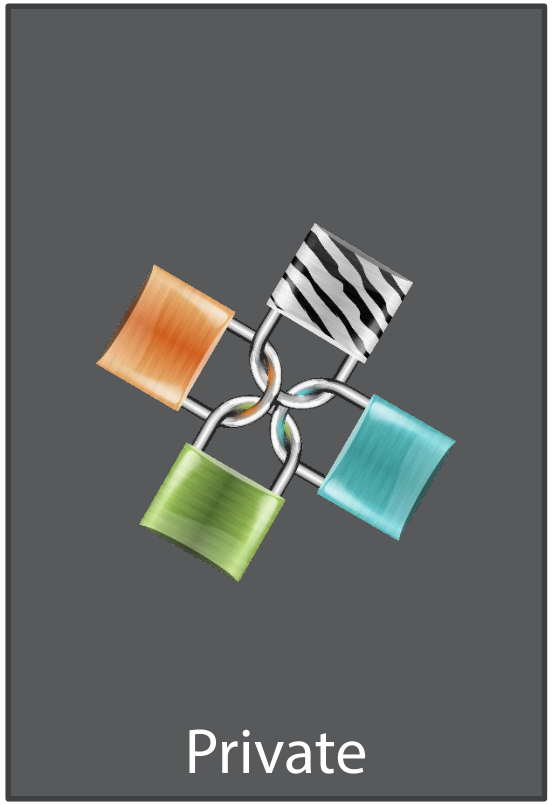


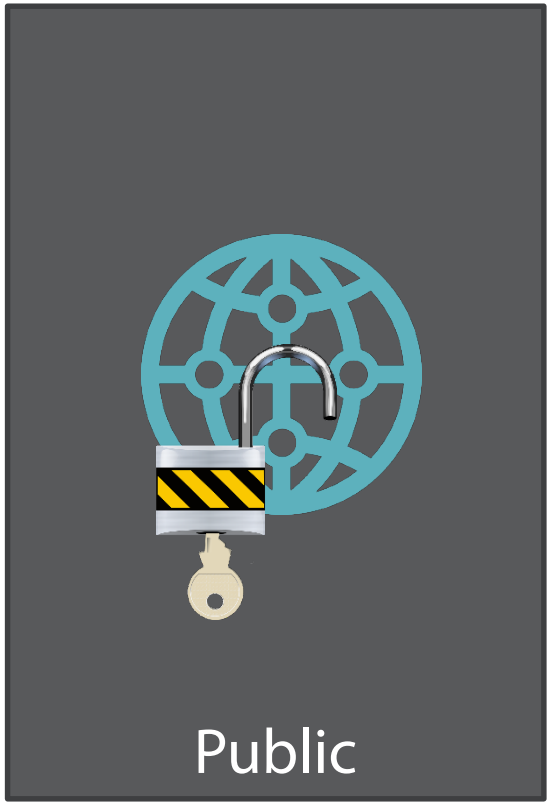
Customer applications can be deployed on cloud infrastructure
Consumer applications must use supported language, library, services etc.
Consumer does not control the underlying cloud platform, but controls deployed applications



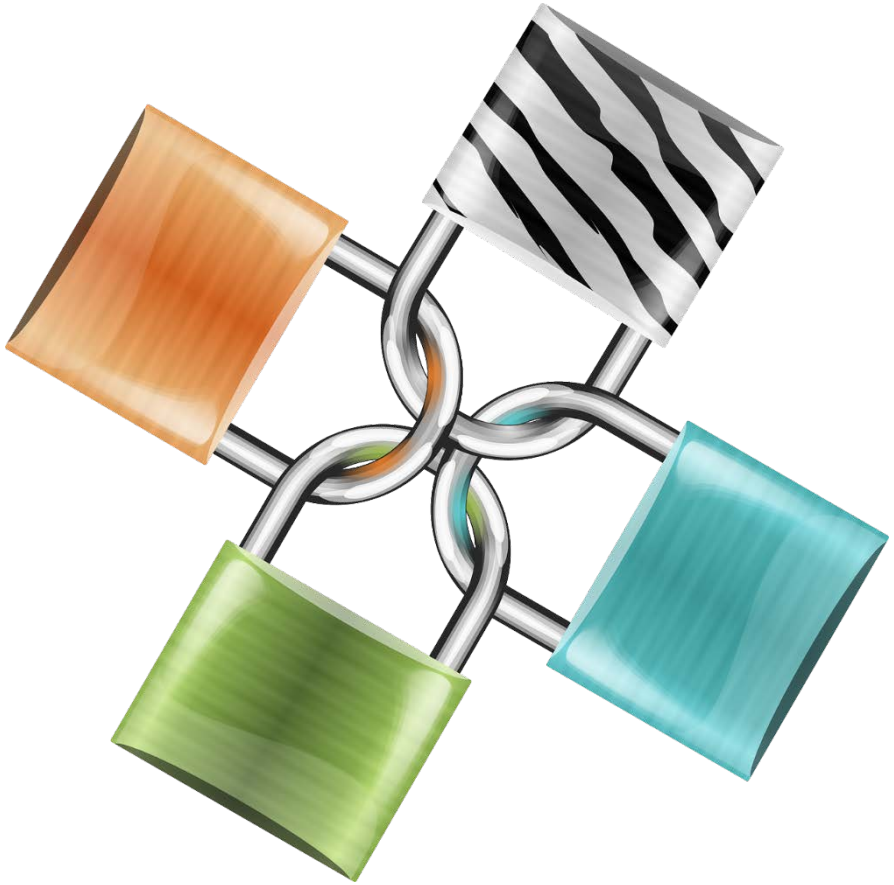
This model offers maximum control to the cloud consumers
Consumer is able to provision processing, storage, networks etc.
Consumers can also deploy and run arbitrary software on their allocated infrastructure
Consumers controls the OS, storage, applications and some networking components

Cloud Deployment Models





Private Cloud

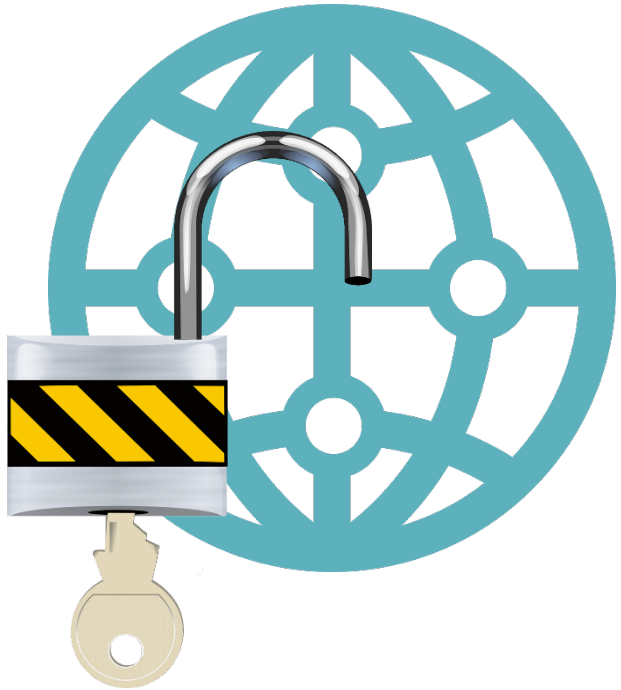


The cloud infrastructure is provisioned for exclusive use by a single organization
It can be owned, managed or operated by the organization themselves and/or a third party
The cloud infrastructure can be located on premise or off-premise

Community Cloud

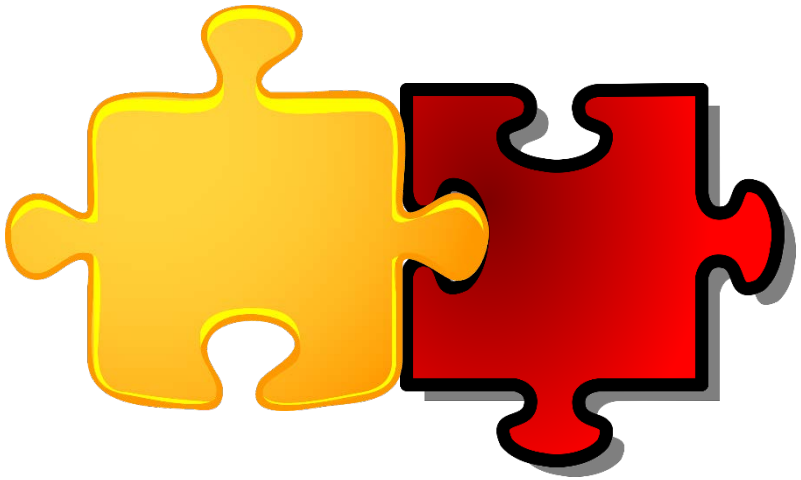
The cloud infrastructure is shared by a community or a collective of organizations
A secure cloud infrastructure built exclusively for and shared by a collective of government agencies is a good example

Public Cloud



Public cloud refers to a cloud infrastructure that is provisioned for use by general public

Hybrid Cloud



Hybrid cloud refers to some combination of two or more of the private, public and community cloud infrastructure

EA & Enterprise Cloud Strategy

EA takes a holistic and strategic view of enterprise's needs and opportunities

EA can aid in road mapping the enterprise's cloud adoption journey

Early cloud initiatives tend to be opportunistic

Point solutions from early adoption efforts need to be harmonized through an enterprise cloud strategy

Big Data

Some Interesting Case Studies

Three Vs of Big Data

Volume | Velocity | Variety

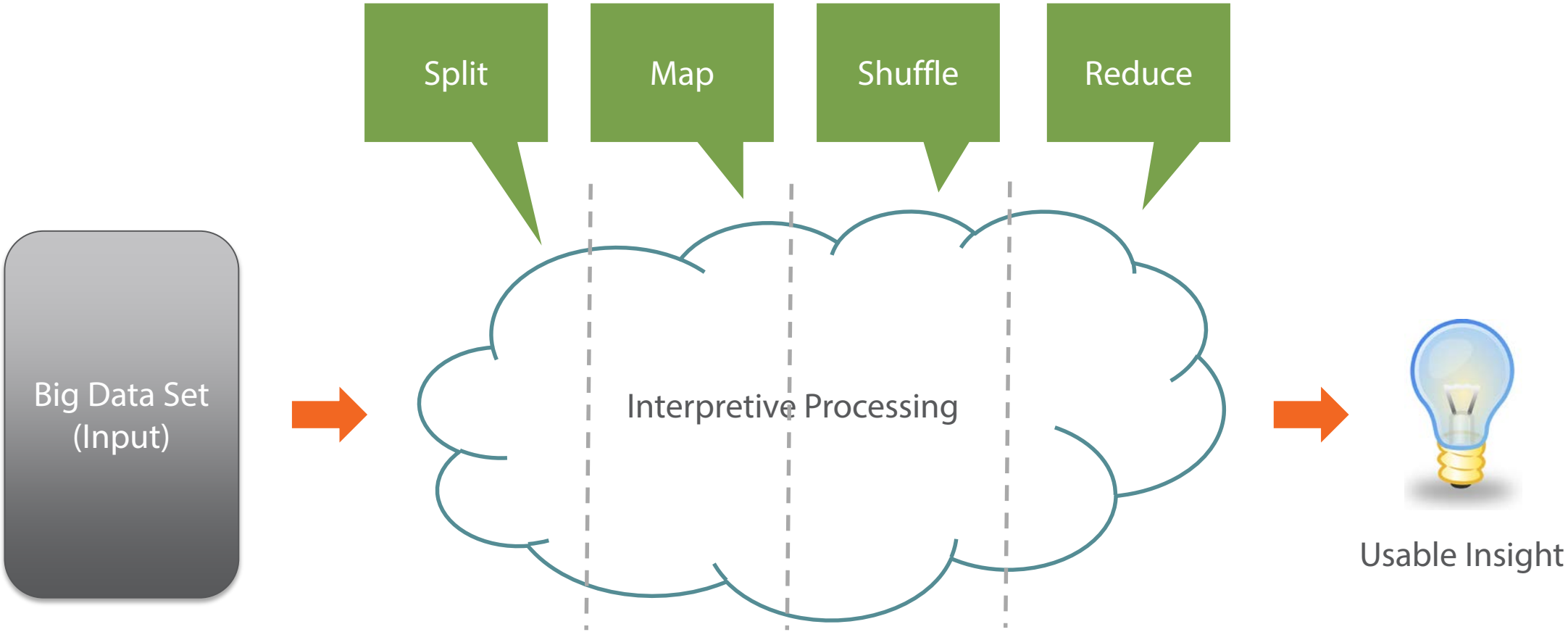
The term big data refers to the nature of data set as well as to the interpretive process used to churn through it

Through this process hidden trends, patterns and links are revealed through careful analysis

Traditional data warehousing tools are considered inadequate for this kind of analysis

Big Data Platform/ Vendors

Map / Reduce



Key Role

Data Scientist having deep computing background combined with expertise in mathematical and statistical analysis of data as well as expertise in an industry/ domain

Big data disrupts traditional Enterprise Information Architecture (EIA)

Transitioning from an initiative based focused on data warehousing to data pooling

EA has a major role to maximize business opportunities afforded by big data

Enterprise Architects are best placed to influence a data-savvy business strategy that exploits big data

Enterprise Social Technologies

Collaboration tools

Activity streams

Workspaces

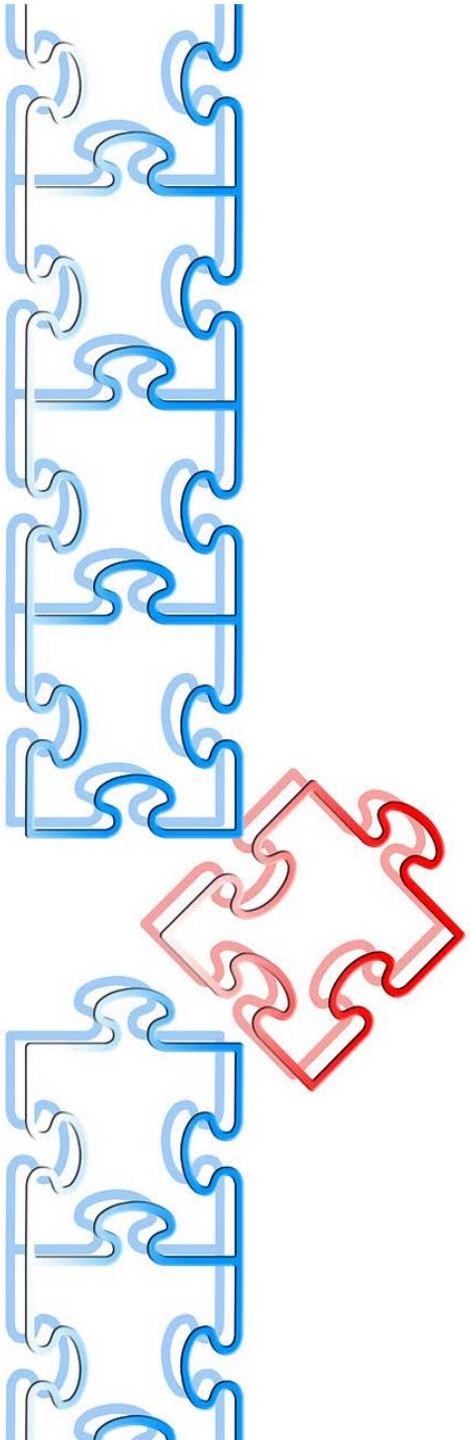
Community tools

Social listening tools

Social advocacy tools

Social dashboards

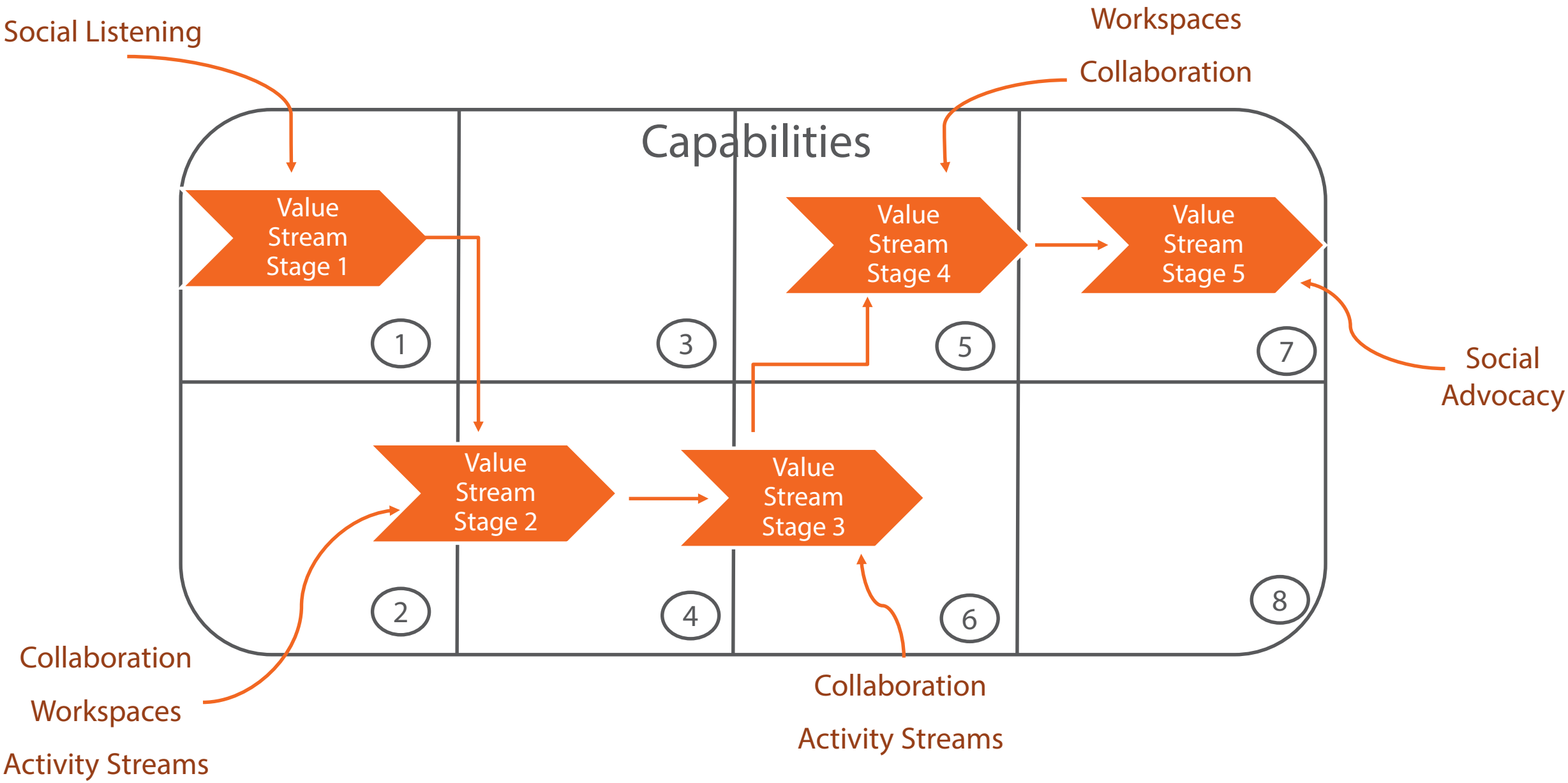
Social intelligence mining tools



Social enterprise applications typically get deployed as point solutions tackling local problems

These technologies tend to gain un-equal uptake across the enterprise thus not realizing their potential

Enterprise architecture is well positioned to
Take an integrated and holistic view of the enterprise's need for social technologies
Strategize, prioritize and create an enterprise social roadmap

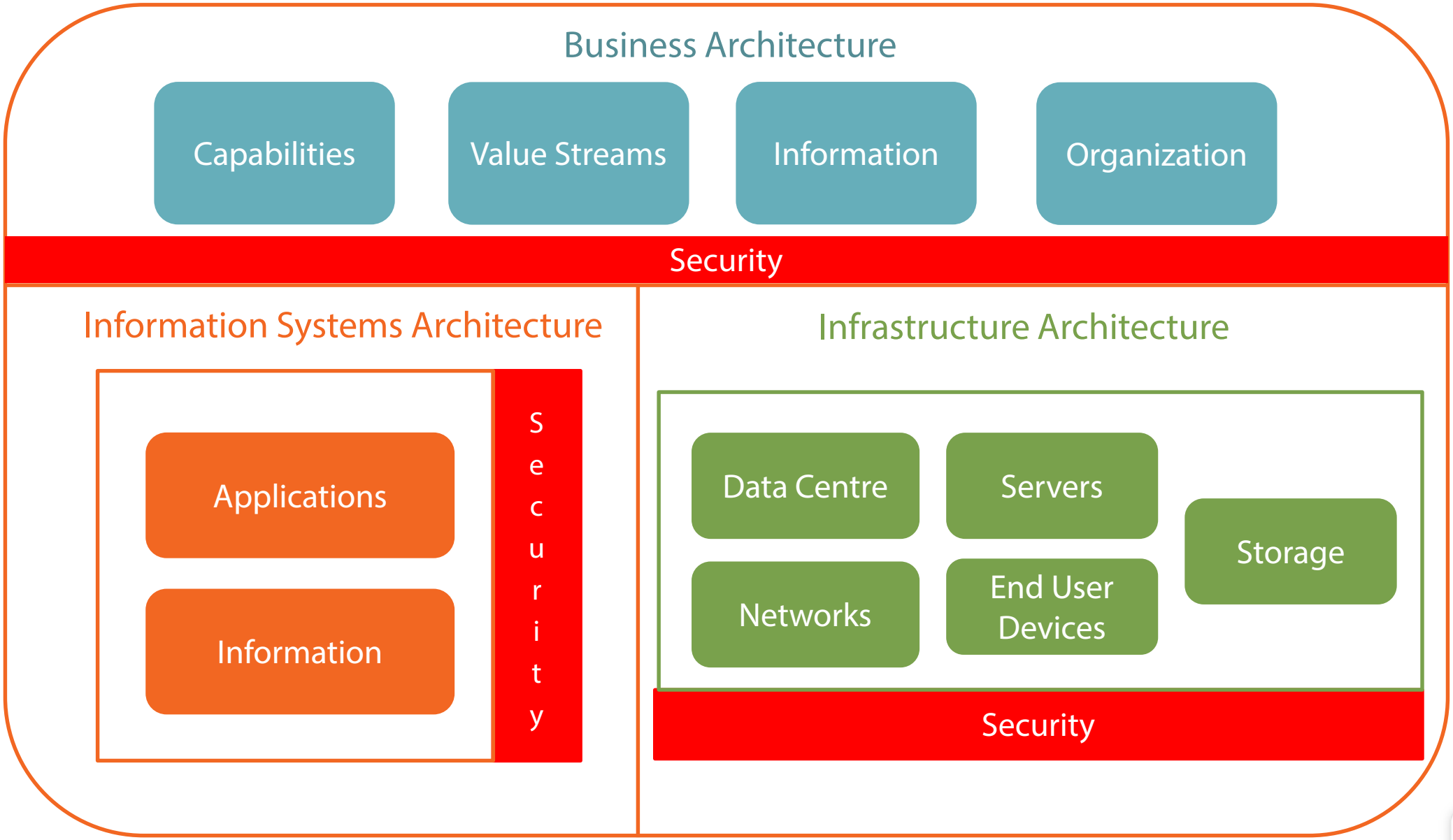


Obtaining a holistic view of enterprise social needs

Enterprise Social Products/ Vendors

Security Architecture

Enterprise Information Security Architecture



Goals of Security Architecture

Protect enterprise systems and information assets from,

Tampering

Destruction

Unauthorized Access

And to ensure,

Business Continuity

Recovery

Security architecture takes a concerted approach to protecting enterprise core assets

Seven Security Attributes

Accountability

Authentication

Access Control

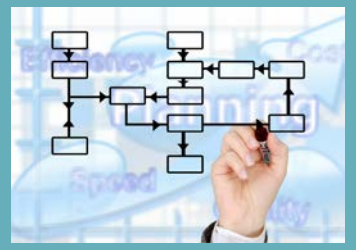
Availability

Confidentiality

Integrity

Safety

Security Enforcement Mechanisms



Planning

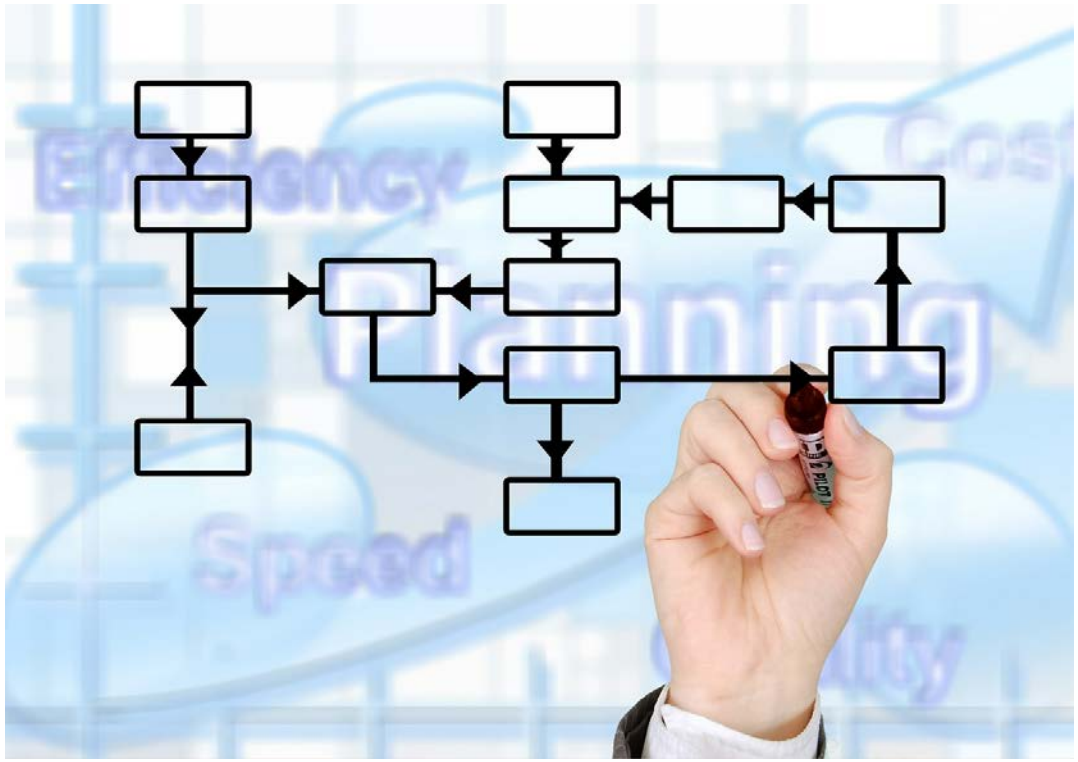
Prevention

Detection

Diligence

Response

Planning



All forward looking functions that are aimed at proactively securing enterprise assets

This typically involves:

Knowing which business assets need to be protected

Knowing what business drivers need to be enabled

Identifying and prioritizing threats

Identifying countermeasures

Identifying inter-relationships

Prevention

Refers to preventative mechanisms that protect the security attributes of the enterprise

For Example:

- Swipe-card access control systems
- Security personnel
- Network firewalls
- Other perimeter defence systems

Detection

Refers to security surveillance, monitoring, threat and attack detection and identification mechanisms

For Example:

Fire and smoke detection systems
Motion detection systems
Security cameras
Network intrusion detection systems etc.

Response

Refers to the ability to take quick and effective action in the event of a security breach or compromise

This might include:

Enforcing isolation/ lock-down mode to contain and eradicate attacks

Ability to activate disaster recovery mechanisms

Forensics leading to enforcing strategic and tactical measures

Engaging effectively with law enforcement agencies

Diligence

Refers to proactive measures taken to continuously improve security architecture, such as by

Performing continuous vulnerability assessments

Reviews of internal and external processes

Procedures and threat re-classifications

The intent is to continuously evolve the enterprise's security stance

Security architecture enables enterprises to take a holistic perspective on the security needs of the organization

Security architecture frameworks provide a structured way of thinking about enterprise security

Popular among these include

SABSA (Sherwood Applied Business Security Architecture)

ISO 27001

Open Security Architecture

COBIT

ITIL V3

NIST 800-53 etc.

This Module Covered …

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