IBM yazılım zirvesi '10

KAOSTAN FIRSATA

SOA Dönüşüm Projesi
Türkiye İş Bankası BT Mimari ve Güvenlik Bölümü

Lütfü Ulusoy - Uygulama ve Servis Mimarı, Proje Yöneticisi
(lutfu.ulusoy@isbank.com.tr)

Burak Arık - Uygulama ve Servis Mimarı, Mimari Danışman
(burak.arik@softtech.com.tr)

Agenda

- Introduction
- Business Drivers for Transformation
- Technical Enterprise Architecture
  - Integration Architecture
  - Core Services (Service Development Framework)
- Cash Deposit/Withdrawal Project
- Business Activity Monitoring
- Architectural Governance
- Lessons Learned

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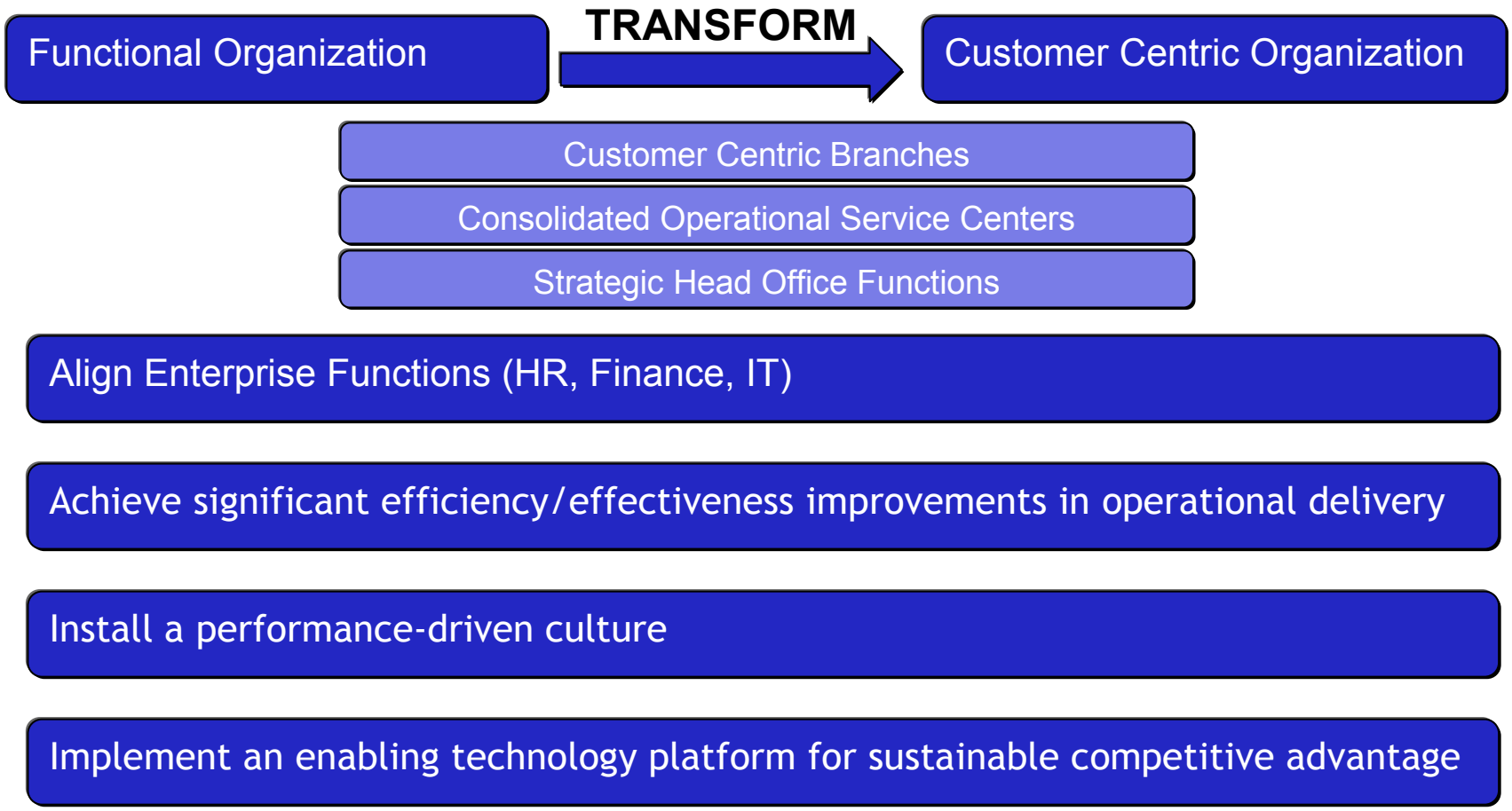
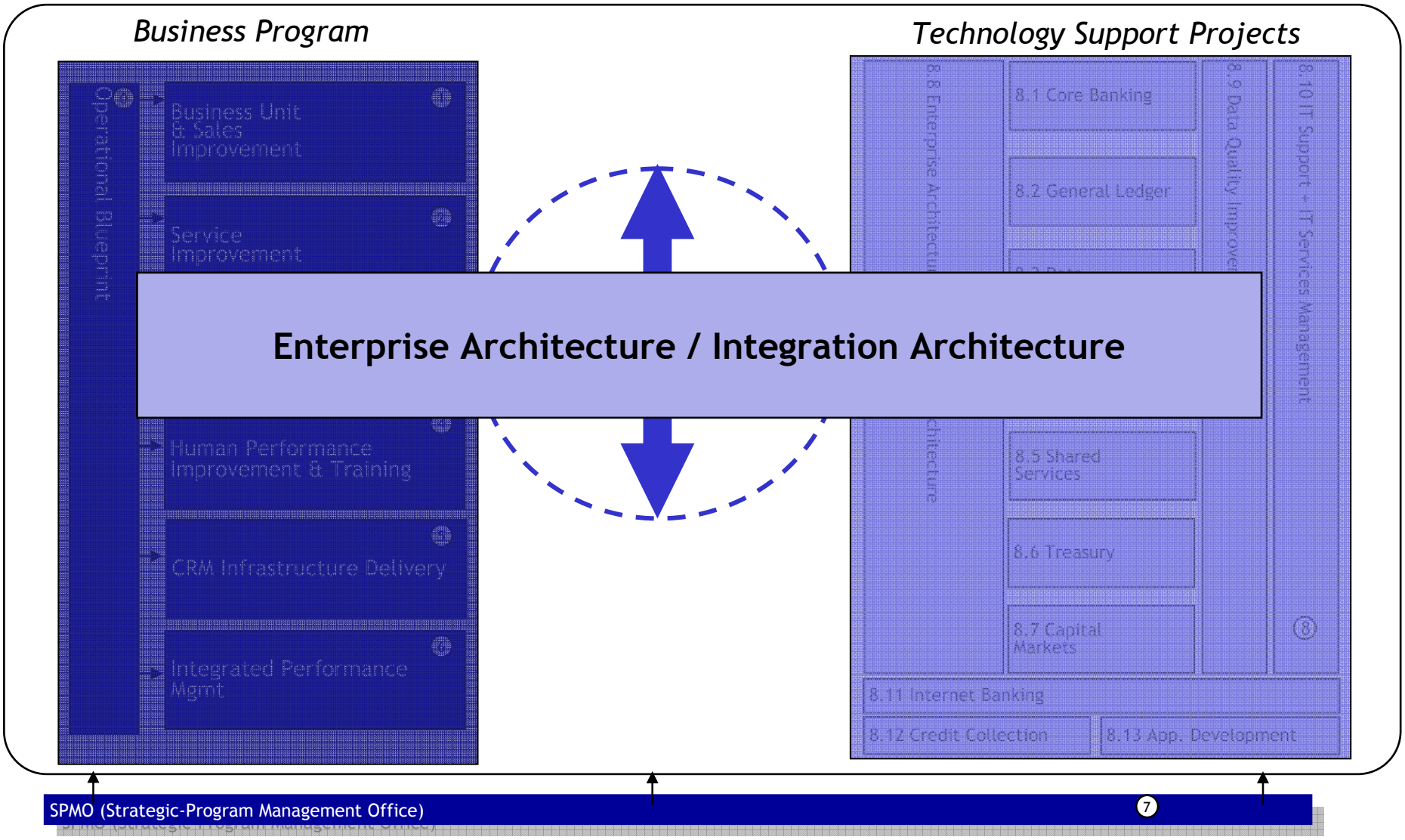
Overall Business Goals



MOD Program Overview



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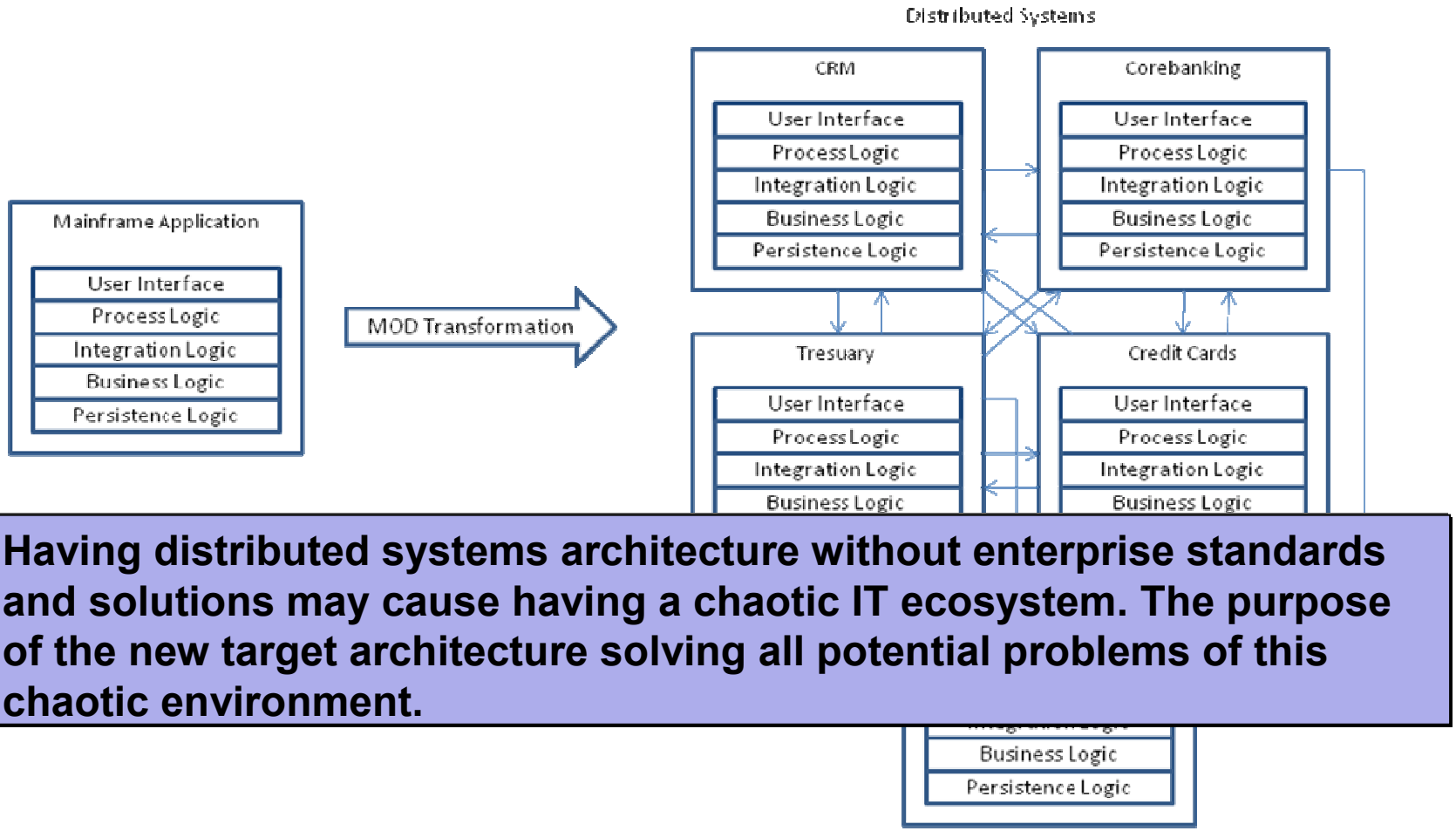
Technical Enterprise Architecture



Having distributed systems architecture without enterprise standards and solutions may cause having a chaotic IT ecosystem. The purpose of the new target architecture solving all potential problems of this chaotic environment.

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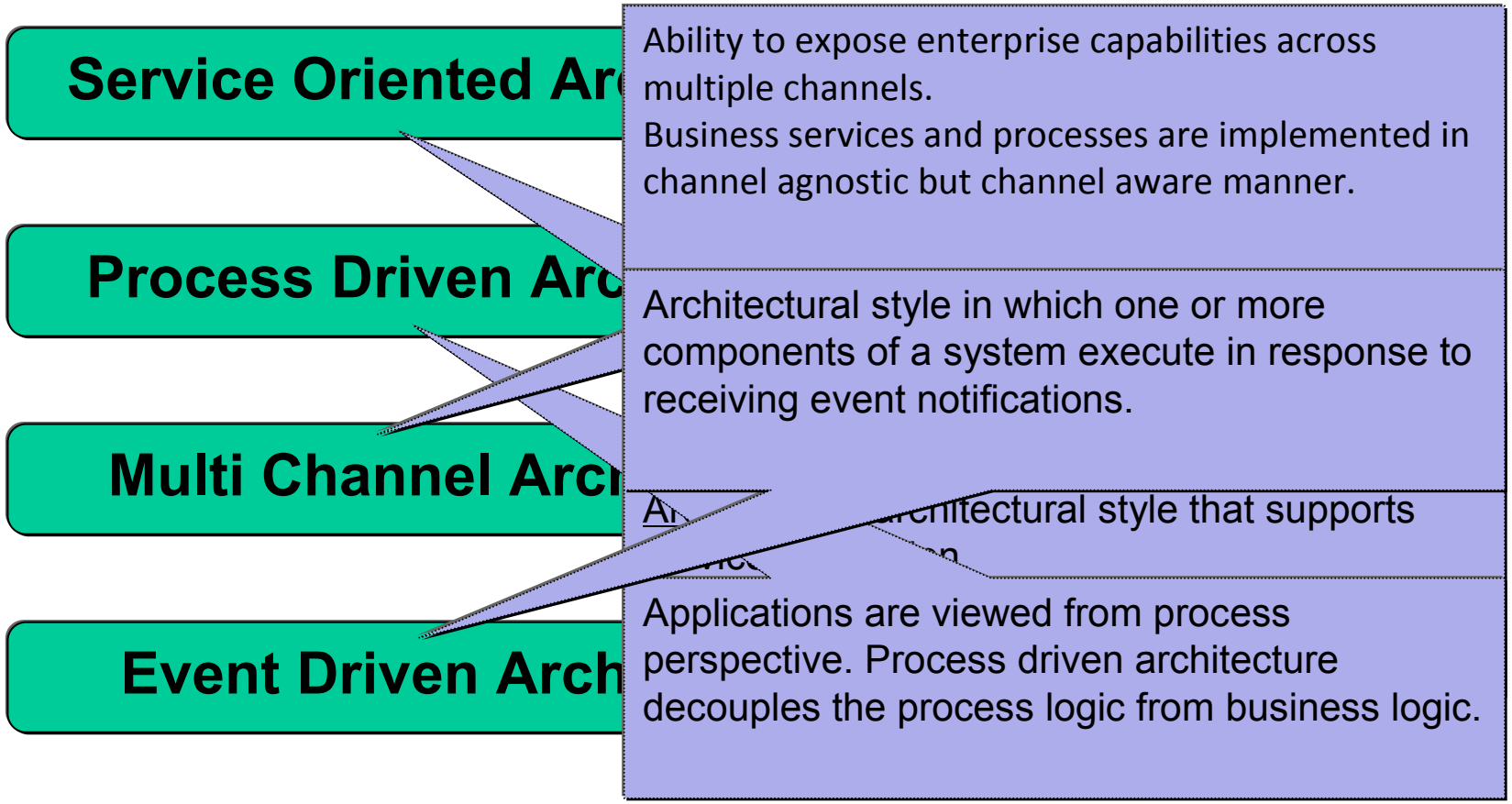
Key Characteristics of the Target Architecture



Slide 8

BA7 Process Driven Architecture detaylandır.

SOA:An architectural style for the design of business applications in terms of flexible, reusable, loosely coupled service assets.
Burak Arık; 19.10.2010

BA8

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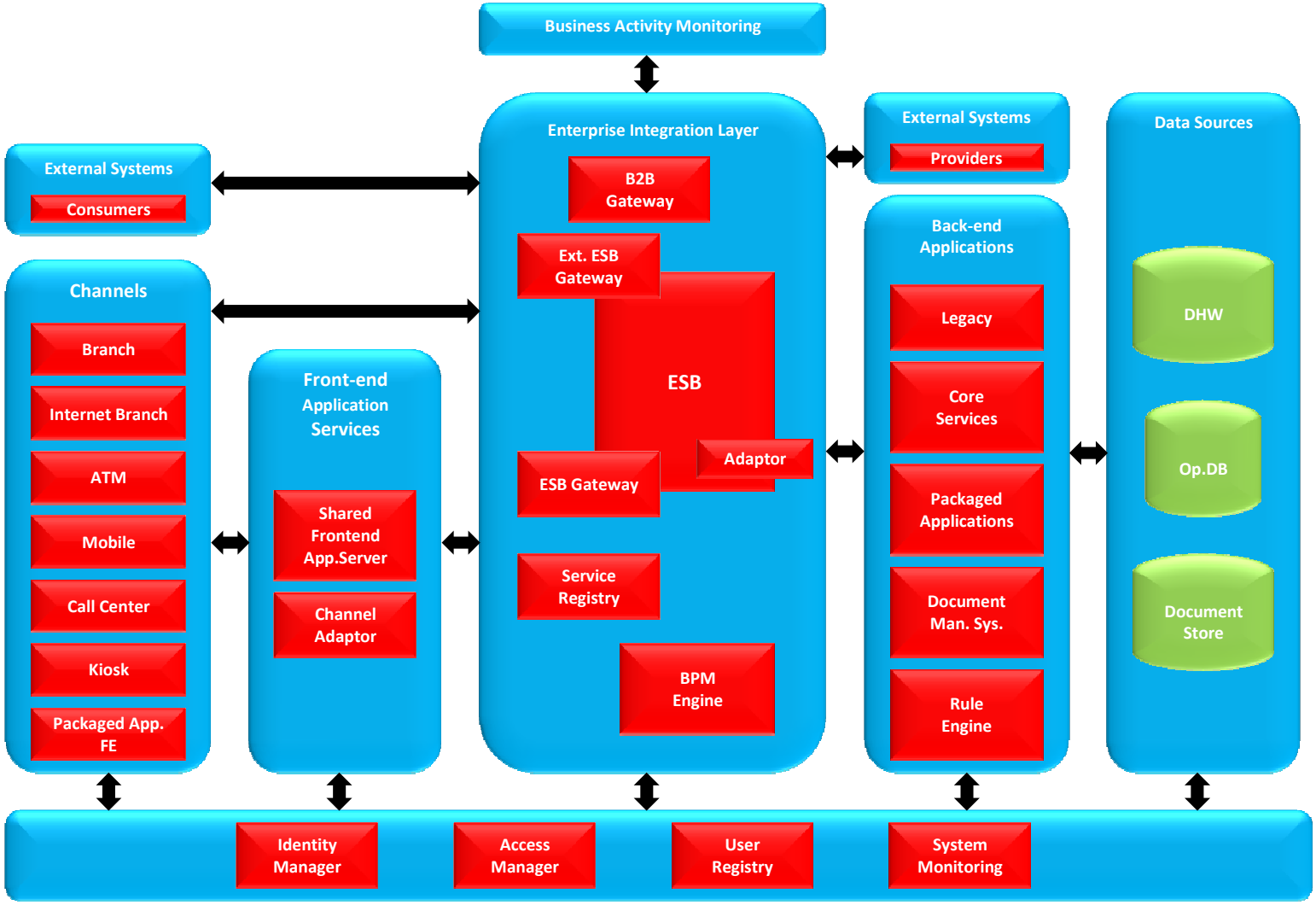
Target Architecture – IT Systems View

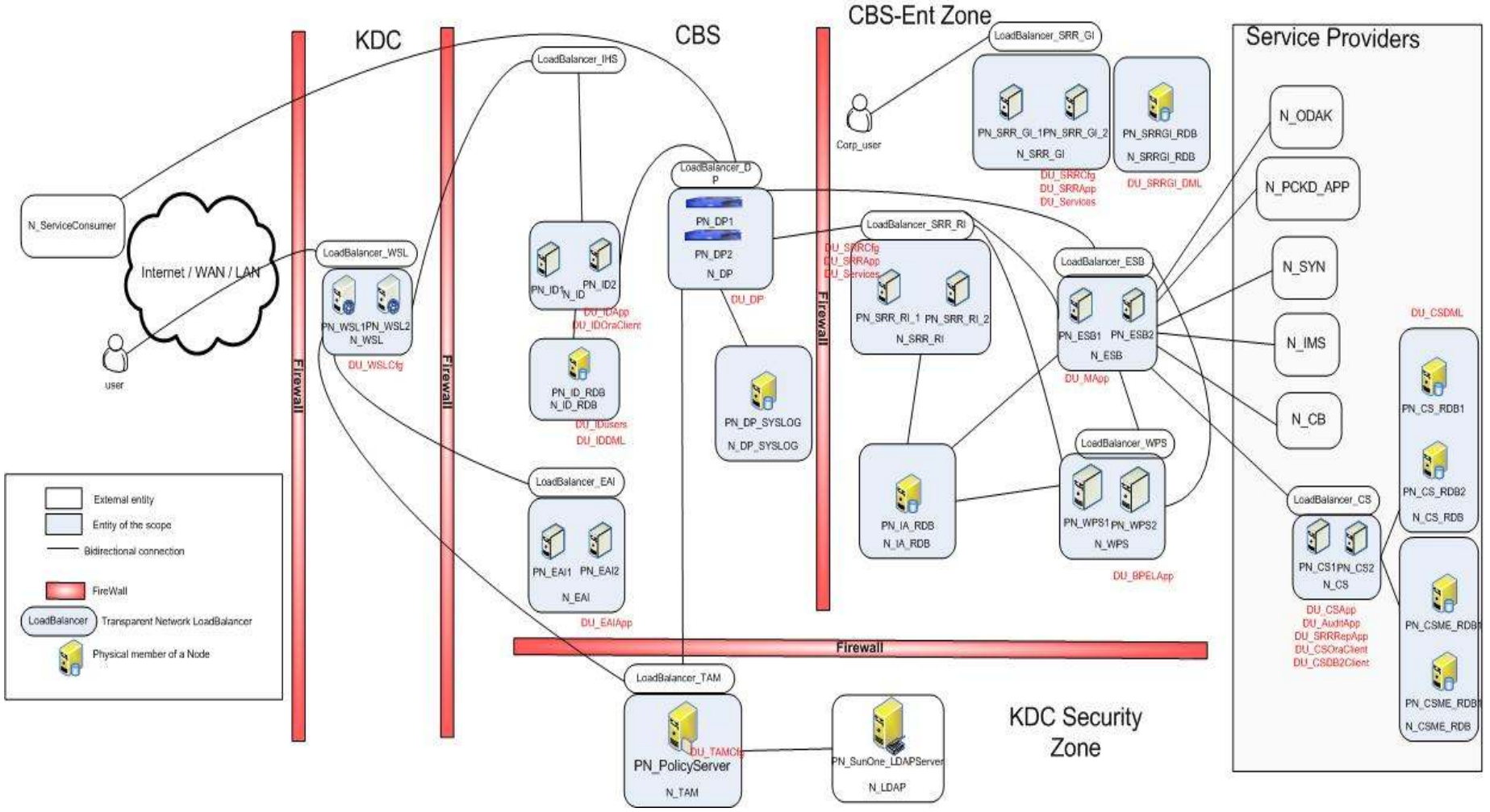


BA8 Frontend application services?

Burak Arık; 19.10.2010

BA9

Target Architecture – Operational Topology

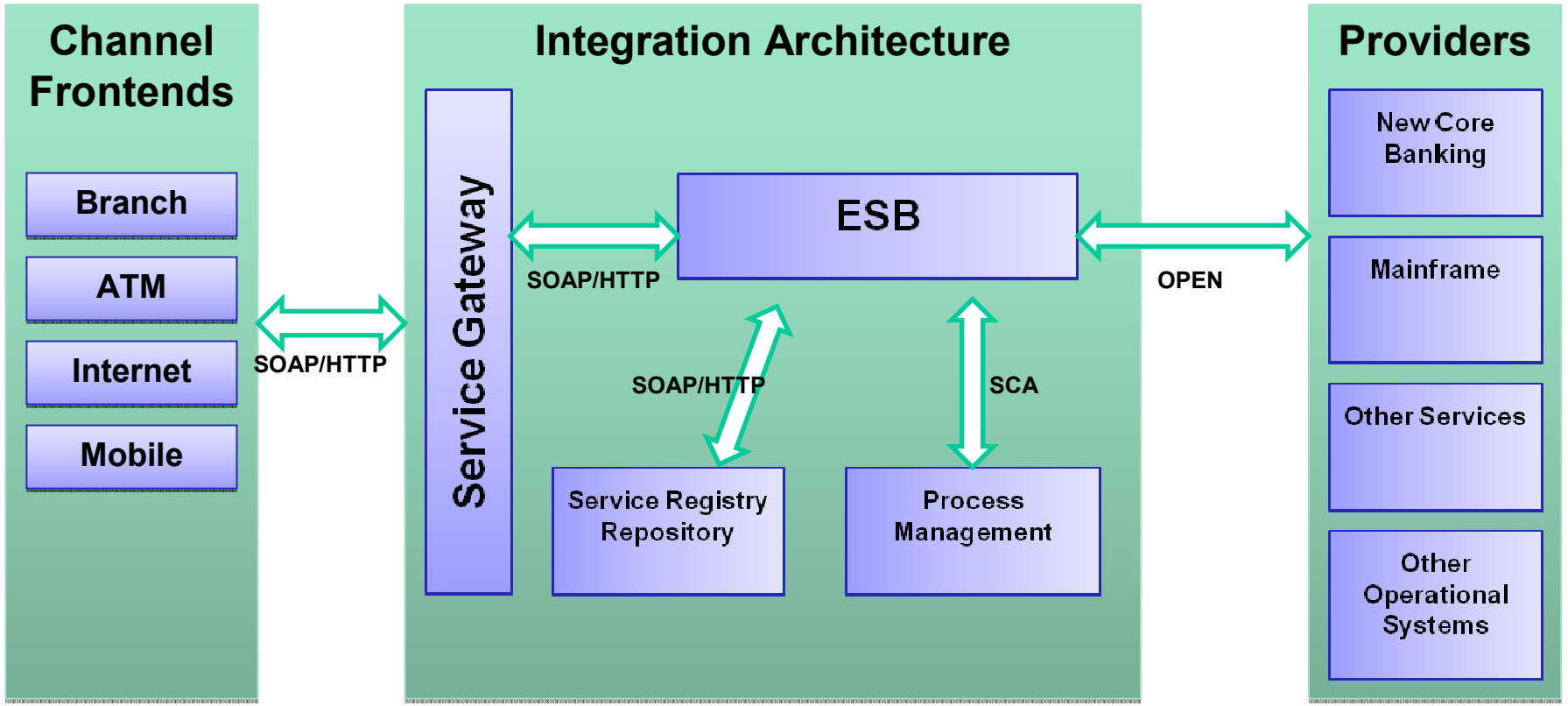


Slide 10

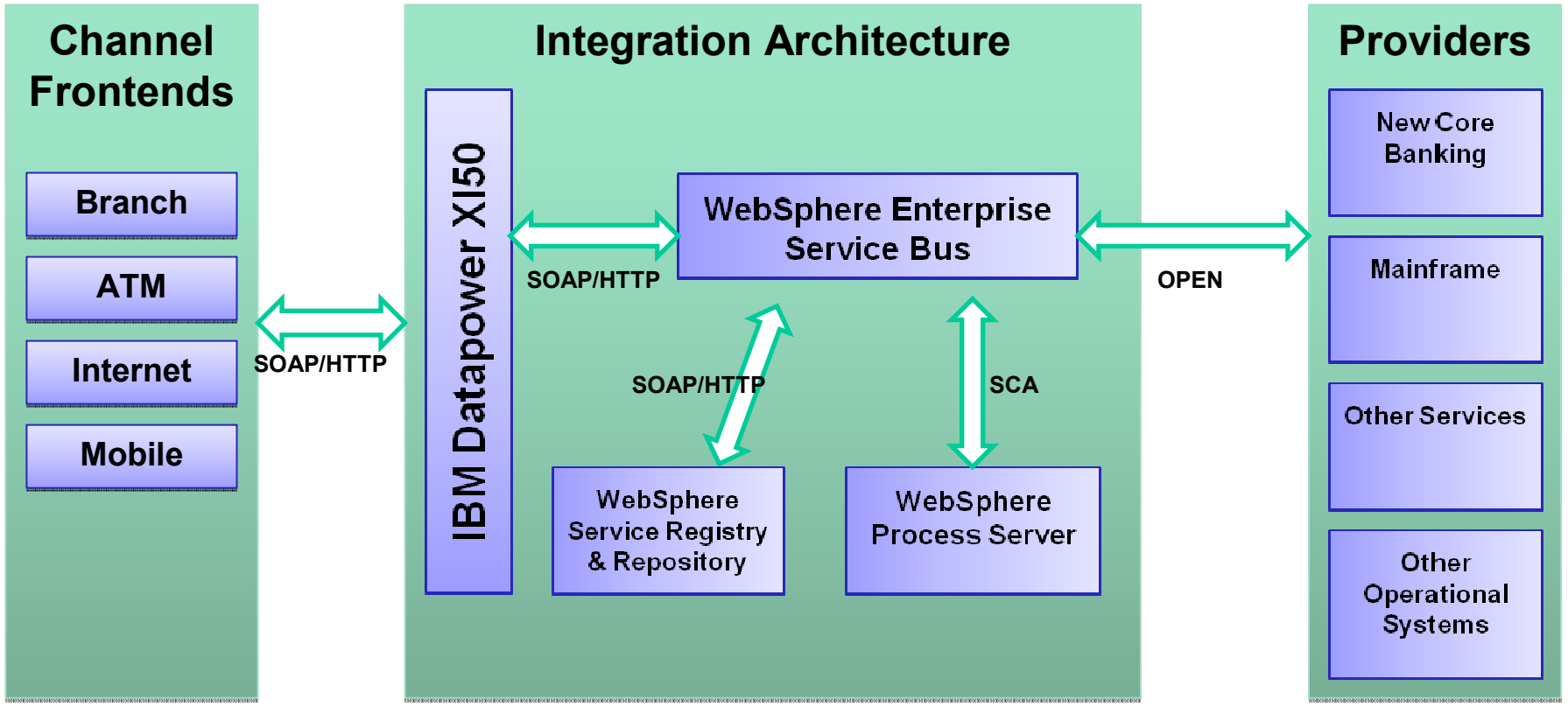
BA9 Bu slayta gerek var mı?

Burak Arık; 19.10.2010

IA Principal Components



IA Principal Components



ESB Gateway – Datapower XI50

- Integrated with
  - WSRR to retrieve service contracts and schemas
  - LDAP for authentication
  - TAM for authorization

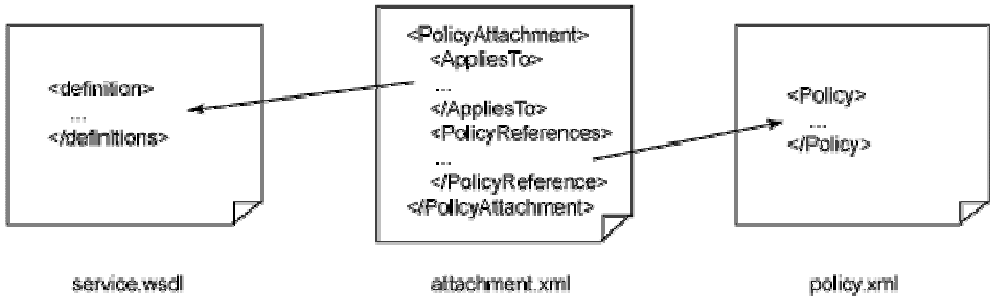
- Service Gateway Features
  - Security
    - Authentication
      - Can consume LTPA or Username Pasword Tokens
      - LTPA Tokens are propogated to the ESB
    - Authorization
      - A TAM objectspace was created for services/operations
      - Roles are associated with services/operations
      - Datapower verifies that the user is in one of the allowed roles to let the service invocation proceed
  - Schema validation
    - Datapower validates all request and response messages against the schema defined in WSRR
    - İşbank headers are also validated against the İşbank header schema

Enterprise Service Bus

- Service Gateway Mediation
  - Implicit soap headers are used to propagate
    - Consumer Context
    - Service Invocation Instance Info
  - Using JET2 to generate a strongly typed mediation for each service
    - Common processing handled in framework code
    - Framework coupled with the implicit soap header types and policies, more later
- Specific Mediation
  - Data Format Transformation
  - Data Model Transformation
  - Protocol Transformation

Policy support

- Custom WS-Policy documents stored in WSRR
  - Attached to service definition via policy attachment
- Can be attached to service, operation, or message
  - WSRR supports <AppliesTo> to define policy subject via XPath
- Retrieved from WSRR and cached
- ESB is the policy enforcement point
  - Audit, Channel validation
  - Policy merge, normalization, enforcement



SOA Governance – Service Registry and Repository

TÜRKİYE İŞ BANKASI
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- Service related artifacts stored and governed in Service Registry
  - Physical files, e.g. WSDL, XML Schema
  - Service model
    - Logical artifacts containing service meta-data
- Classifications
- Naming conventions
- Lifecycle transitions defined for all main objects
  - Enforces governance process
  - Enforces consistency across crated artifacts
- Supports service versioning
- Supports service subscription
  - Only consumers with a subscription can call a service
  - Enforced at runtime by ESB
- Certain characteristics of service stored as WS-Policy documents
- Automatic promotion of artifacts between runtime environments

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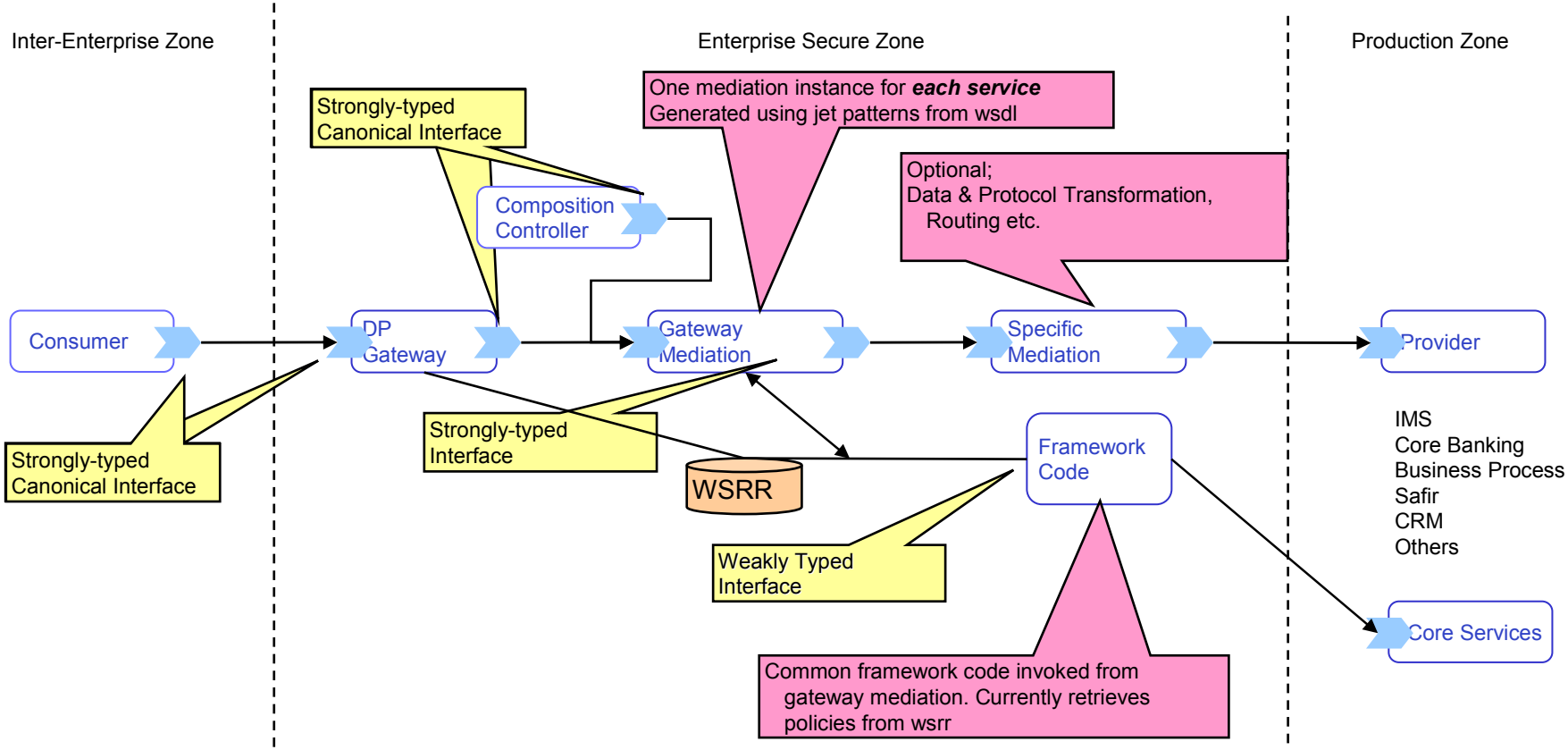
Türkiye'nin Bankası

Gateway & Specific Mediation



Deploying a new service requires
A new gateway mediation instance deployed; Pattern support for building complete gateway mediations
New metadata to be published in WSRR;

BA10 Gateway Mediation yerine Generic Mediation?
Composition controller?
Burak Arık; 19.10.2010

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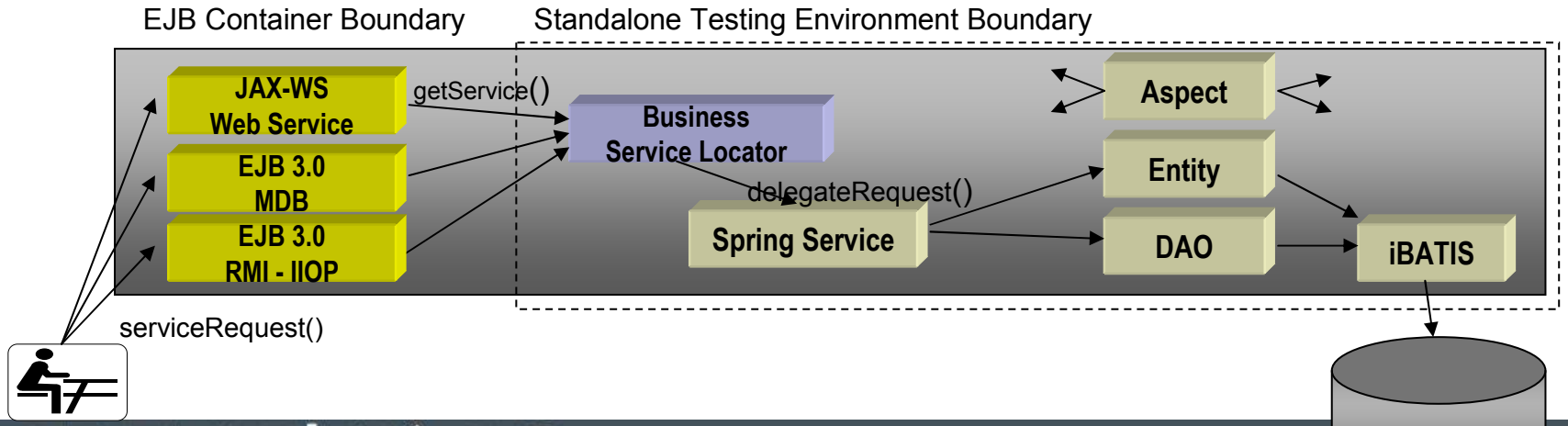
Türkiye'nin Bankası

Service Development Framework

- Goals
  - Rapid development using new standard technologies.
  - Enhanced testing support.
  - Lightweight, simple and easy-to-learn. JET development for creation.
  - Reuse best practices, design patterns for all Java based services.
- Technology Mapping
  - Remoting Layer JAX-WS 2.0 Web Services using WebSphere JAX-WS web services runtime.
  - Service Layer Service implementations are Spring managed POJO's.
  - Data Access Layer Object to relational mapping is done by Spring – iBATIS integration.



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Core Services

- Reference Data Service
  - Common repository for reference data required by applications
  - Multi-language support
  - Supports hierarchial data structures
  - Keeps historical data with versions
- Message Service
- Organizational Unit Service
- Workstation Management
- Channel Management

Slide 19

BA11 Bu slayta gerek var mı?

Burak Arık; 19.10.2010

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Project Scope – IMS Transaction Consolidations

8 transactions on Legacy system will be mediated as two services through Integration Architecture

Cash Withdrawal

BK **CK**

Cash Deposit

KB **KC**

FX Deposit/Withdrawal

AD **BD**

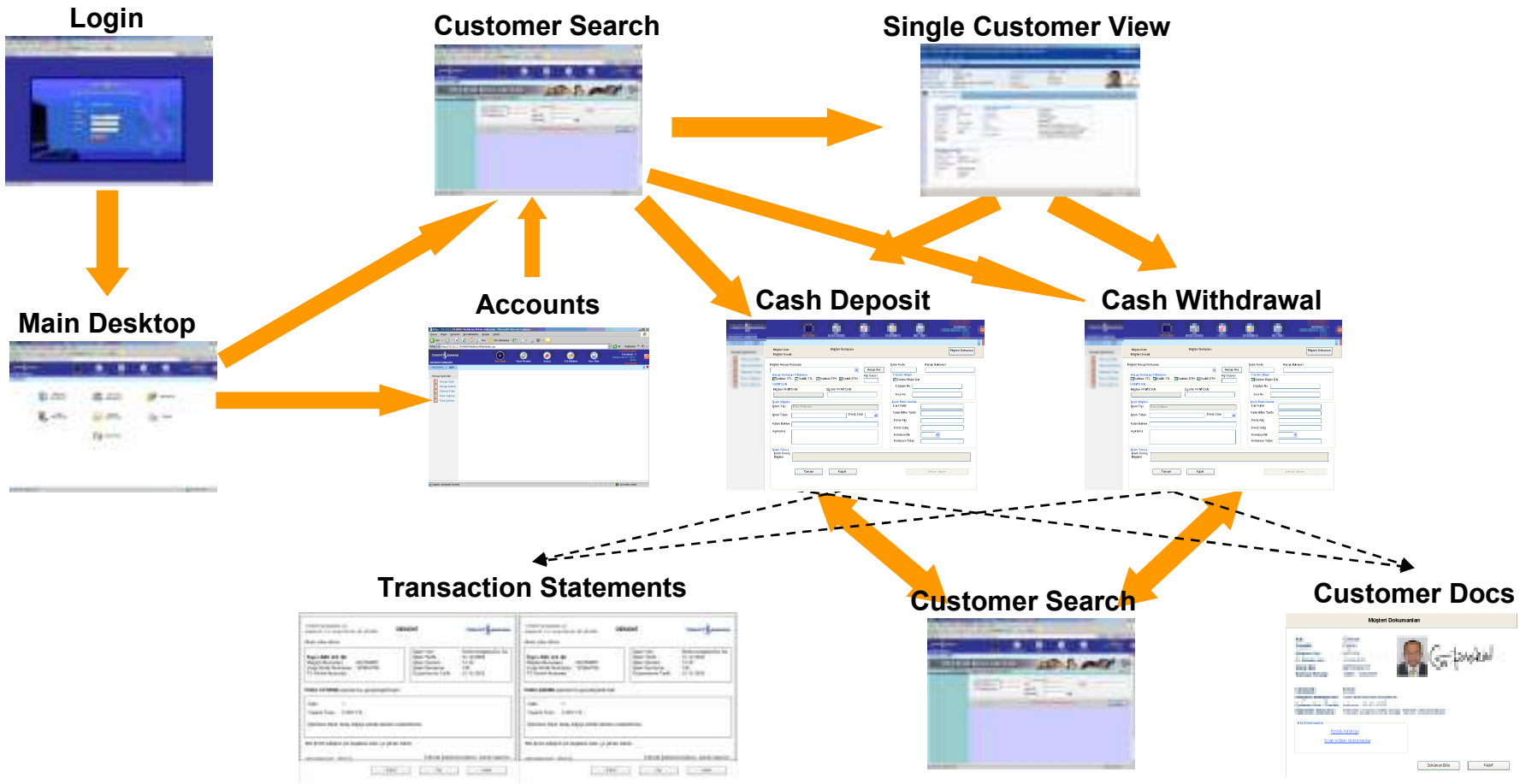
Balance Inquiry

HB **S0**

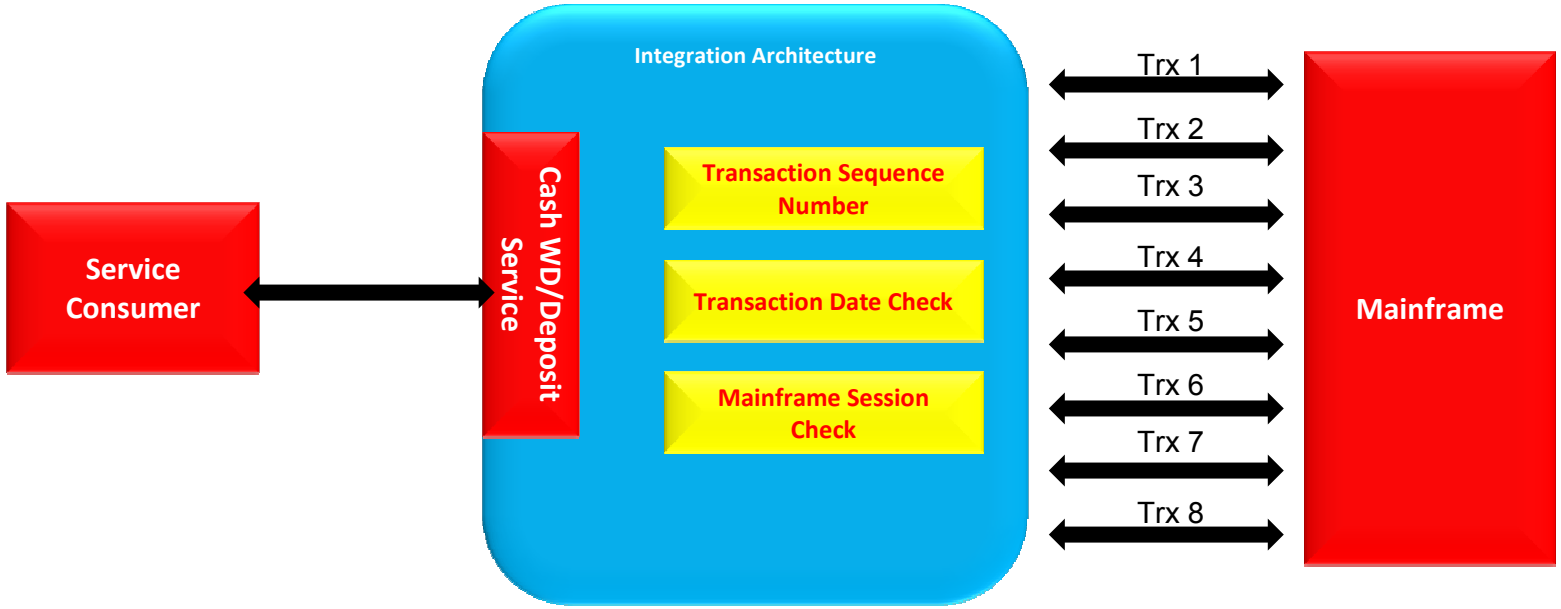
Cash Deposit **Cash Withdrawal**

- *Consolidation of common functionalities will improve usability of screens.*
- *New screens will be improved with user-friendly visual features*

Project Scope – Page flow



Value of IA on this Project



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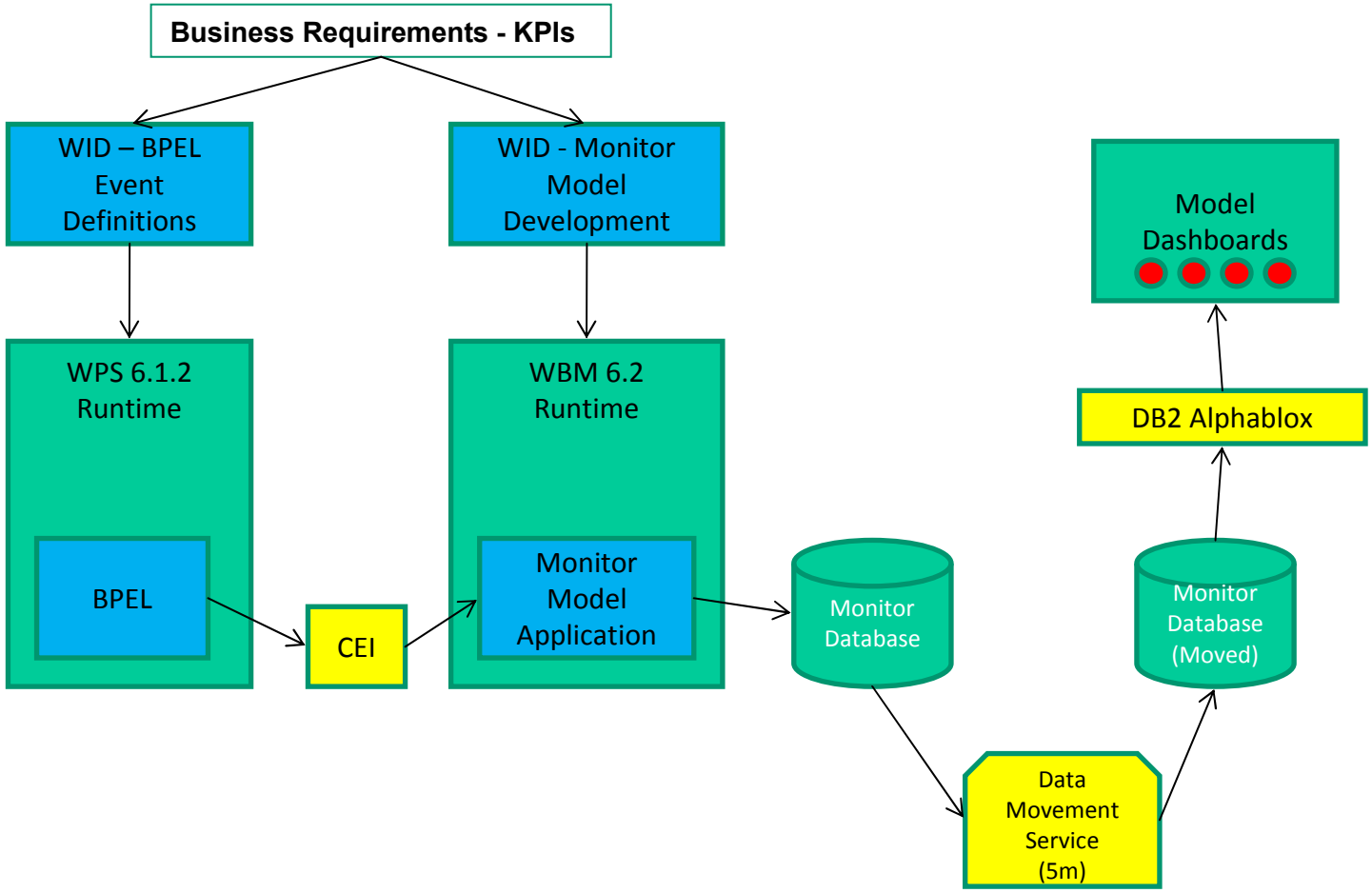
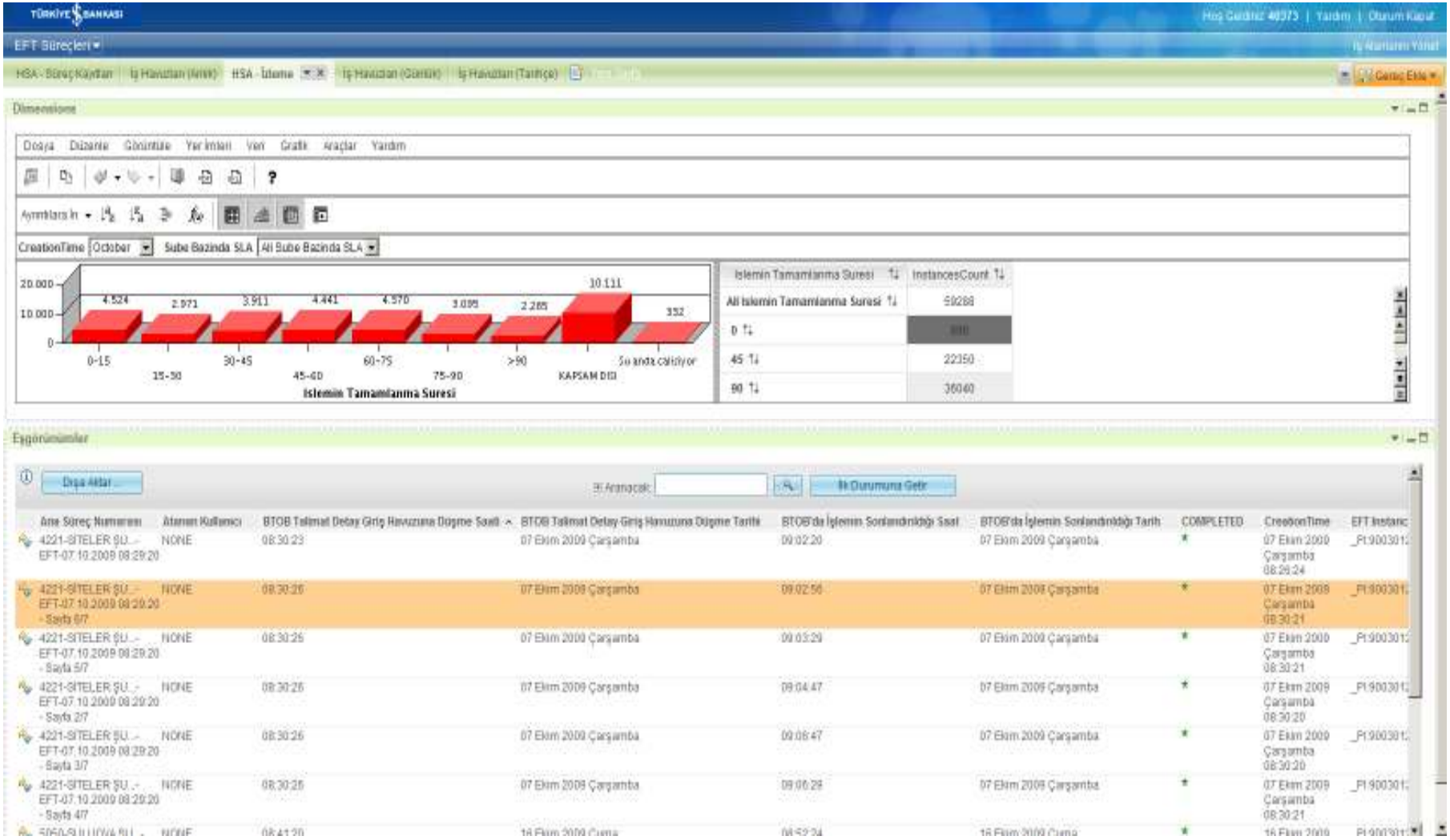
Monitor Model Development



Dashboards


TÜRKİYE İŞ BANKASI
EFT Süreçleri
HSA - Süreç Kayıtları
İş Havuzları (Anlık)
HSA - İzleme
İş Havuzları (Günlük)
İş Havuzları (Tarihçe)
Yeni Sayfa
İş Havuzları Anlık Süreç Sayıları
BTOB ODE Talimat Detayı Girişi Süreç Sayısı
400
600
200
800
0
1000
BTOB Yetkili Onayı Girişi Süreç Sayısı
80
120
40
160
0
200
Talimat Sonuçlarını Bekleme Süreç Sayısı
24
36
12
48
0
60
ŞUBE İmzayı Kontrol Et Süreç Sayısı
400
600
200
800
0
1000
İş Havuzları Anlık Üzerine Alınmış İşler
BTOB ODE Talimat Detayı Girişi Üzerine Alınmış İşlemler
400
600
200
800
0
1000
BTOB Yetkili Onayı Girişi Üzerine Alınmış İşler
400
600
200
800
0
1000
Talimat Sonuçlarını Bekleme Üzerine Alınmış İşler
400
600
200
800
0
1000
ŞUBE İmzayı Kontrol Et Üzerine Alınmış İşler
400
600
200
800
0
1000

Dashboards


TÜRKİYE İŞ BANKASI
EFT Süreçleri
Dimensions
Dosya Düzenle Görüntüle Yer İmları Veri Grafik Araçlar Yardım
CreationTime October
Şube Bazında SLA
Tüm Şube Bazında SLA
20.000
10.000
0
4.524
2.971
3.911
4.441
4.570
3.095
2.285
10.111
352
0-15
15-30
30-45
45-60
60-75
75-90
>90
KAPSAM DIŞI
Şu anda çalışıyor
İşlemin Tamamlanma Süresi
İşlemin Tamamlanma Süresi
InstancesCount
All İşlemin Tamamlanma Süresi
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0
45
22350
90
36040
Eşgörünümler
Dışa Aktar...
İlk Durumuna Getir
Ana Süreç Numarası
Atanan Kullanıcı
BTOB Talimat Detay Giriş Havuzuna Düşme Saati
BTOB Talimat Detay Giriş Havuzuna Düşme Tarihi
BTOB'da İşlemin Sonlandırıldığı Saat
BTOB'da İşlemin Sonlandırıldığı Tarih
COMPLETED
CreationTime
EFT Instanc
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20
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08:30:23
07 Ekim 2009 Çarşamba
09:02:20
07 Ekim 2009 Çarşamba
*
07 Ekim 2009 Çarşamba 08:29:24
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20 - Sayfa 6/7
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09:02:56
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*
07 Ekim 2009 Çarşamba 08:30:21
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20 - Sayfa 5/7
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09:03:29
07 Ekim 2009 Çarşamba
*
07 Ekim 2009 Çarşamba 08:30:21
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20 - Sayfa 2/7
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08:30:26
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09:04:47
07 Ekim 2009 Çarşamba
*
07 Ekim 2009 Çarşamba 08:30:20
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20 - Sayfa 3/7
NONE
08:30:26
07 Ekim 2009 Çarşamba
09:06:47
07 Ekim 2009 Çarşamba
*
07 Ekim 2009 Çarşamba 08:30:20
4221-SİTELER ŞU...
EFT-07.10.2009 08:29:20 - Sayfa 4/7
NONE
08:30:26
07 Ekim 2009 Çarşamba
09:06:29
07 Ekim 2009 Çarşamba
*
07 Ekim 2009 Çarşamba 08:30:21

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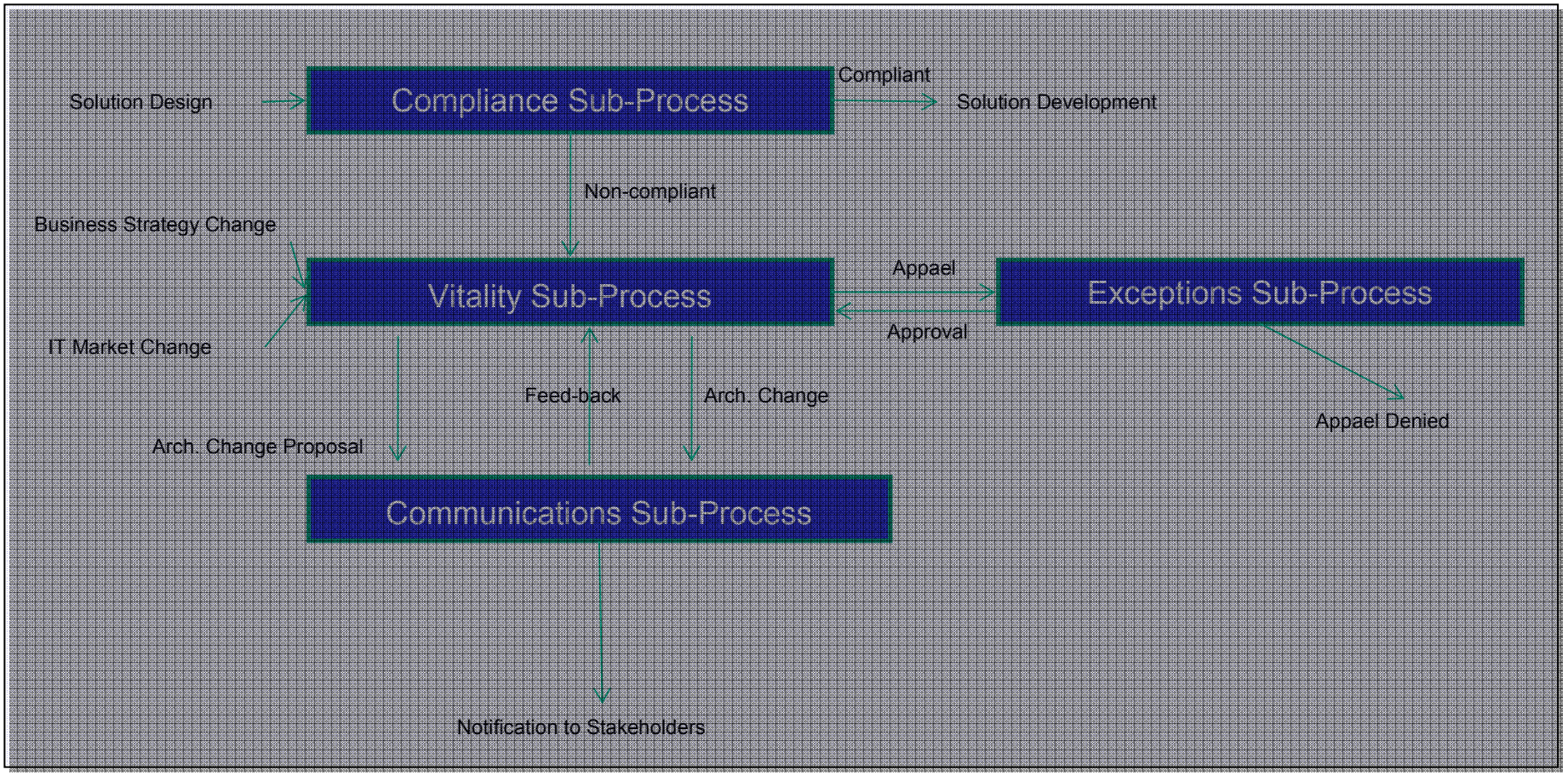
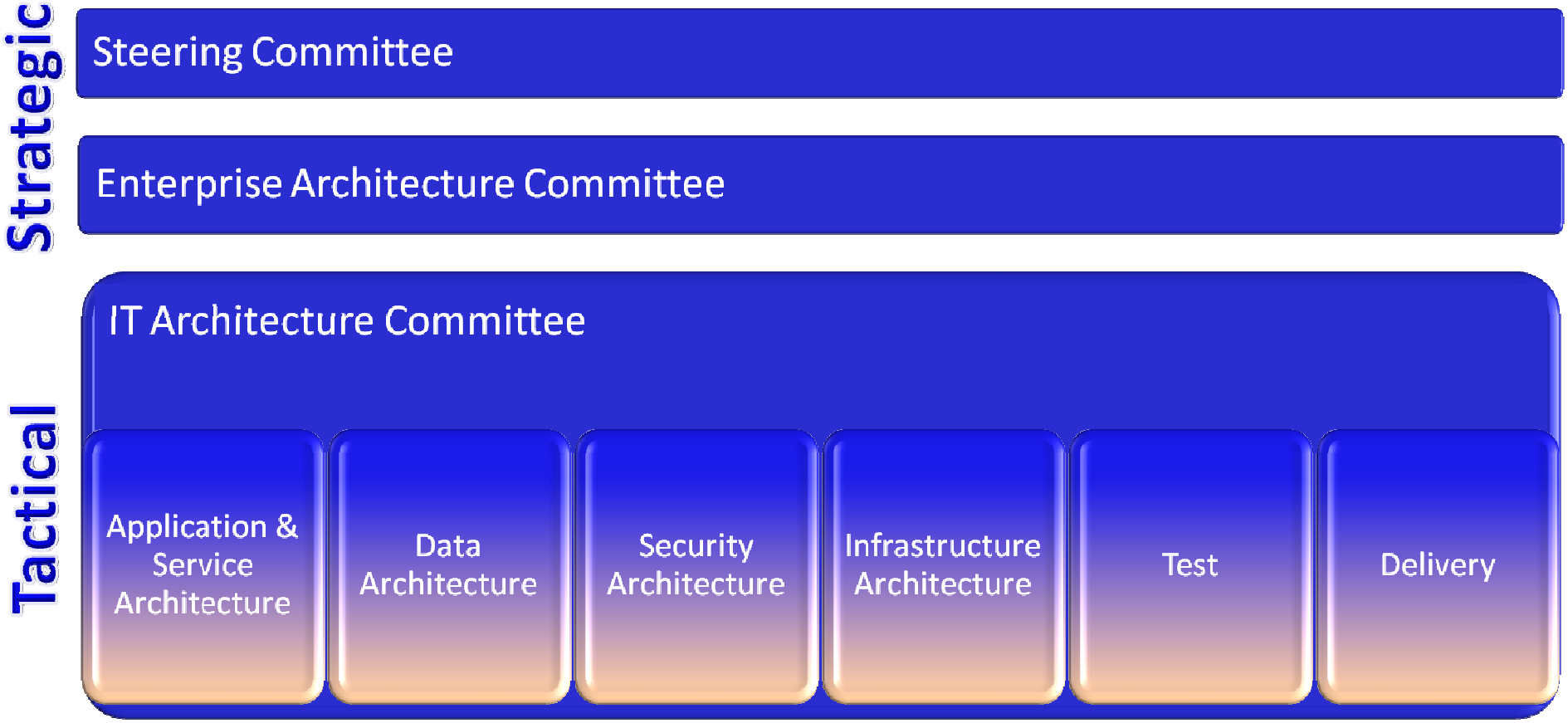
Architectural Governance

- Defined the IT Architecture Management Process
- Established an “IT Architecture Committee”
  - Representatives from all IT domains
    - Middleware, Security, Data, Infrastructure, etc
  - Led by Chief Architects
  - Responsible for all technical decisions across projects
  - Responsible for cycle of reviews
    - Business Requirements Review
    - System Requirements Review
    - Preliminary Design Review
    - Critical Design Review
    - Test Readiness Review
    - Production Readiness Review
  - Results captured in scorecard (including action items, timelines)
- Defined new roles for architectural support to projects

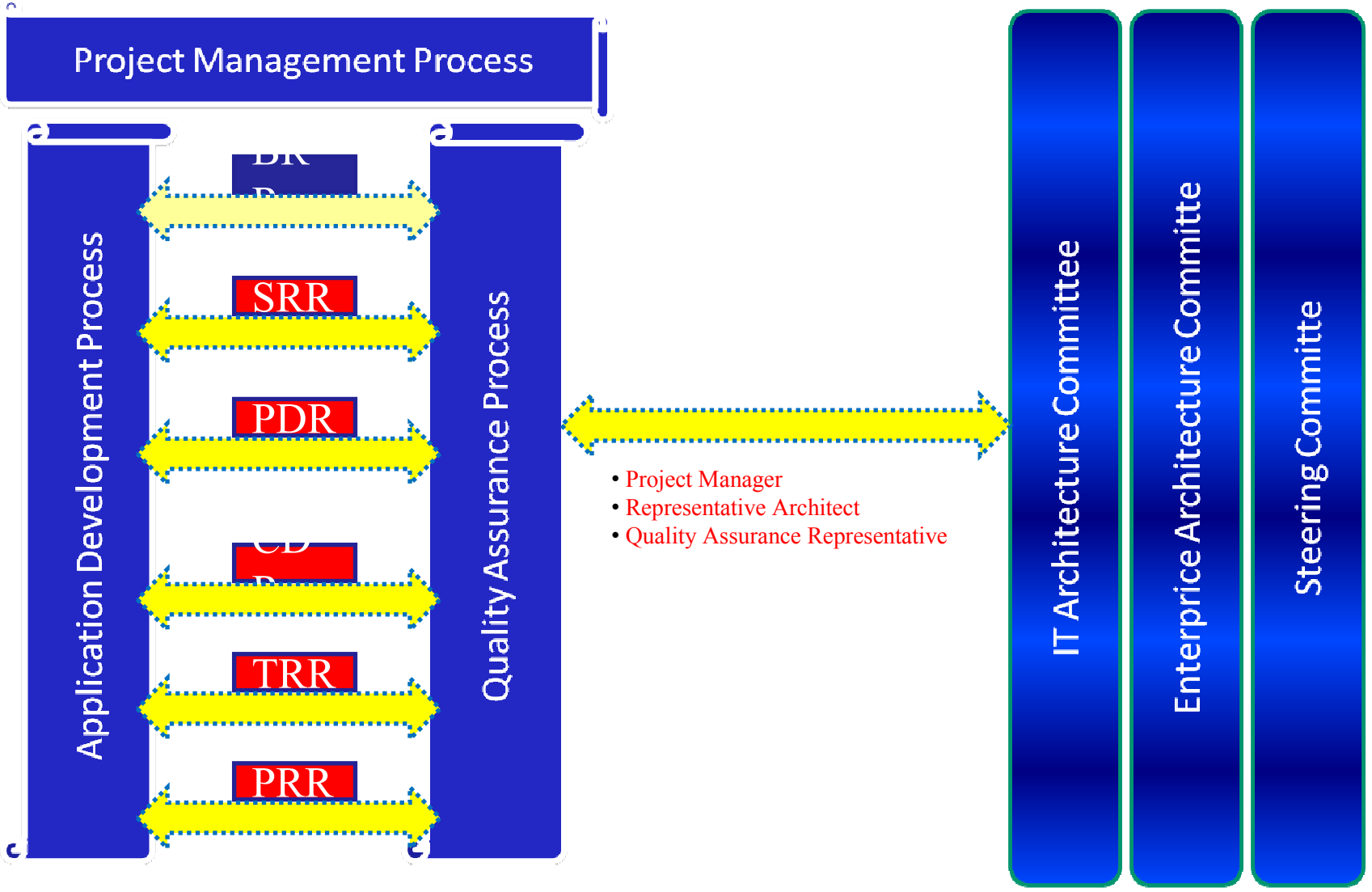
Architecture Management Process



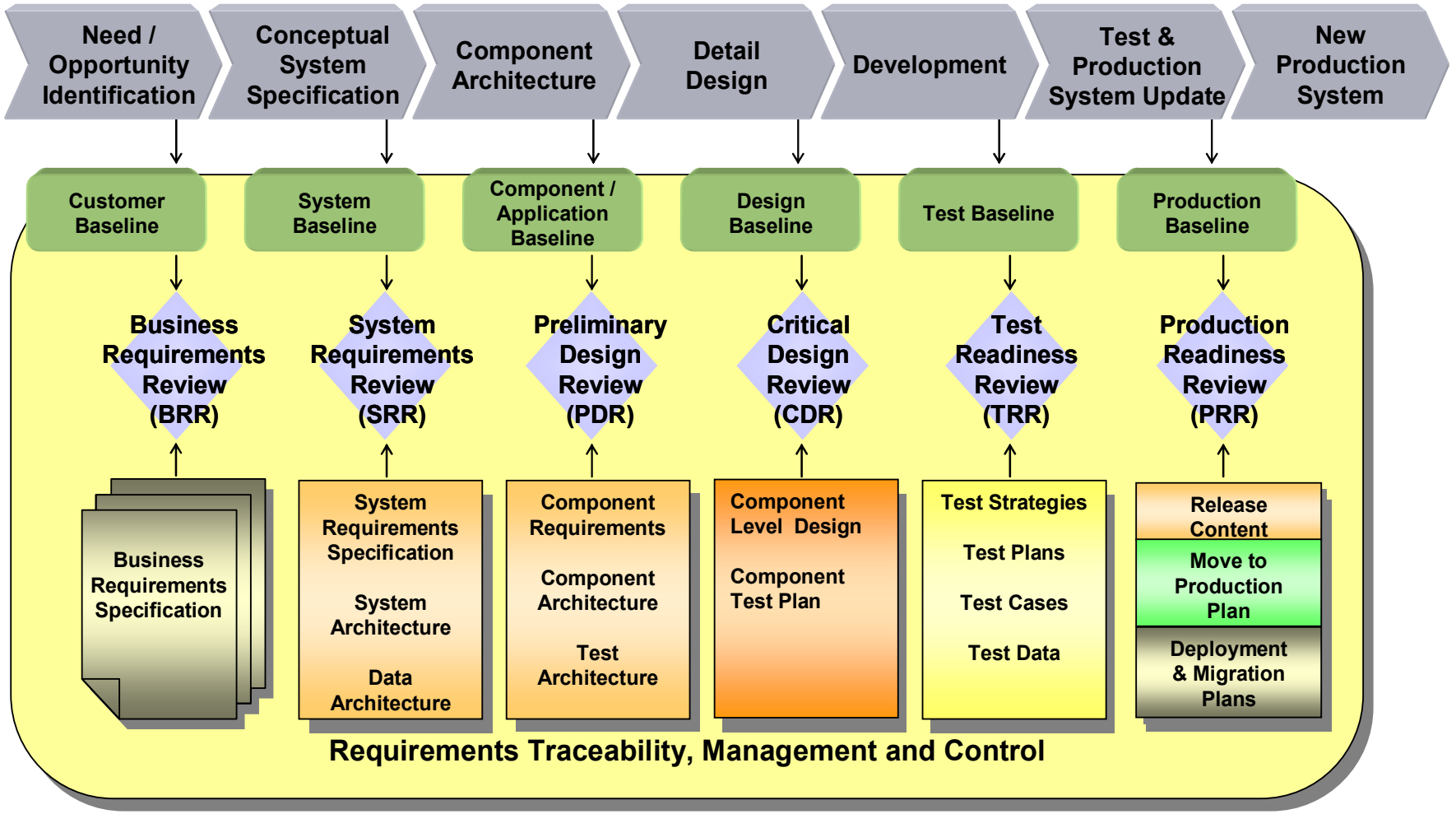
Commitees


Strategic
Steering Committee
Enterprise Architecture Committee
Tactical
IT Architecture Committee
Application & Service Architecture
Data Architecture
Security Architecture
Infrastructure Architecture
Test
Delivery

Process Interactions & Roles



Architecture Committee Reviews



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Lessons Learned

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- Business-IT gap
  - Hard to define complete and unambiguous requirements
  - Difficult to explain value of SOA to the business
- You must have a solid architecture before you start
- Lots of moving parts
  - Hard to troubleshoot, monitor
  - Hard to manage transactions across environments
- Good skills are crucial for building IT architecture
- Performance is always a concern

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धन्यवाद
Hindi

多謝
Traditional Chinese

ขอบคุณ
Thai

Спасибо
Russian

Gracias
Spanish

Thank You

Teşekkürler
Turkish

Merci
French

Obrigado
Brazilian Portuguese

Grazie
Italian

多谢
Simplified Chinese

Dank
e
German

நன்றி
Tamil

ありがとうございました
Japanese