Integration Technical Conference 2019

Digital Transformation:

New Image through a Modern API Platform

IBM Cloud

Raymond Perry

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Enterprise Integration & Strateg

An accomplished IT Technology Leader and Enterprise Architect that specializes in enterprise integration, technology strategies, new technology, engaging external vendors, and insuring development teams deliver solutions that meet or exceed business expectations. Has a proven track record of providing thought leadership, strategies and roadmaps in Integrations, SOA, and API domains for the enterprise and business partners.

- 28 Years in the Technology Industry
  - Finance
  - Wealth Management
  - Retail

UMB

Count on more.

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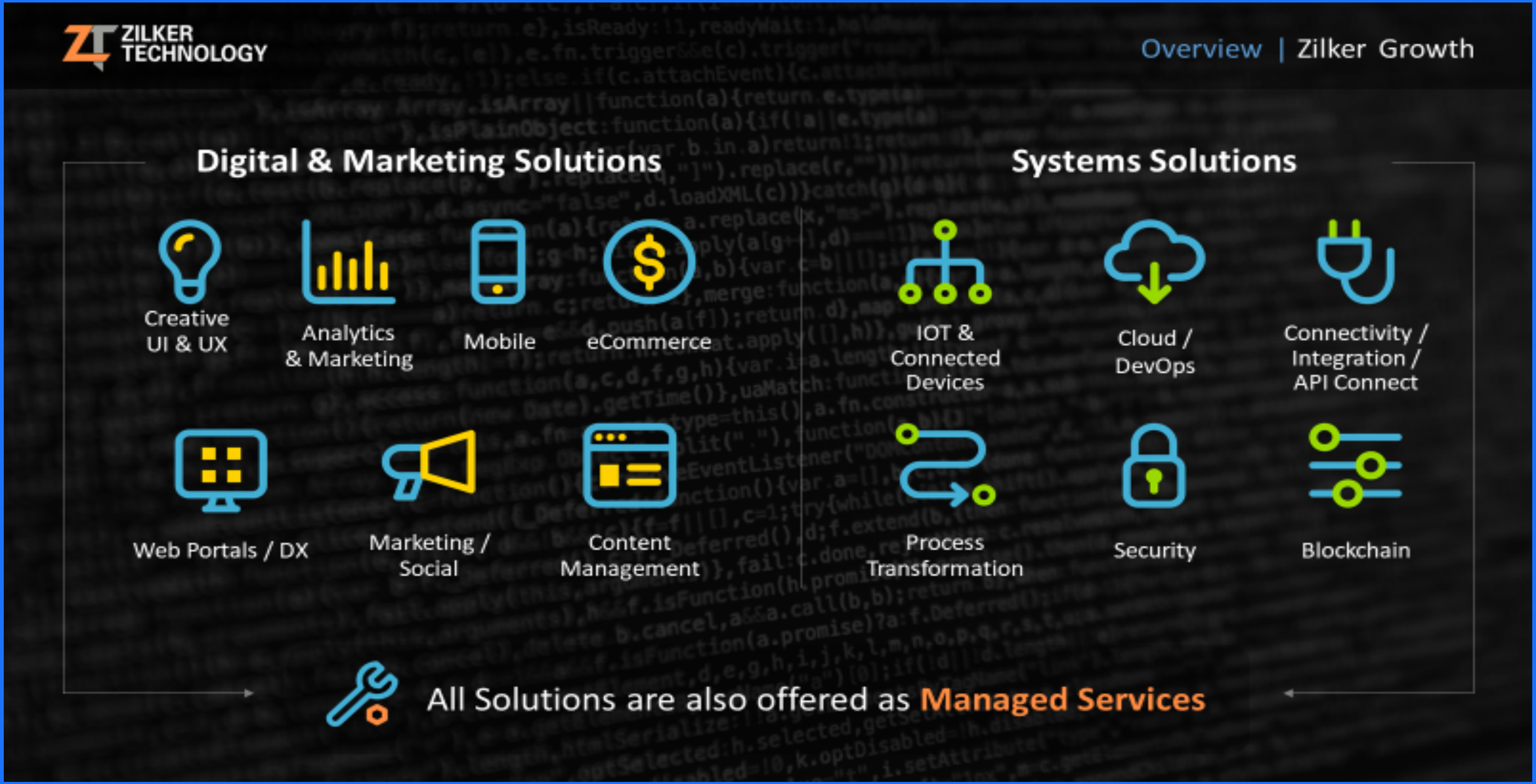
Founded in 1913

Zilker Technology at a Glance



ZILKER TECHNOLOGY

Overview | Zilker Growth

Digital & Marketing Solutions

- Creative UI & UX
- Analytics & Marketing
- Mobile
- eCommerce
- Web Portals / DX
- Marketing / Social
- Content Management

Systems Solutions

- IOT & Connected Devices
- Cloud / DevOps
- Connectivity / Integration / API Connect
- Process Transformation
- Security
- Blockchain

All Solutions are also offered as Managed Services

Consulting, Implementation Services, Managed Services

Niche Skills of a Boutique Consulting Firm

Experience of Global Integrator

What is Digital Transformation?

Digital transformation represents a break from the past, with a high level of impact and complexity, Transformation efforts need to be undertaken as the means of getting to a differentiated capability to accomplish a defined goal.

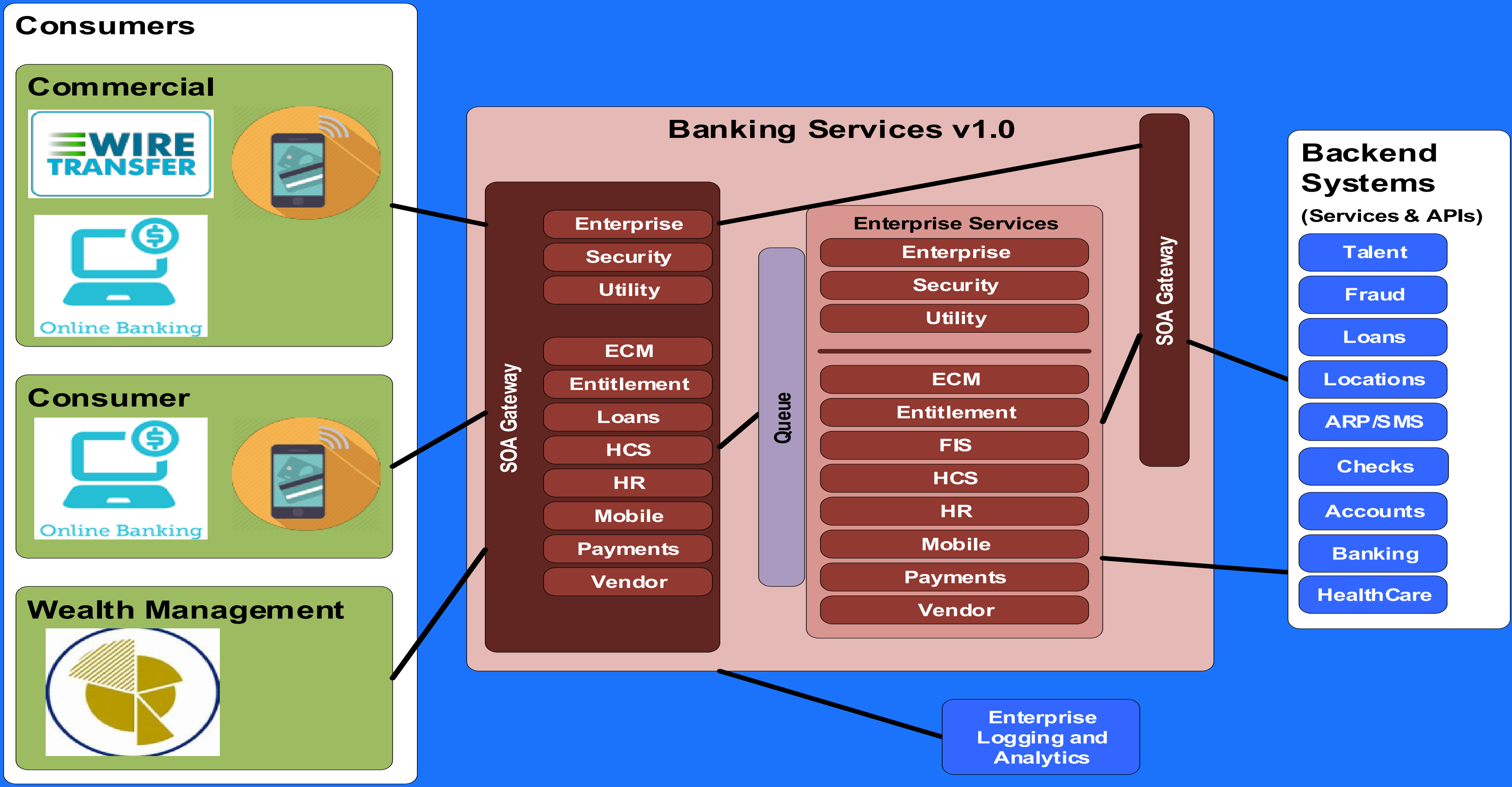
Pearl Zhu

Banking SOA Gateway

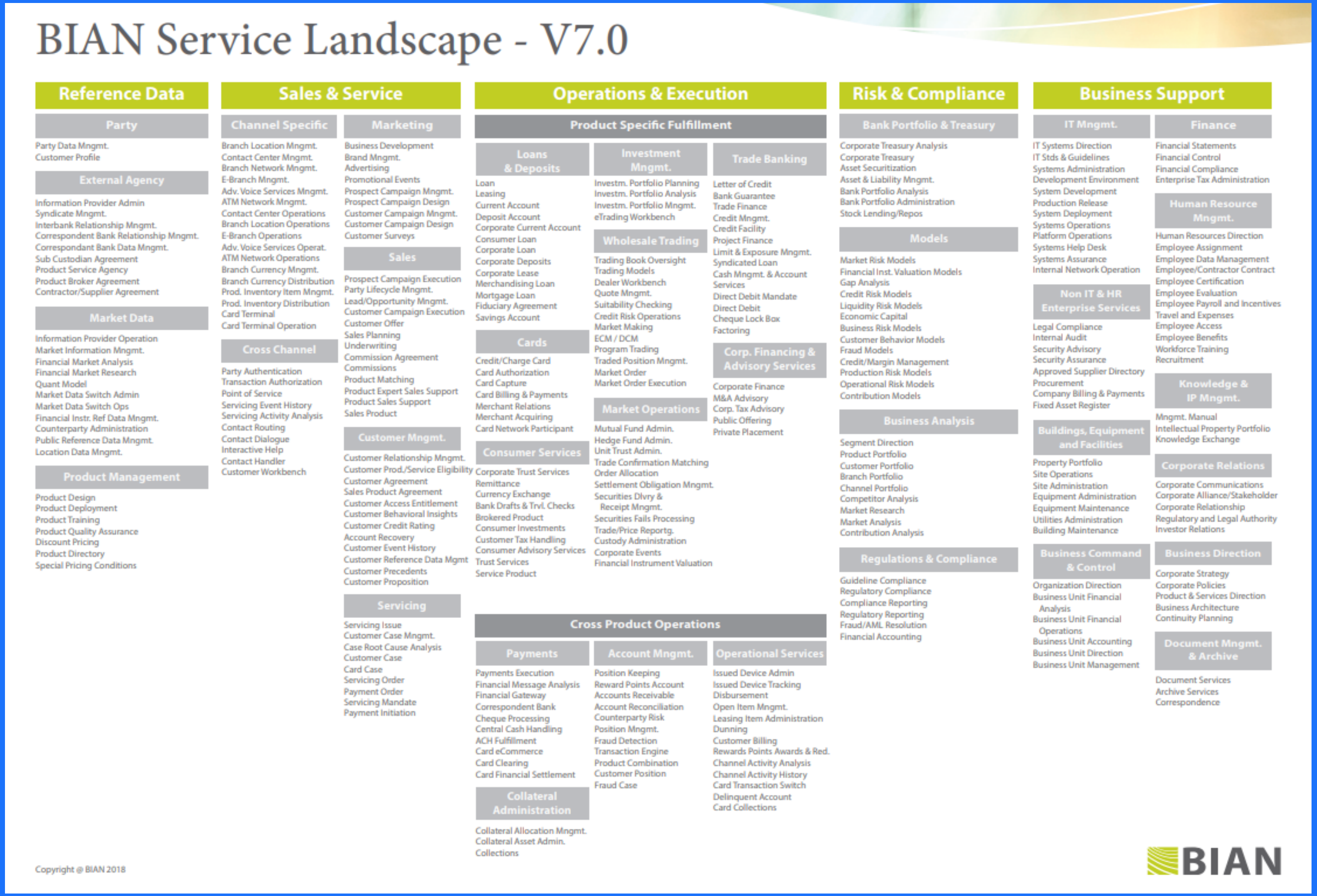
1. Enterprise Service Bus
2. One Connection Point
3. Security Considerations
4. Banking Services

But....

1. Application Services
2. Point to Point
3. Limited Re-use
4. No Catalog
5. Limited Client Knowledge



Industry Concepts – BIAN as an example



BIAN Service Landscape - V7.0

Reference Data

Party
Party Data Mngmt.
Customer Profile

External Agency
Information Provider Admin
Syndicate Mngmt.
Interbank Relationship Mngmt.
Correspondent Bank Relationship Mngmt.
Correspondant Bank Data Mngmt.
Sub Custodian Agreement
Product Service Agency
Product Broker Agreement
Contractor/Supplier Agreement

Market Data
Information Provider Operation
Market Information Mngmt.
Financial Market Analysis
Financial Market Research
Quant Model
Market Data Switch Admin
Market Data Switch Ops
Financial Instr. Ref Data Mngmt.
Counterparty Administration
Public Reference Data Mngmt.
Location Data Mngmt.

Product Management
Product Design
Product Deployment
Product Training
Product Quality Assurance
Discount Pricing
Product Directory
Special Pricing Conditions

Sales & Service

Channel Specific
Branch Location Mngmt.
Contact Center Mngmt.
Branch Network Mngmt.
E-Branch Mngmt.
Adv. Voice Services Mngmt.
ATM Network Mngmt.
Contact Center Operations
Branch Location Operations
E-Branch Operations
Adv. Voice Services Operat.
ATM Network Operations
Branch Currency Mngmt.
Branch Currency Distribution
Prod. Inventory Item Mngmt.
Prod. Inventory Distribution
Card Terminal
Card Terminal Operation

Cross Channel
Party Authentication
Transaction Authorization
Point of Service
Servicing Event History
Servicing Activity Analysis
Contact Routing
Contact Dialogue
Interactive Help
Contact Handler
Customer Workbench

Marketing
Business Development
Brand Mngmt.
Advertising
Promotional Events
Prospect Campaign Mngmt.
Prospect Campaign Design
Customer Campaign Mngmt.
Customer Campaign Design
Customer Surveys

Sales
Prospect Campaign Execution
Party Lifecycle Mngmt.
Lead/Opportunity Mngmt.
Customer Campaign Execution
Customer Offer
Sales Planning
Underwriting
Commission Agreement
Commissions
Product Matching
Product Expert Sales Support
Product Sales Support
Sales Product

Customer Mngmt.
Customer Relationship Mngmt.
Customer Prod./Service Eligibility
Customer Agreement
Sales Product Agreement
Customer Access Entitlement
Customer Behavioral Insights
Customer Credit Rating
Account Recovery
Customer Event History
Customer Reference Data Mgmt
Customer Precedents
Customer Proposition

Servicing
Servicing Issue
Customer Case Mngmt.
Case Root Cause Analysis
Customer Case
Card Case
Servicing Order
Payment Order
Servicing Mandate
Payment Initiation

Operations & Execution

Product Specific Fulfillment

Loans & Deposits
Loan
Leasing
Current Account
Deposit Account
Corporate Current Account
Consumer Loan
Corporate Loan
Corporate Deposits
Corporate Lease
Merchandising Loan
Mortgage Loan
Fiduciary Agreement
Savings Account

Cards
Credit/Charge Card
Card Authorization
Card Capture
Card Billing & Payments
Merchant Relations
Merchant Acquiring
Card Network Participant

Consumer Services
Corporate Trust Services
Remittance
Currency Exchange
Bank Drafts & Trvl. Checks
Brokered Product
Consumer Investments
Customer Tax Handling
Consumer Advisory Services
Trust Services
Service Product

Investment Mngmt.
Investm. Portfolio Planning
Investm. Portfolio Analysis
Investm. Portfolio Mngmt.
eTrading Workbench

Wholesale Trading
Trading Book Oversight
Trading Models
Dealer Workbench
Quote Mngmt.
Suitability Checking
Credit Risk Operations
Market Making
ECM / DCM
Program Trading
Traded Position Mngmt.
Market Order
Market Order Execution

Market Operations
Mutual Fund Admin.
Hedge Fund Admin.
Unit Trust Admin.
Trade Confirmation Matching
Order Allocation
Settlement Obligation Mngmt.
Securities Dlvry & Receipt Mngmt.
Securities Fails Processing
Trade/Price Reportg.
Custody Administration
Corporate Events
Financial Instrument Valuation

Trade Banking
Letter of Credit
Bank Guarantee
Trade Finance
Credit Mngmt.
Credit Facility
Project Finance
Limit & Exposure Mngmt.
Syndicated Loan
Cash Mngmt. & Account Services
Direct Debit Mandate
Direct Debit
Cheque Lock Box
Factoring

Corp. Financing & Advisory Services
Corporate Finance
M&A Advisory
Corp. Tax Advisory
Public Offering
Private Placement

Cross Product Operations

Payments
Payments Execution
Financial Message Analysis
Financial Gateway
Correspondent Bank
Cheque Processing
Central Cash Handling
ACH Fulfillment
Card eCommerce
Card Clearing
Card Financial Settlement

Collateral Administration
Collateral Allocation Mngmt.
Collateral Asset Admin.
Collections

Account Mngmt.
Position Keeping
Reward Points Account
Accounts Receivable
Account Reconciliation
Counterparty Risk
Position Mngmt.
Fraud Detection
Transaction Engine
Product Combination
Customer Position
Fraud Case

Operational Services
Issued Device Admin
Issued Device Tracking
Disbursement
Open Item Mngmt.
Leasing Item Administration
Dunning
Customer Billing
Rewards Points Awards & Red.
Channel Activity Analysis
Channel Activity History
Card Transaction Switch
Delinquent Account
Card Collections

Risk & Compliance

Bank Portfolio & Treasury
Corporate Treasury Analysis
Corporate Treasury
Asset Securitization
Asset & Liability Mngmt.
Bank Portfolio Analysis
Bank Portfolio Administration
Stock Lending/Repos

Models
Market Risk Models
Financial Inst. Valuation Models
Gap Analysis
Credit Risk Models
Liquidity Risk Models
Economic Capital
Business Risk Models
Customer Behavior Models
Fraud Models
Credit/Margin Management
Production Risk Models
Operational Risk Models
Contribution Models

Business Analysis
Segment Direction
Product Portfolio
Customer Portfolio
Branch Portfolio
Channel Portfolio
Competitor Analysis
Market Research
Market Analysis
Contribution Analysis

Regulations & Compliance
Guideline Compliance
Regulatory Compliance
Compliance Reporting
Regulatory Reporting
Fraud/AML Resolution
Financial Accounting

Business Support

IT Mngmt.
IT Systems Direction
IT Stds & Guidelines
Systems Administration
Development Environment
System Development
Production Release
System Deployment
Systems Operations
Platform Operations
Systems Help Desk
Systems Assurance
Internal Network Operation

Non IT & HR Enterprise Services
Legal Compliance
Internal Audit
Security Advisory
Security Assurance
Approved Supplier Directory
Procurement
Company Billing & Payments
Fixed Asset Register

Buildings, Equipment and Facilities
Property Portfolio
Site Operations
Site Administration
Equipment Administration
Equipment Maintenance
Utilities Administration
Building Maintenance

Business Command & Control
Organization Direction
Business Unit Financial Analysis
Business Unit Financial Operations
Business Unit Accounting
Business Unit Direction
Business Unit Management

Finance
Financial Statements
Financial Control
Financial Compliance
Enterprise Tax Administration

Human Resource Mngmt.
Human Resources Direction
Employee Assignment
Employee Data Management
Employee/Contractor Contract
Employee Certification
Employee Evaluation
Employee Payroll and Incentives
Travel and Expenses
Employee Access
Employee Benefits
Workforce Training
Recruitment

Knowledge & IP Mngmt.
Mngmt. Manual
Intellectual Property Portfolio
Knowledge Exchange

Corporate Relations
Corporate Communications
Corporate Alliance/Stakeholder
Corporate Relationship
Regulatory and Legal Authority
Investor Relations

Business Direction
Corporate Strategy
Corporate Policies
Product & Services Direction
Business Architecture
Continuity Planning

Document Mngmt. & Archive
Document Services
Archive Services
Correspondence

BIAN

Helps us to know what to provide as an API Owner

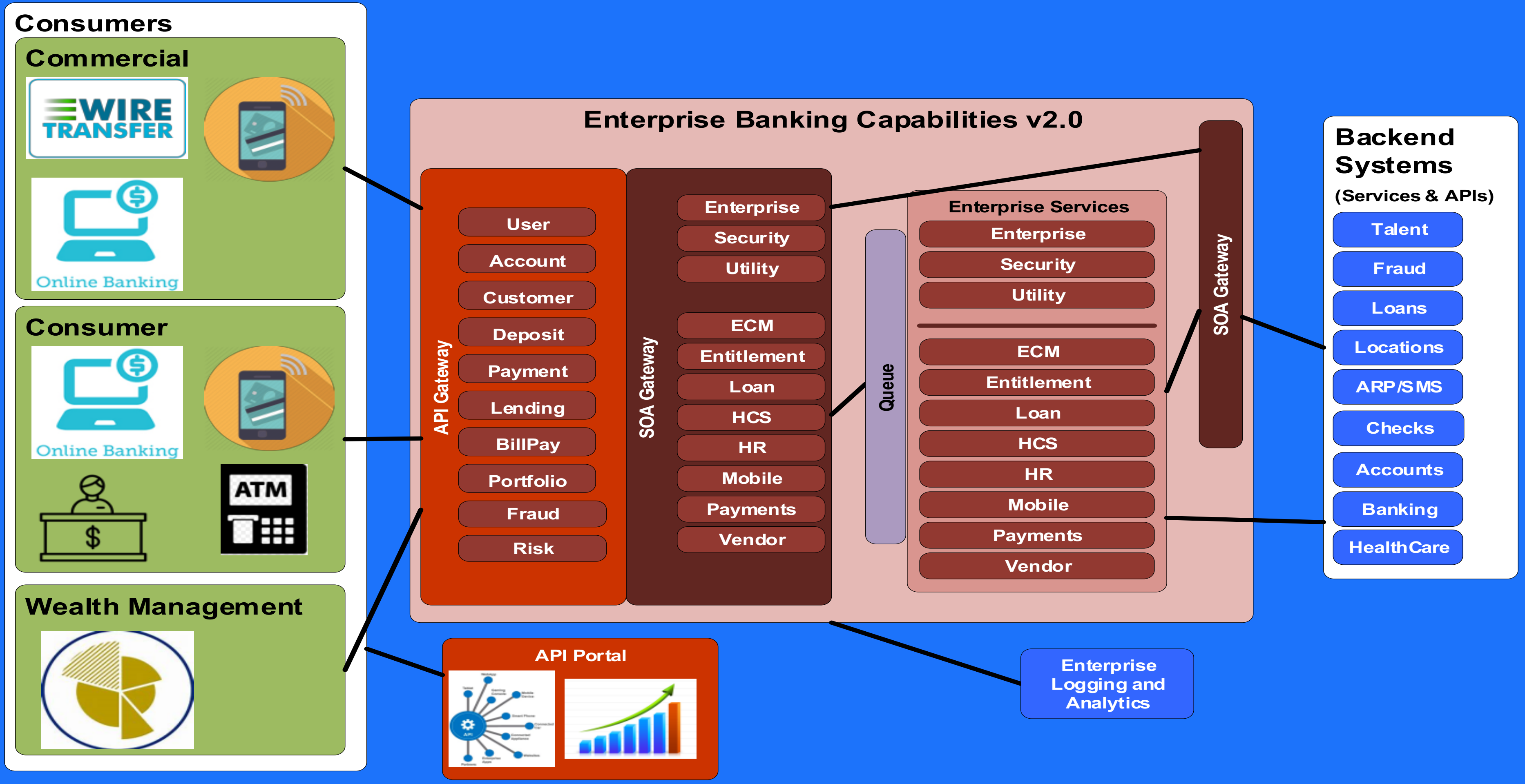
Helps our partners to know what to expect as an API Consumer of our services

Helps us to know what to expect as an API consumer of other companies' services

Banking API Gateway

IBM

1. Banking Capabilities
2. Canonical Model
3. Re-use of Services
4. Catalog of APIs
5. Knowledge of Clients
6. Additional Security
7. Promote APIs



Consumers

Commercial

WIRE TRANSFER

Online Banking

Consumer

Online Banking

ATM

$

Wealth Management

Enterprise Banking Capabilities v2.0

API Gateway

User

Account

Customer

Deposit

Payment

Lending

BillPay

Portfolio

Fraud

Risk

SOA Gateway

Enterprise

Security

Utility

ECM

Entitlement

Loan

HCS

HR

Mobile

Payments

Vendor

Queue

Enterprise Services

Enterprise

Security

Utility

ECM

Entitlement

Loan

HCS

HR

Mobile

Payments

Vendor

SOA Gateway

Backend Systems (Services & APIs)

Talent

Fraud

Loans

Locations

ARP/SMS

Checks

Accounts

Banking

HealthCare

API Portal

Enterprise Logging and Analytics

Capability Framework

- **The Capability Framework is the Glue!**

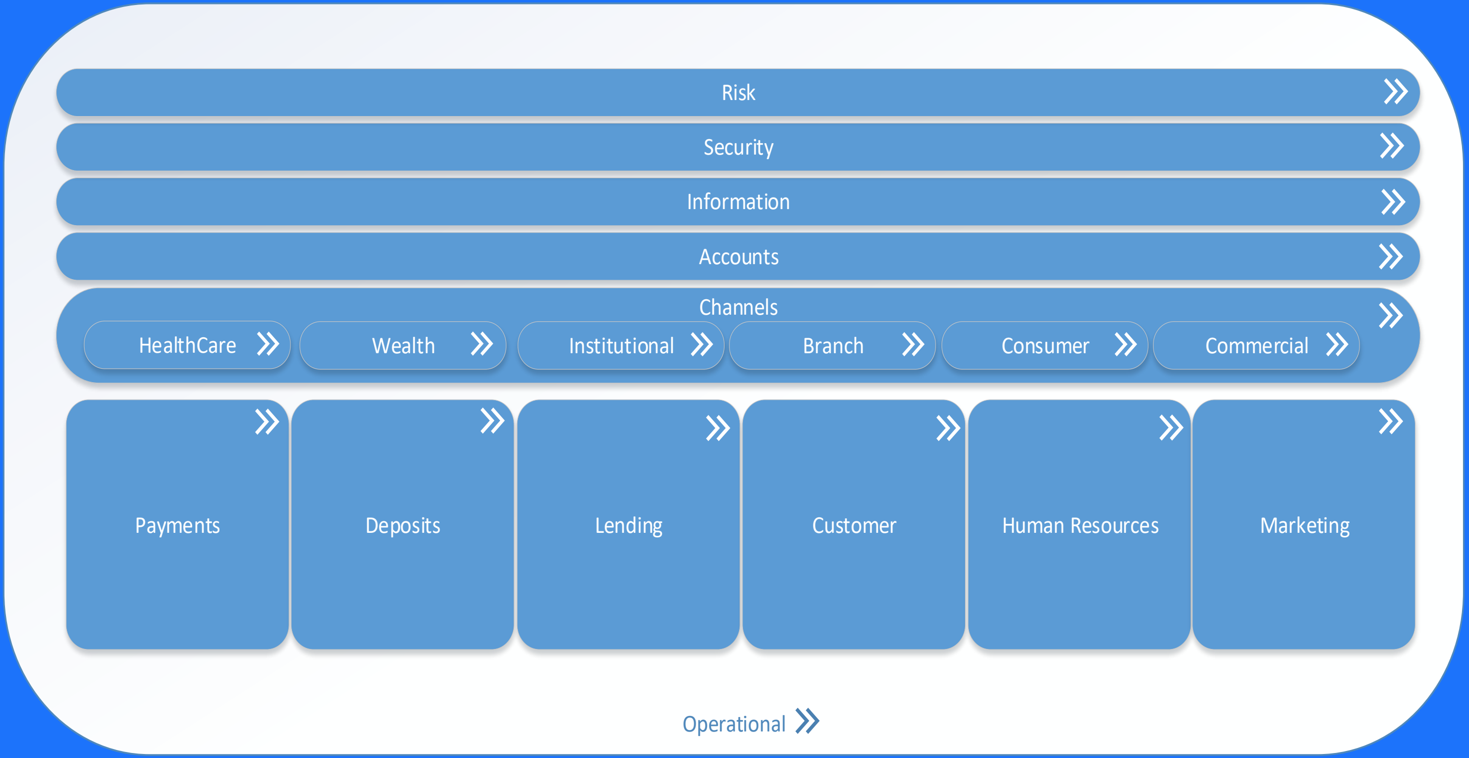
  ✓ To illustrate a starting and ending point for success

  ✓ To understand how best to reuse domain intelligence

  ✓ To break large concepts to small ones

Align Capability Framework with BIAN Model

BIAN = Banking Industry Architecture Network



Risk

Security

Information

Accounts

Channels

HealthCare

Wealth

Institutional

Branch

Consumer

Commercial

Payments

Deposits

Lending

Customer

Human Resources

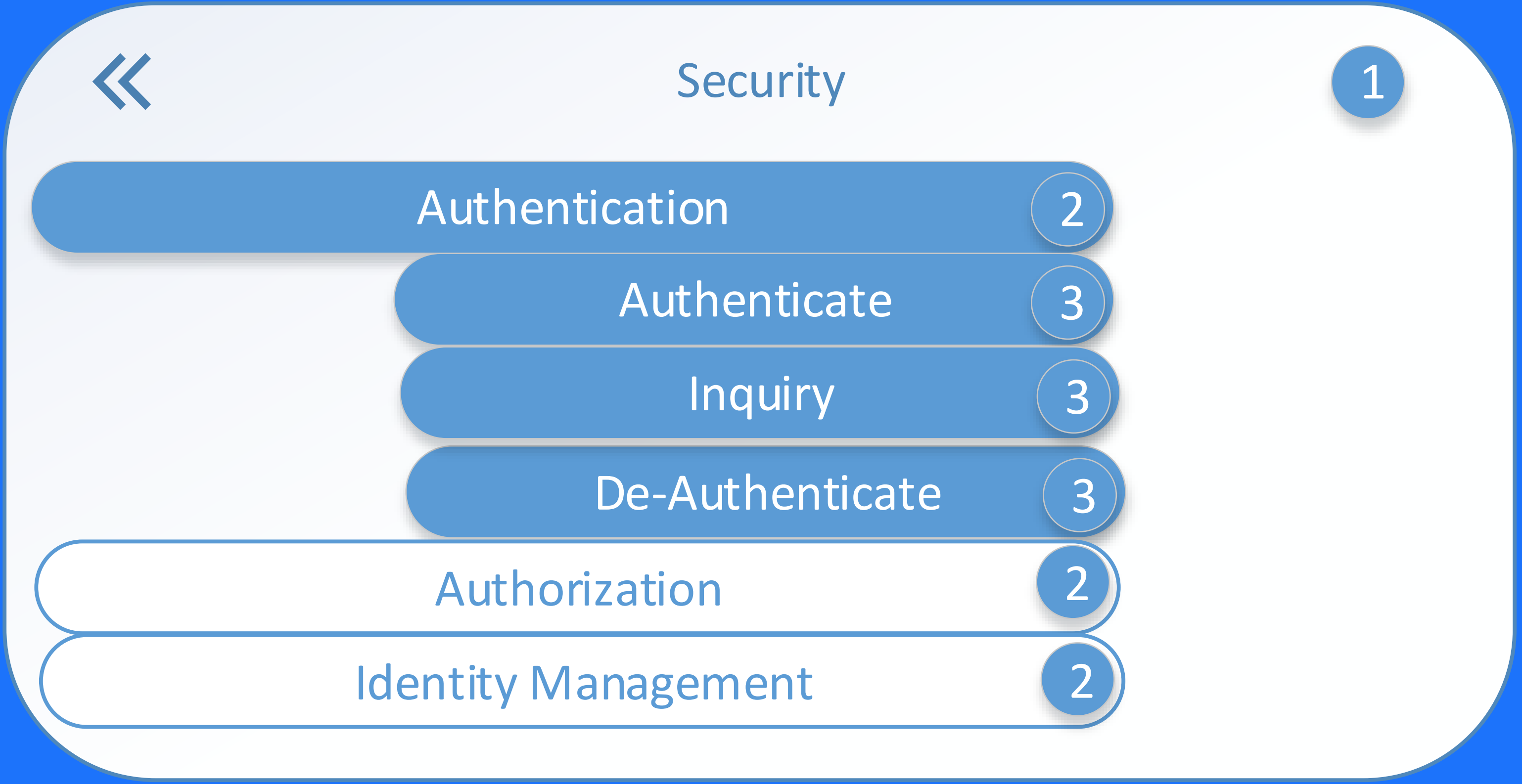
Marketing

Operational

Capability Framework - Domain

- **Domains break down to capabilities**

Last Update: 4/4/2019



« Security 1

Authentication 2

Authenticate 3

Inquiry 3

De-Authenticate 3

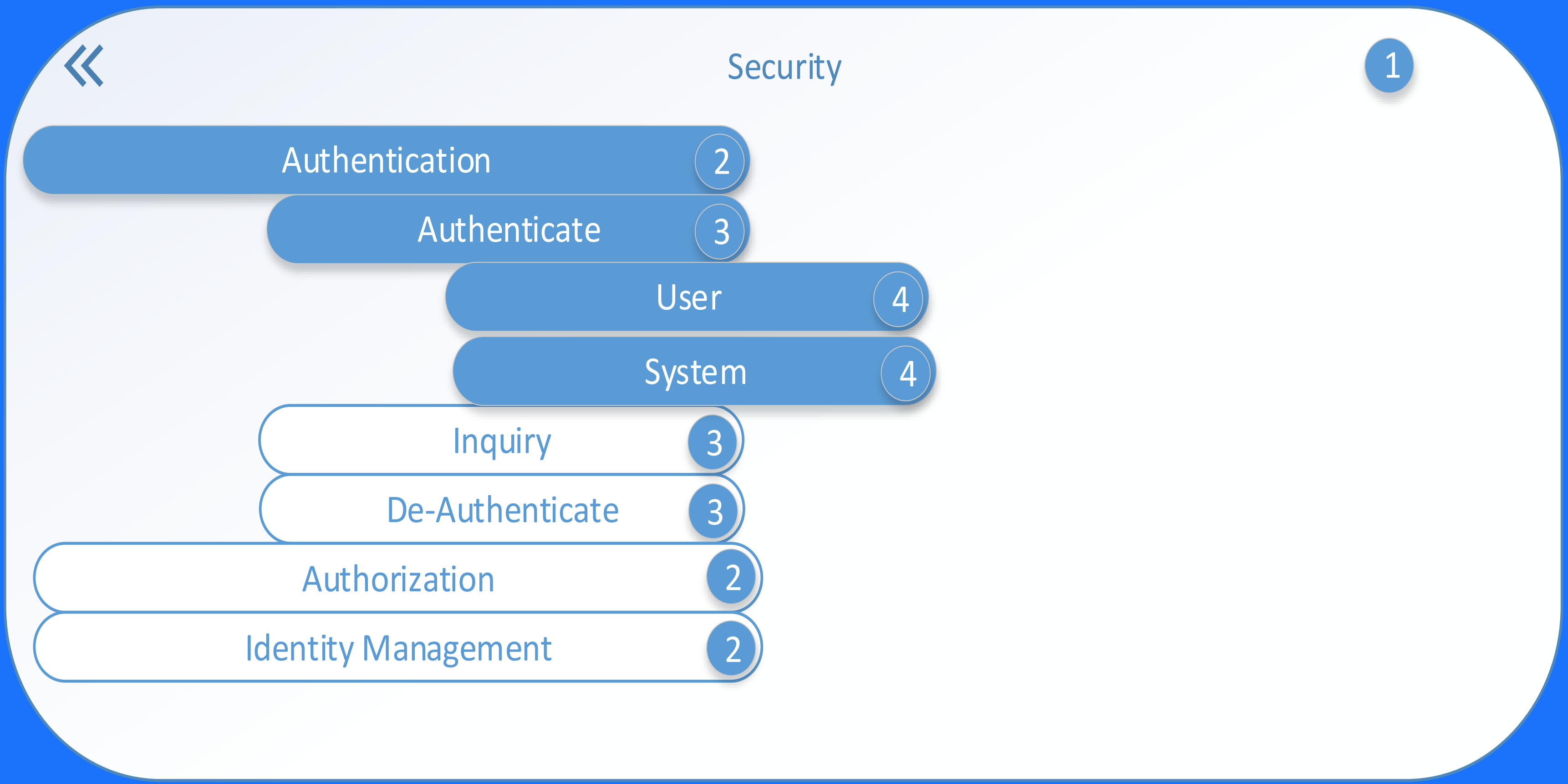
Authorization 2

Identity Management 2

Capability Framework - Capability

- **Capabilities break down to a category**

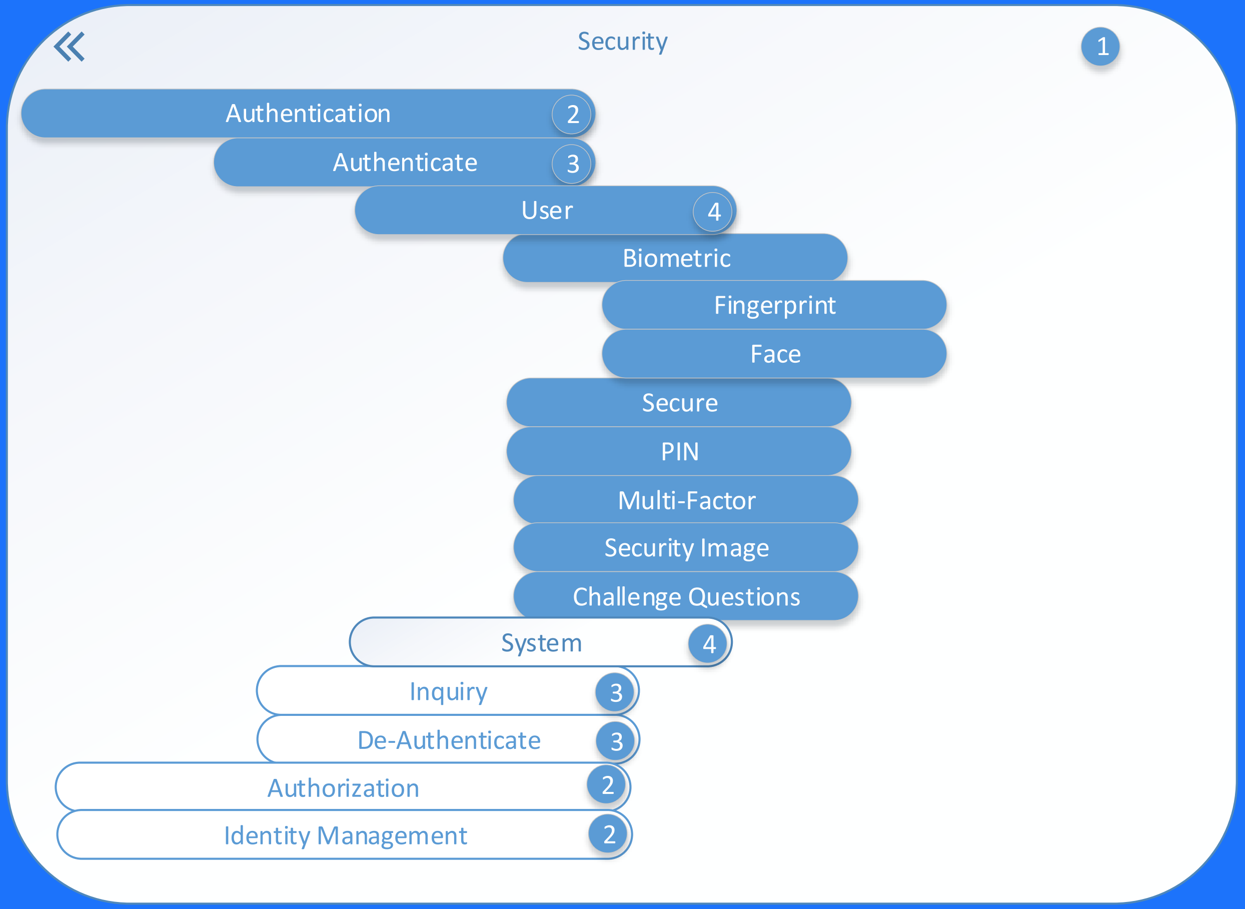
Last Update: 4/4/2019



Capability Framework - Capability

- **We can continue to break down and refine work**

Last Update: 4/4/2019

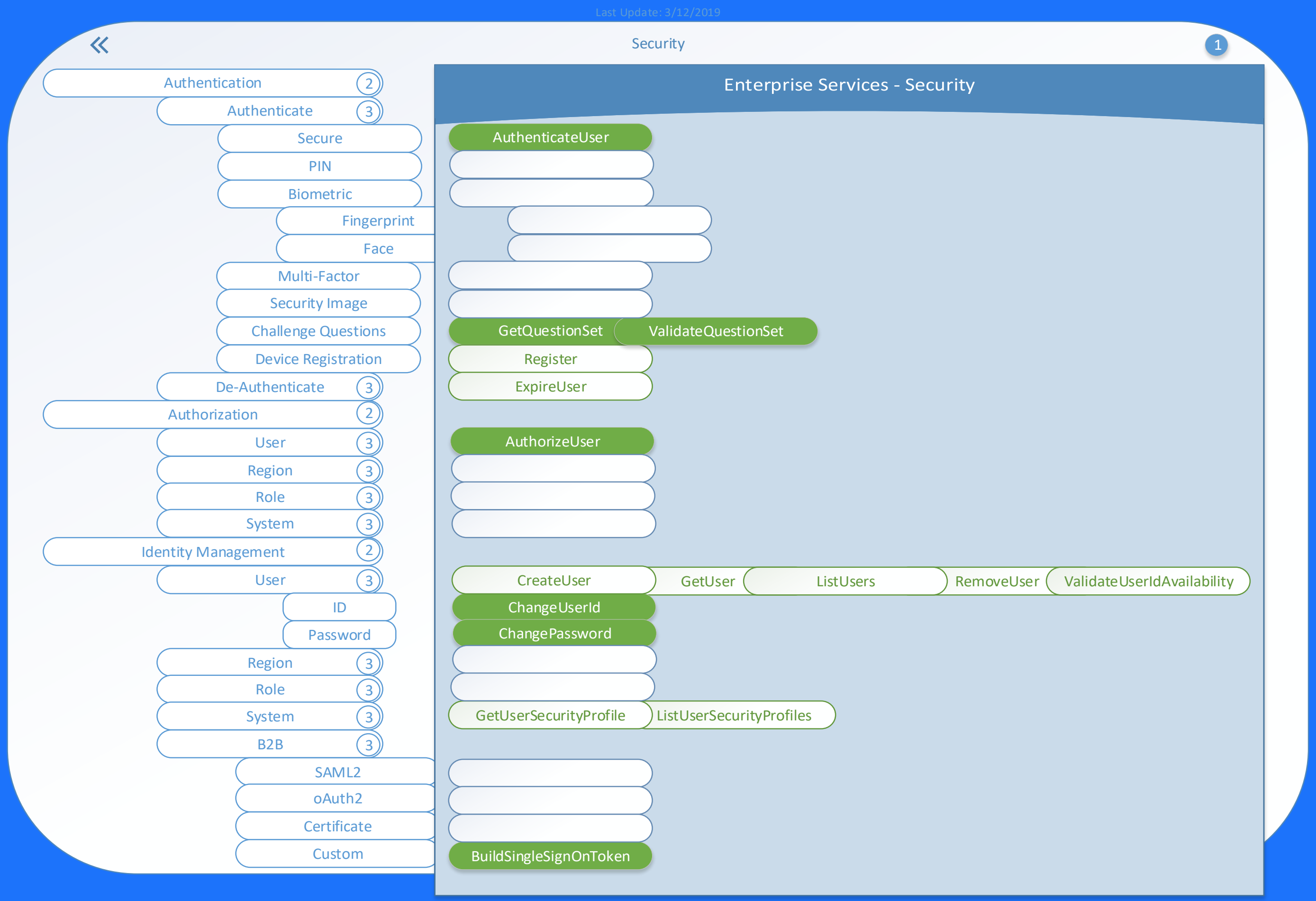


Security 1

- Authentication 2
  - Authenticate 3
    - User 4
      - Biometric
        - Fingerprint
        - Face
      - Secure
      - PIN
      - Multi-Factor
      - Security Image
      - Challenge Questions
    - System 4
  - Inquiry 3
  - De-Authenticate 3
- Authorization 2
- Identity Management 2

Capability Framework - Capability

- Break it down to the smallest component.
- End result matches swagger and models.



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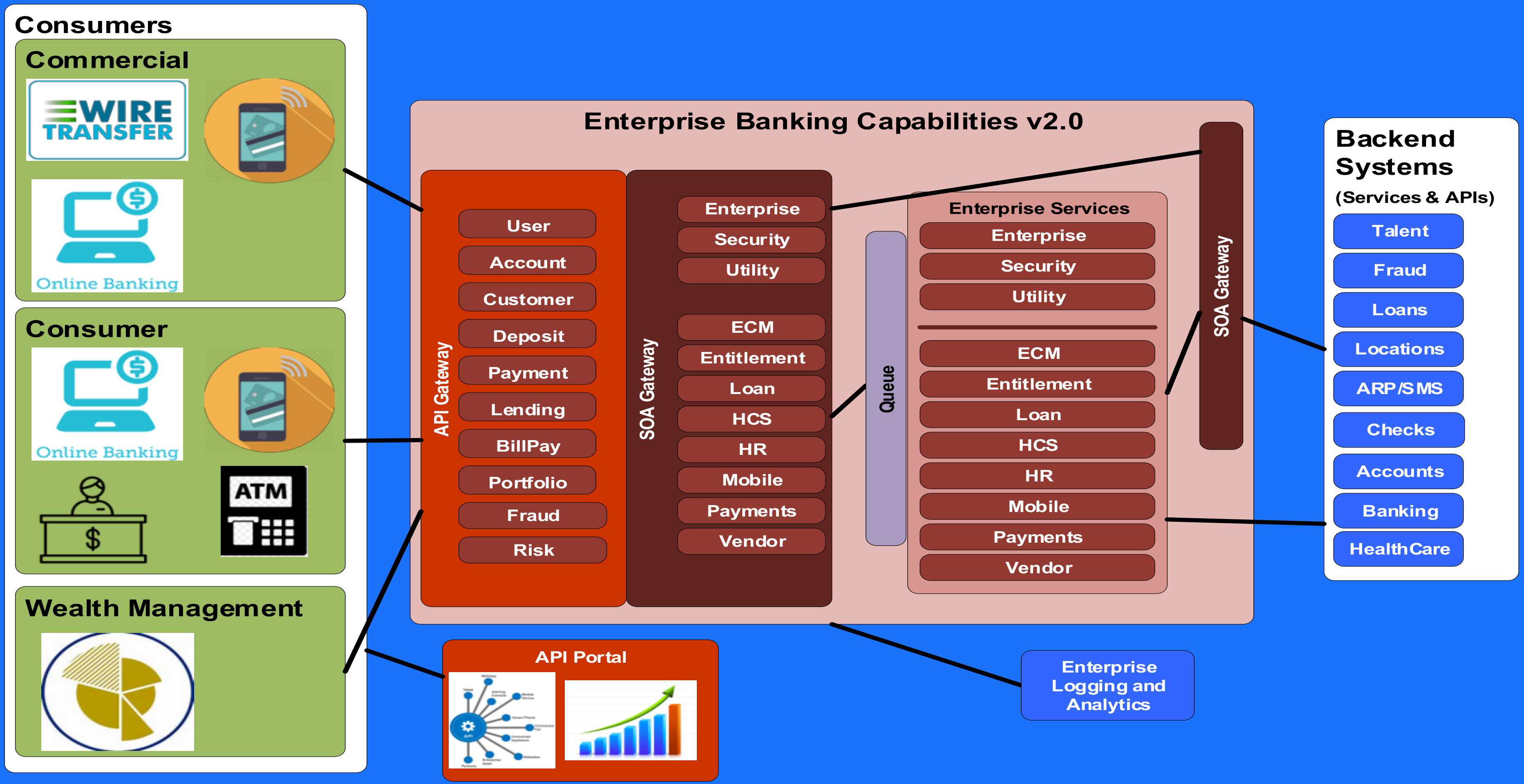

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ECM
Entitlement
Loan
HCS
HR
Mobile
Payments
Vendor

Queue

Enterprise Services

Enterprise
Security
Utility
ECM
Entitlement
Loan
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Vendor

SOA Gateway

Backend Systems (Services & APIs)

Talent
Fraud
Loans
Locations
ARP/SMS
Checks
Accounts
Banking
HealthCare

API Portal

Enterprise Logging and Analytics

5 Key Take a Ways

1. Plan your Design
2. Plan your Delivery
3. APIs First
4. Version
5. Plan for Production

Plan Your Design

1. Define your canonical model
   - Based on Capabilities
   - Consider Source Systems
   - Don’t consider presentation
   - Build Micro-ish Services

2. Define your APIs
   - Based on you canonical model
   - Consider your consumer applications
   - Presentation shouldn’t be considered

3. Use the Tool you plan to deliver with
   - Build your swagger from your delivery tool

Plan Your Delivery

1. PLAN
   - Design API
   - Services vs API's
   - Realistic estimates
   - Match demand with Capacity
   - Speed compromises quality

2. ORGANIZE
   - Follow model and capabilities
   - Deliver By: Capability or Product Line
   - Delivery Complete Service/API
   - Plan major enrichments with major version

3. TEST
   - Define and build re-usable test scripts
   - Consider Environments
   - Reduce defects

APIs First

1. Deliver APIs
   - Deliver APIs before Usage
   - Organized Delivery
   - Meet your sprint dates
   - Reduce Noise

2. Expect Business APIs
   - Business Specific Formatting
   - Deliver what is promised
   - Presentation can be considered

3. Plan Testing
   - Application testing
   - Stubbed services

API Versions

1. Light-weight Governance
   - Governance Overkill
   - Keep it simple and workable
2. Plan for the lifecycle
3. Plan to handle mix versions
4. Communicate release notes
5. Plan Consumers upgrades
6. Version Support

Plan for Production

1. Access and Permission
   - Access to Portal
   - Access to Gateway
   - Access to APIs
   - Communication Security

2. Protect Your Data
   - Internal
   - External
   - Different API response payload per consumer or consumer type

3. Support
   - Portal
   - Gateway Execution
   - On-call

4. SLA’s & Analytics & Dashboards
   - Reports that will be distributed
   - Specific reports for banking units (limit the noise)

Thank You