



IBM Global Services, Business Consulting Services

Internal Revenue Service

Business Systems Modernization and IBM

June 23, 2005





Topics for Discussion

- Profile of IRS Business
- IRS Business Systems Modernization Operating Model
- IBM's Participation in IRS Modernization

IRS Business Profile – A Large and Complex Organization



In 2003:

- ✓ *Answered 118 million calls*
- ✓ *Served 10 million walk-in customers*
- ✓ *Processed 222 million returns*
- ✓ *Processed 128 million refunds*
- ✓ *Collected \$1,952,929,045,000*
- ✓ *Nearly 100,000 employees worldwide*
- ✓ *Cost of collections \$.48/\$100*
- ✓ *Nearly 52 million returns filed electronically (51% in 2004)*
- ✓ *More than web site 2 billion hits*
- ✓ *Over 33 million refunds directly deposited to taxpayers*

IT Environment:

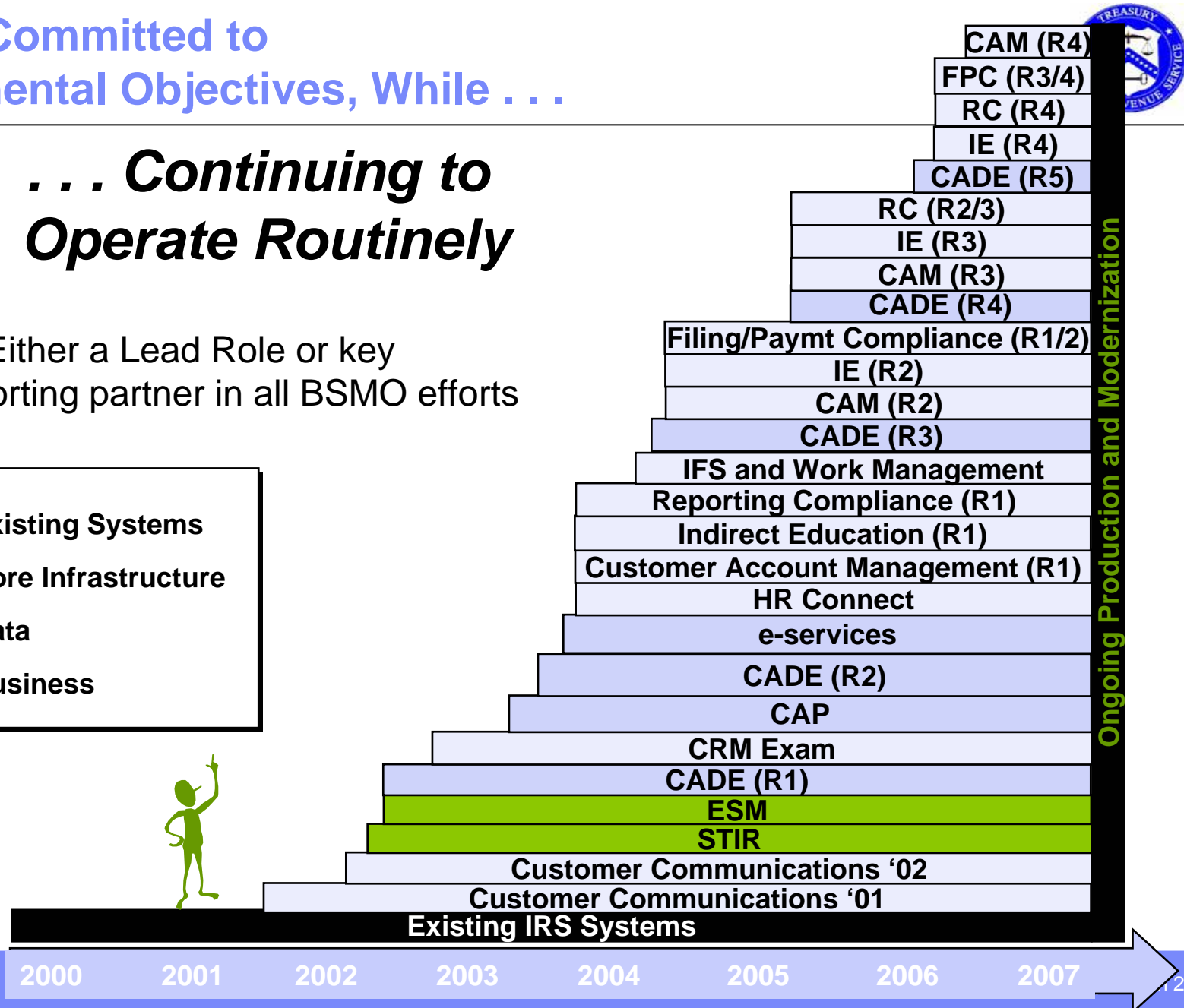
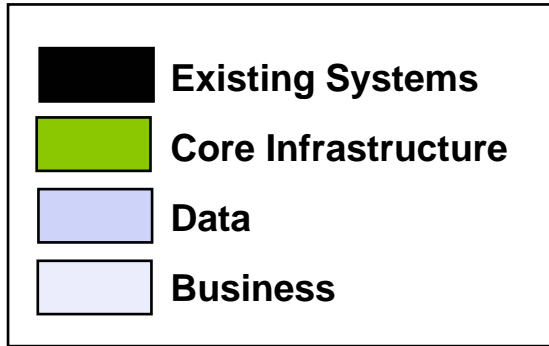
- ✓ **Tape-based Master Files (circa 1963)**
- ✓ **Stove-piped applications map to old organizational structure and reflect tax code provisions**
- ✓ **Large, diverse technology inventory:**
 - 16 mainframe computers
 - 870 midrange computers
 - 100,000+ individual computers
 - 2,775 vendor supplied software products
 - 50 million lines of IRS-maintained computer code
 - Over 500 identified individual business applications
- ✓ **19% of total IRS budget (GFY05 @\$1.6B)**



IRS is Committed to Monumental Objectives, While . . .

. . . Continuing to Operate Routinely

- IBM Either a Lead Role or key supporting partner in all BSMO efforts



IRS Today Is Driven by a New Mandate . . .



Mission Statement

Provide America's taxpayers top quality service by helping them understand and meet their tax responsibilities and by applying the tax law with integrity and fairness to all.

Goals

Improve Taxpayer Service

- Improve service options for the tax paying public
- Facilitate participation in the tax system by all sectors of the public
- Simplify the tax process

Enhance Enforcement of the Tax Law

- Discourage and deter noncompliance with emphasis on
- corrosive activity by corporations, high-income individual taxpayers and other contributors to the tax gap
- Ensure that attorneys, accountants and other tax practitioners adhere to professional standards and follow the law•
- Detect and deter domestic and off-shore based tax and financial criminal activity
- Deter abuse within tax-exempt and governmental entities and misuse of such entities by third parties for tax avoidance or other unintended purposes

Modernize the IRS Through Its's People, Processes, and Technology

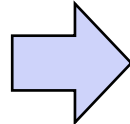
- Increase organizational capacity to enable full engagement and maximum productivity of Employees
- Modernize information systems to improve service and enforcement
- Ensure the safety and security of people, facilities and information systems
- Modernize business processes and align the infrastructure support to maximize resources devoted to frontline operations



. . . Calling for Massive Change . . .

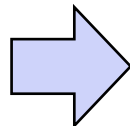
Business Systems Modernization Program Initiative

**Customer-Focused
Operating Divisions**



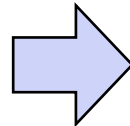
- Restructure the IRS' national and regional offices and operations into four customer-facing business units

**Management Roles
with Clear
Responsibility**



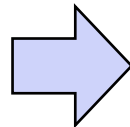
- Redefine management roles and responsibilities to improve communication, productivity, and employee satisfaction

**Balanced Measures
of
Performance**



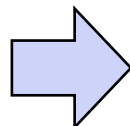
- Establish an appropriate balanced measurement system by assigning responsibility at all levels and developing quantitative measures for the three IRS strategic goals

**Revamped
Business
Practices**



- Create new business practices and redesign existing one to improve accessibility, accuracy, speed and timeliness of service

**New
Technology**

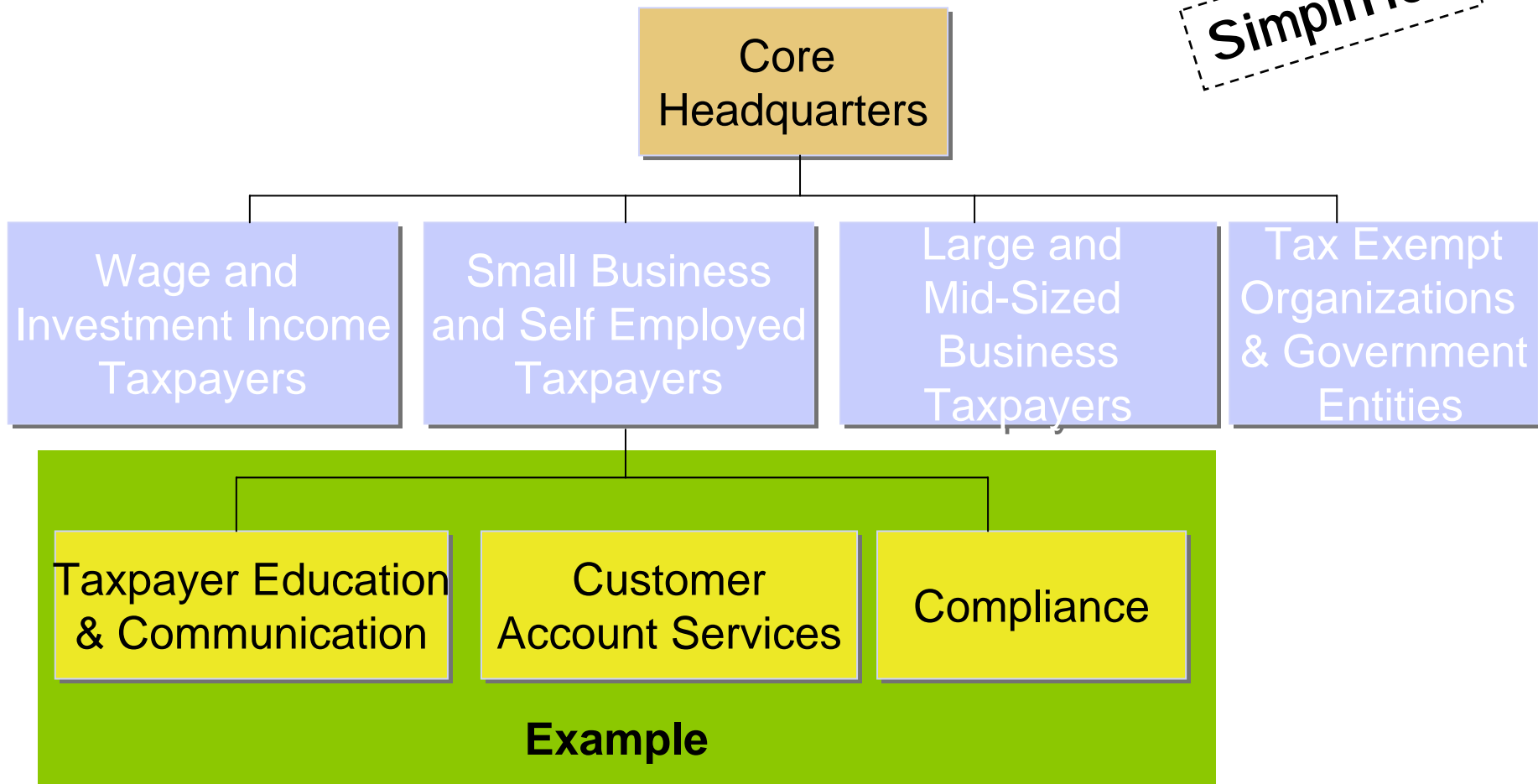


- Develop and implement the new systems and technology necessary to enable the modernized IRS

. . . With a New Organizational Approach, and . . .



Simplified

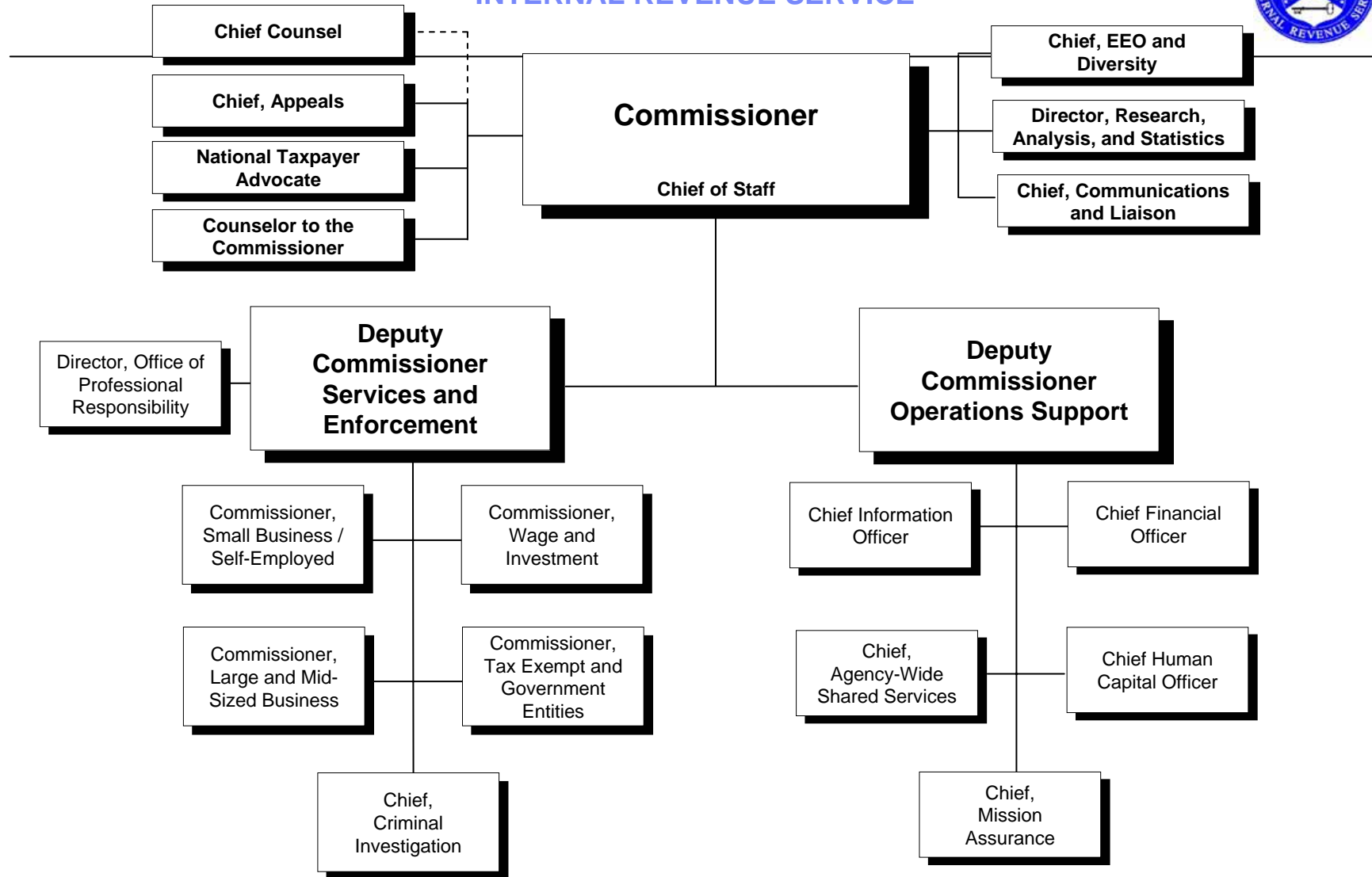


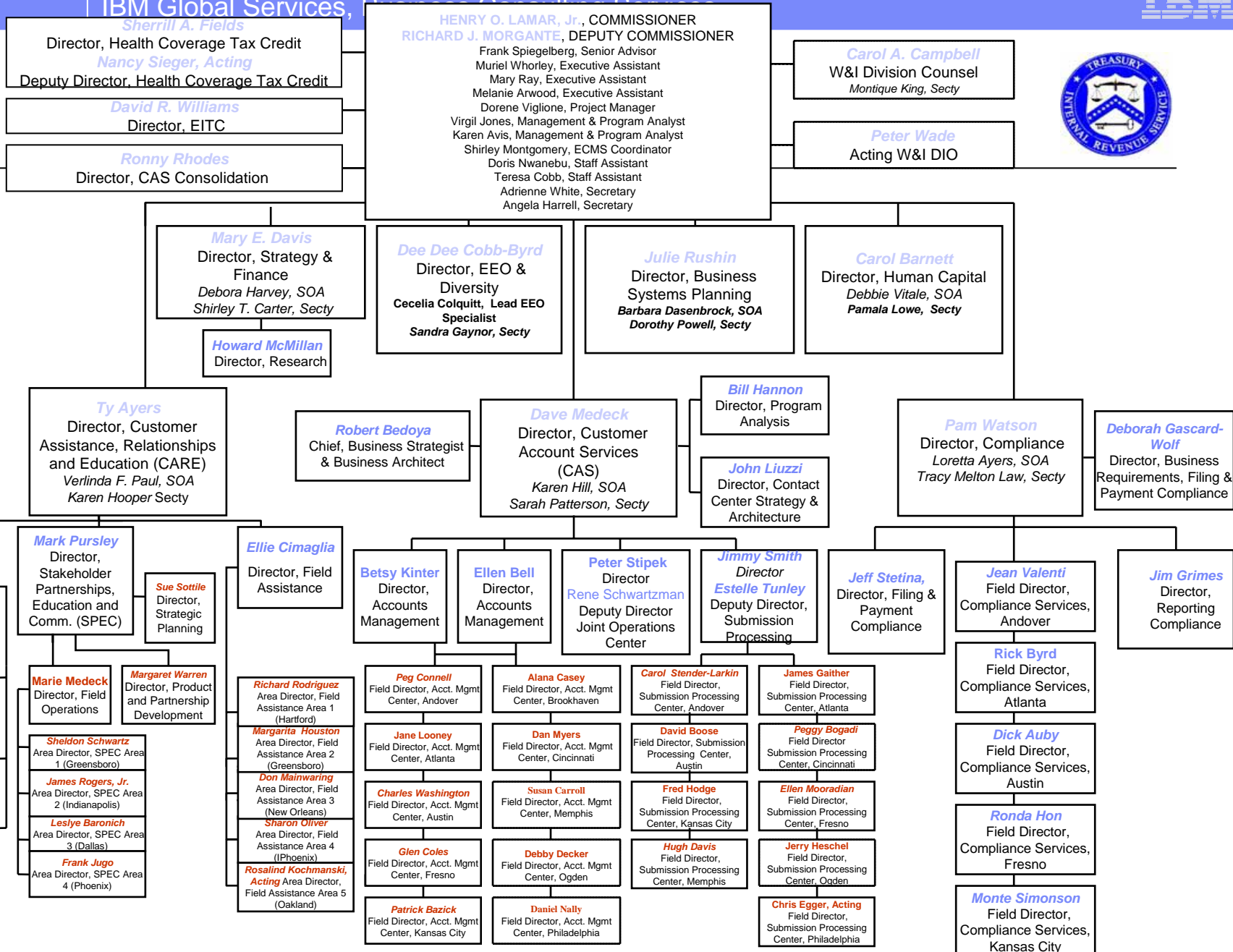


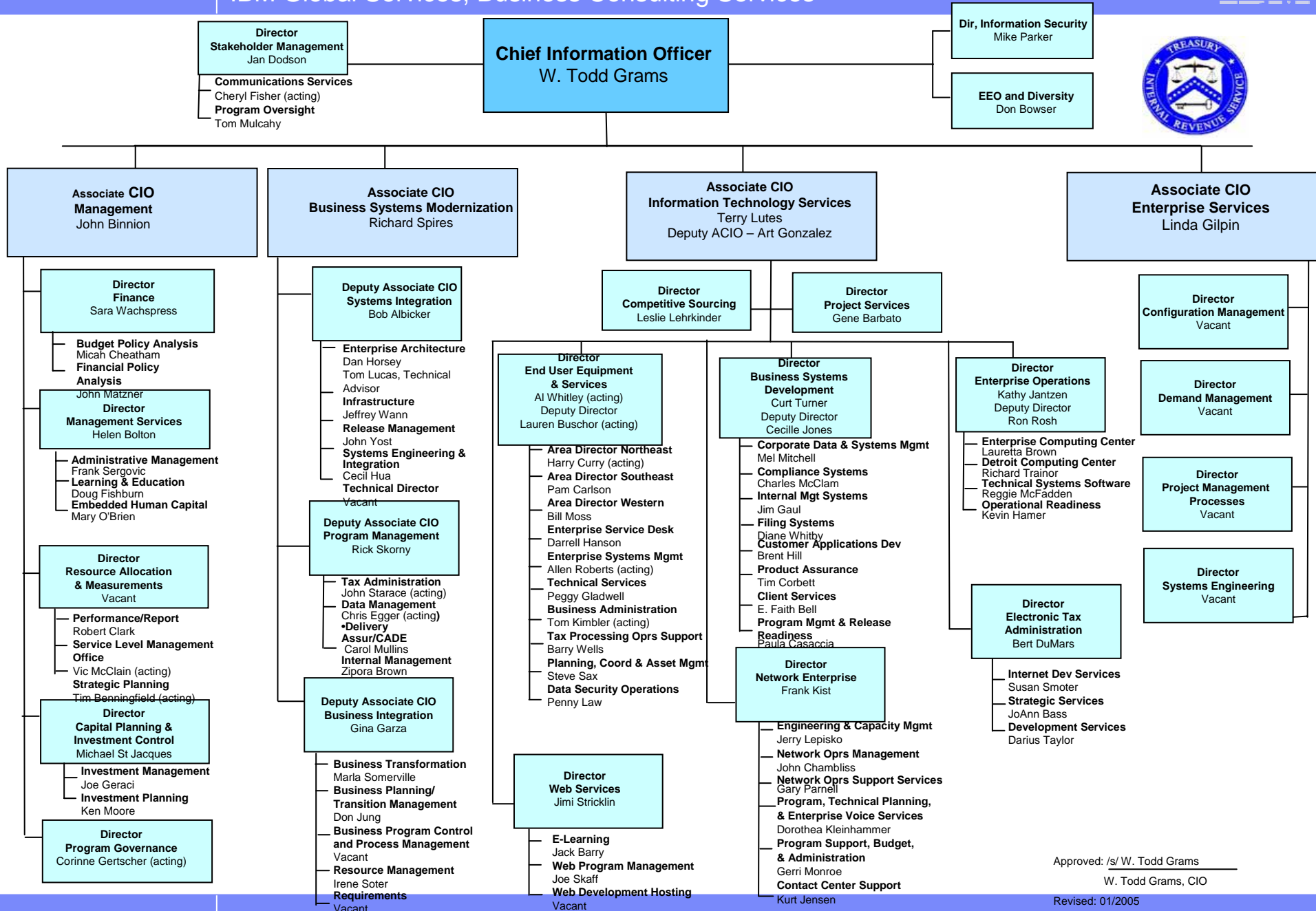
. . . A New Business Systems Modernization Program

- Revamped Business Practices improving along four dimensions
 - Accessibility: making the right information and expertise available at the right time via alternative methods
 - Accuracy: increasing the accuracy of every transaction by providing correct information
 - Speed: responding rapidly to customer requests by creating and managing end-to-end processes to ensure quick turn-around times
 - Timeliness: Identifying and correcting problems at appropriate points so that customers receive services at the right time
- Adding New Technology
 - Focus on the needs of customers while using the latest technology to improve service delivery
 - Sustain existing operations and, where necessary, additional services while modernizing

DEPARTMENT OF THE TREASURY INTERNAL REVENUE SERVICE







Approved: /s/ W. Todd Grams

W. Todd Grams, CIO

Revised: 01/2005



Topics for Discussion

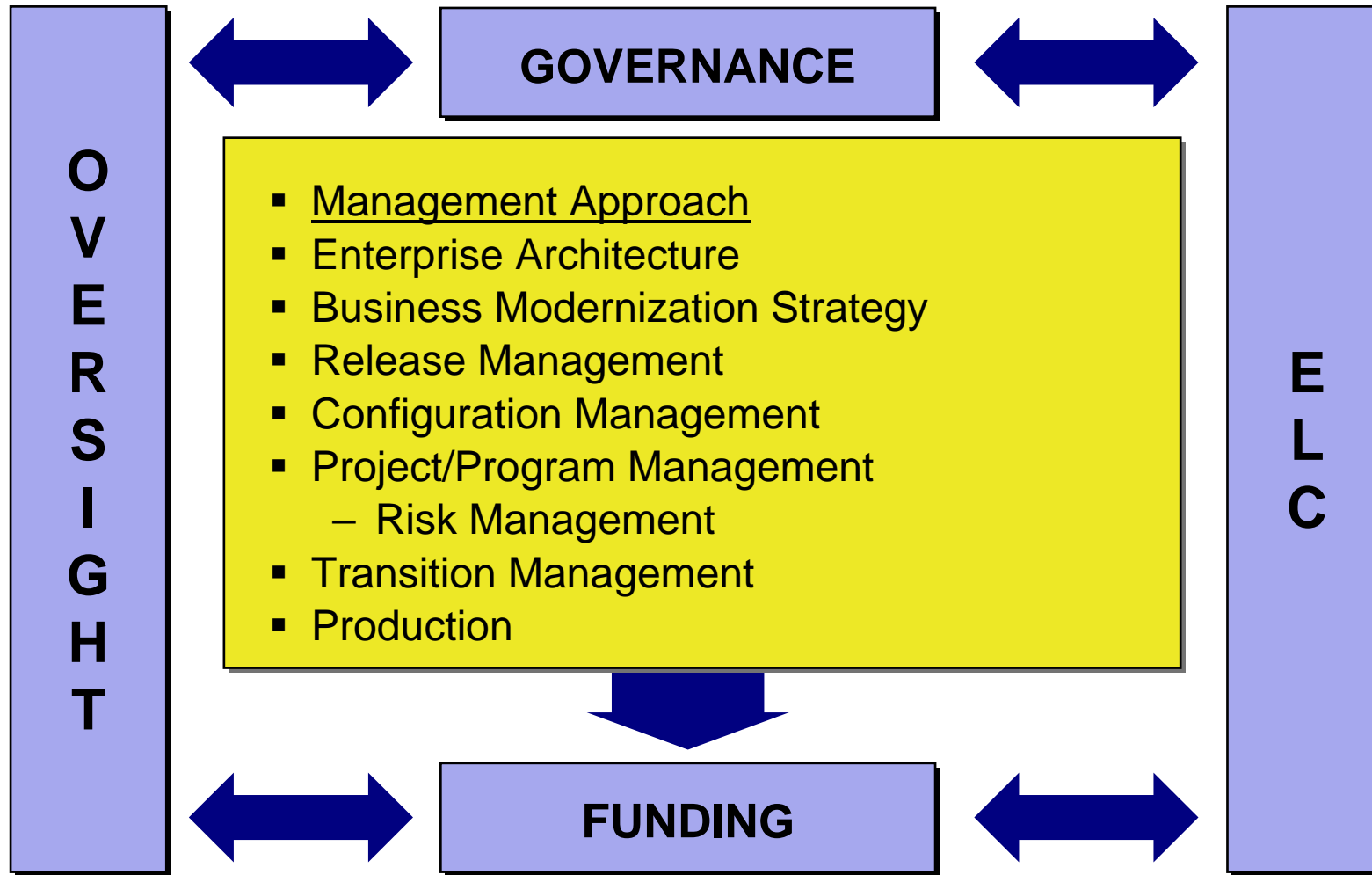
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BSM Is Delivering

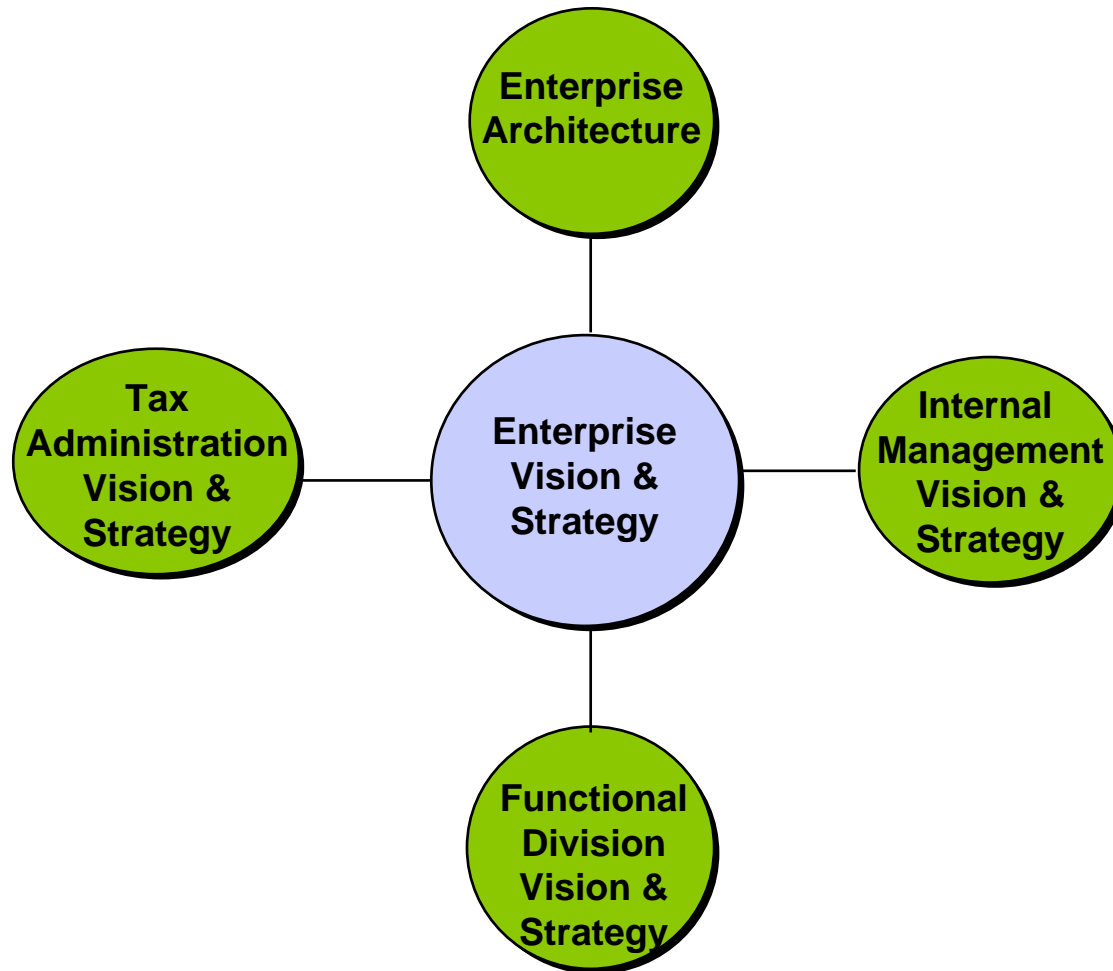


- Major deliverables from 2001 to 2005:
 - Improved customer service access from a new phone routing system (IBM key partner)
 - Highly improved answer quality to taxpayers over the phone from additional data directed routing (IBM key partner)
 - Initial replacement of 1960's tape based core data repository with first releases of Customer Account Data Engine (Led by IBM)
 - Lay the groundwork for secure Internet communications from new infrastructure projects (Led by IBM)
 - Modernized and consolidated internal financial management systems (IBM key partner)
 - Permit third party registration allowing on line--powers of attorney, transcripts and access to ID number matching for withholding payers—via a new registered users portal (IBM key partner)
 - Modernized on-line filing of tax return data, including massive business tax returns (Led by IBM)
 - Major improvements to existing systems from more than 40 discrete projects (IBM led and partnered)

BSMO Management Framework IBM Provides Consulting Support

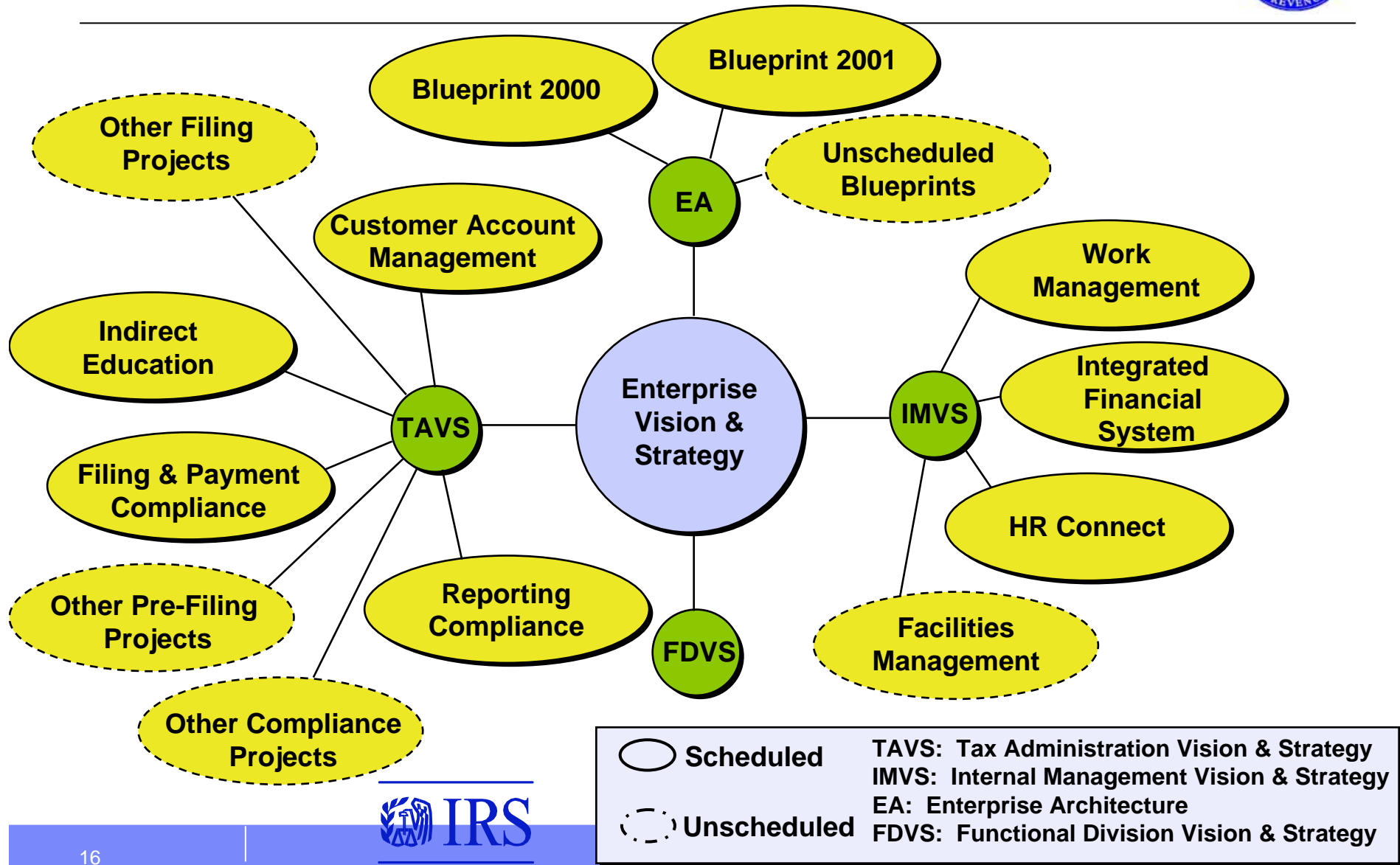


Where BSM is Headed -- Strategically



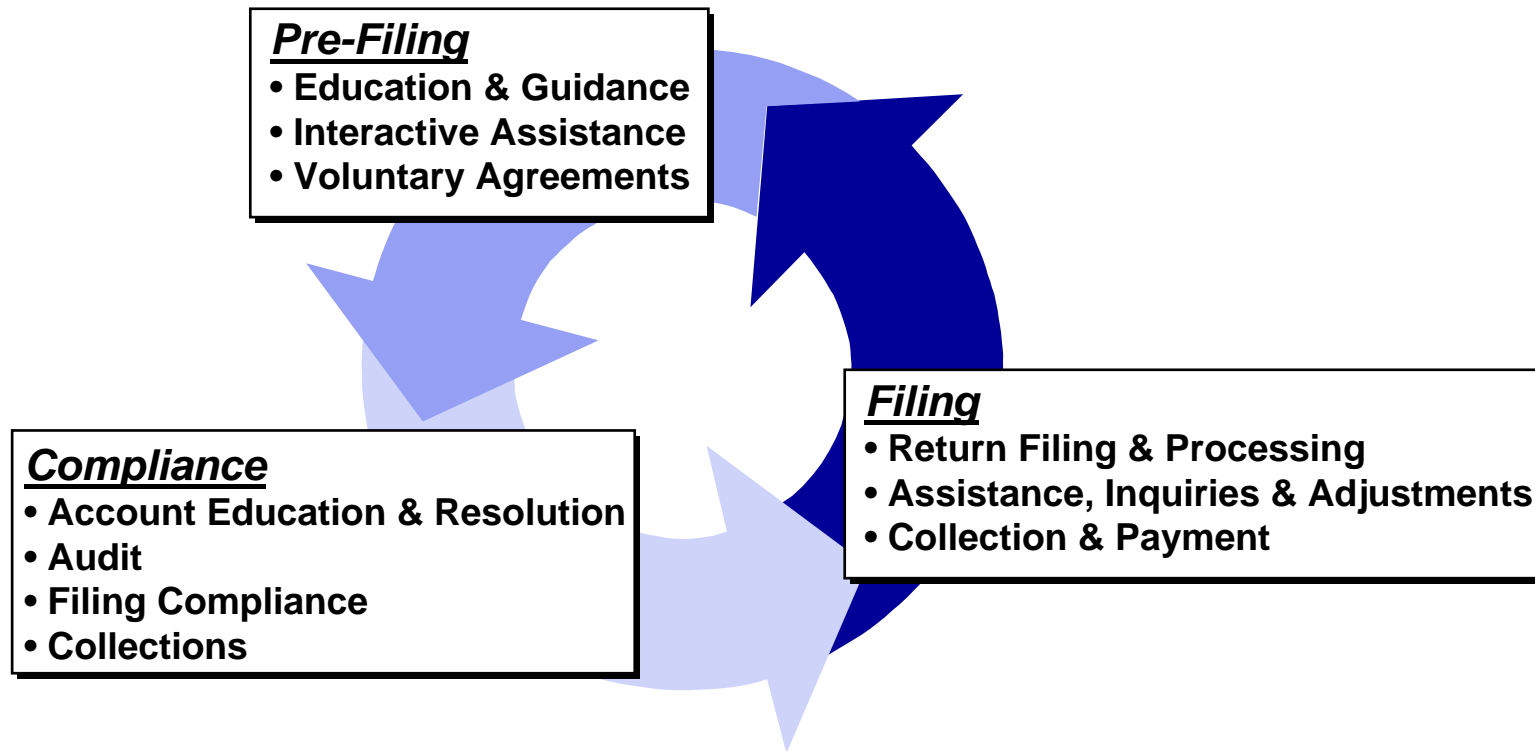


Where BSM is Headed -- Strategically



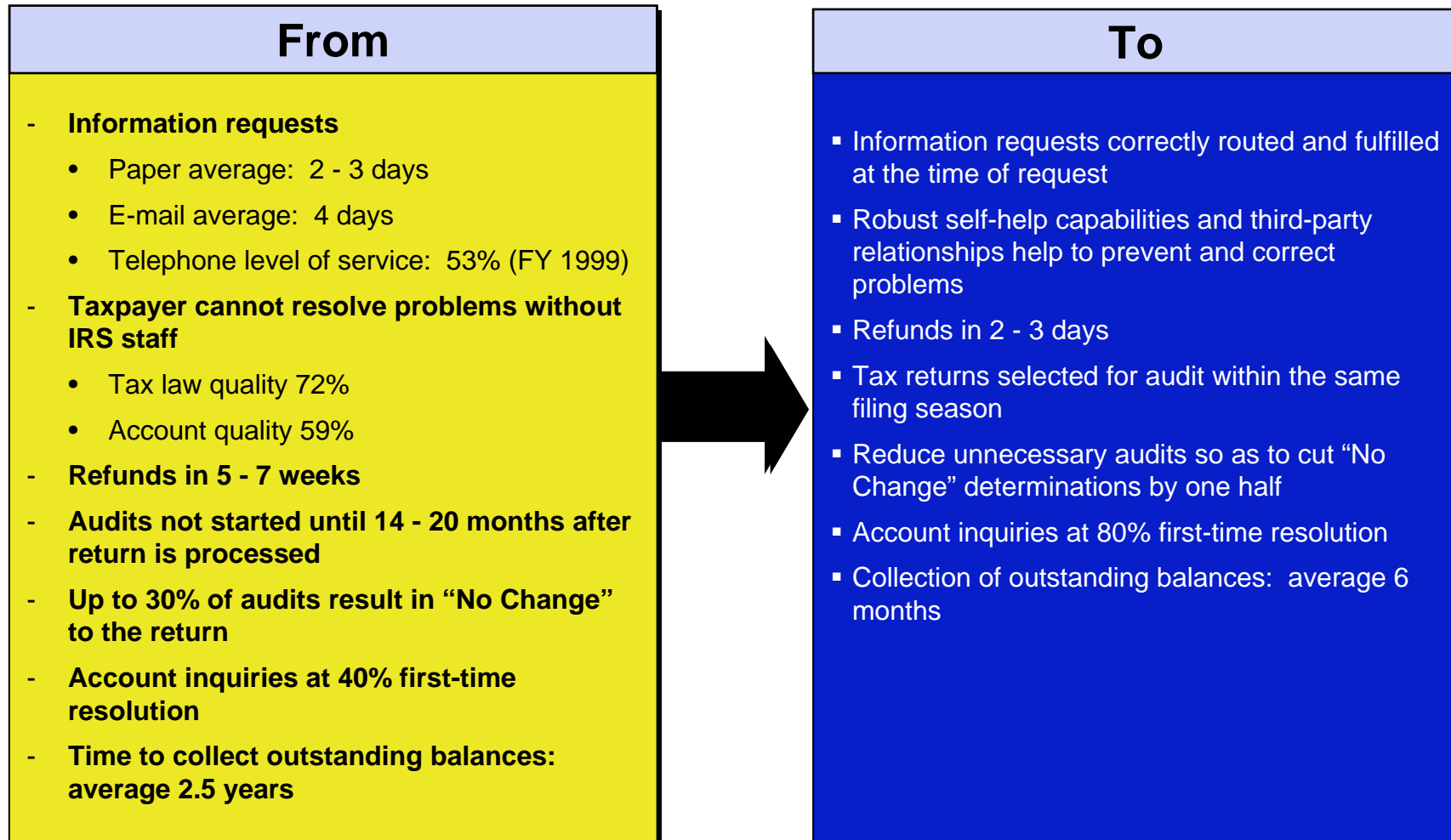


Where BSM is Headed -- Tax Administration Business Operating Model



Focusing Compliance Efforts towards Pre-Filing and Taxpayer Self-Assistance

Where BSM is Headed – The Performance Metrics



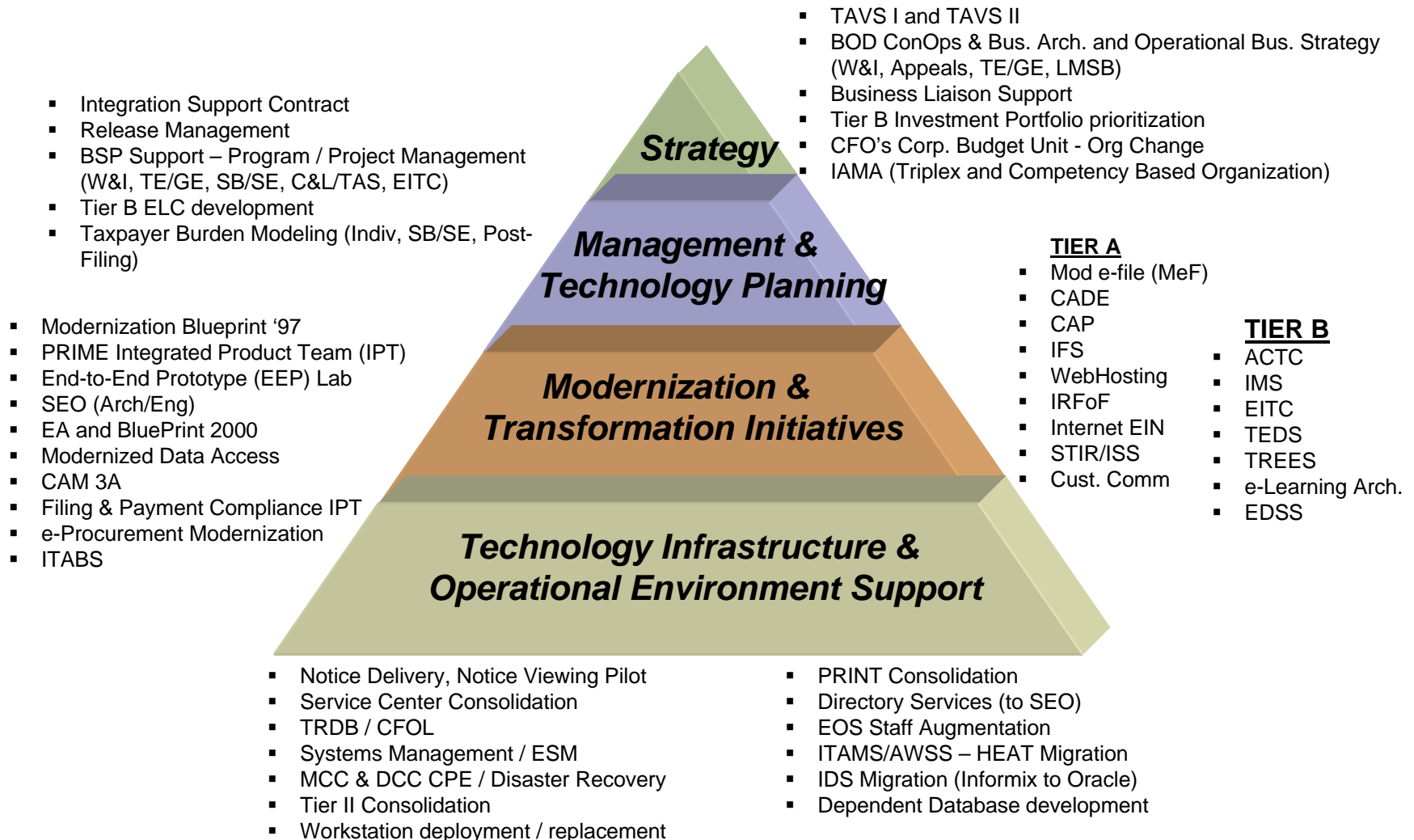


Topics for Discussion

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IBM is engaged in a number of IRS Modernization Efforts





IRS PRIME – “The Team”



IRS Prime Project Summary



- **Key IPT Programs (IBM key partner)**
 - 1) Systems Engineering Office
 - 2) Enterprise Visioning & Strategy
 - 3) Telecommunications
- **Key Competitively Award Programs (IBM led or partnered)**
 - 1) Customer Account Data Engine – CADE (IBM)
 - 2) Enterprise Systems Management (IBM)
 - 3) e-services for Third Parties (Unisys)
 - 4) Customer Communications 2002 (SAIC)
 - 5) Security and Technology Infrastructure Release (STIR) Web Hosting (IBM)
 - 6) STIR IA (Logicon)
 - 7) Integrated Financial System (BearingPoint & SAP/IBM)
 - 8) Modernized e-File (IBM)
- **Key New Initiatives**
 - 1) Customer Account Management
 - 2) Compliance (Filing and Payment, Reporting)
 - 3) Indirect Channel Management – Indirect Education



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Customer Account Data Engine



CADE Overview

- Customer Account Data Engine
- Major function:
 - Incrementally replace legacy system master files with relational database technology (DB2)
 - Become authoritative source for taxpayer account and return data
 - Provide applications for posting, settlement and maintenance of this data

Direct Benefits	Collateral Benefits
<ul style="list-style-type: none"> • Refunds issued in 48 hours • Daily notices with accurate, current data, reducing unnecessary taxpayer burden • Faster notice response times to reduce penalties and interest to taxpayer • Universal access to a single database for consistency and ease of operations • Real-time database update capability increases both service to each taxpayer and overall compliance 	<ul style="list-style-type: none"> • Immediate accurate computations of penalty and interest available to taxpayer and CSR's • Workload leveling of taxpayer contacts • Faster cycle time leads to improved collections (quicker notice mailings and taxpayer response, reducing interest and write-off rate) • Less time resolving inaccurate notices • Robust and flexible development environment • Reduced abandonment rates for phone calls leads to higher customer satisfaction



CADE Functional Components

- Database(s)
- Transaction processing, batch and online
- APIs for application access to data
- Tax computation, account settlement, issue detection
- Business Rules entry, update
- Interfaces to Legacy Systems

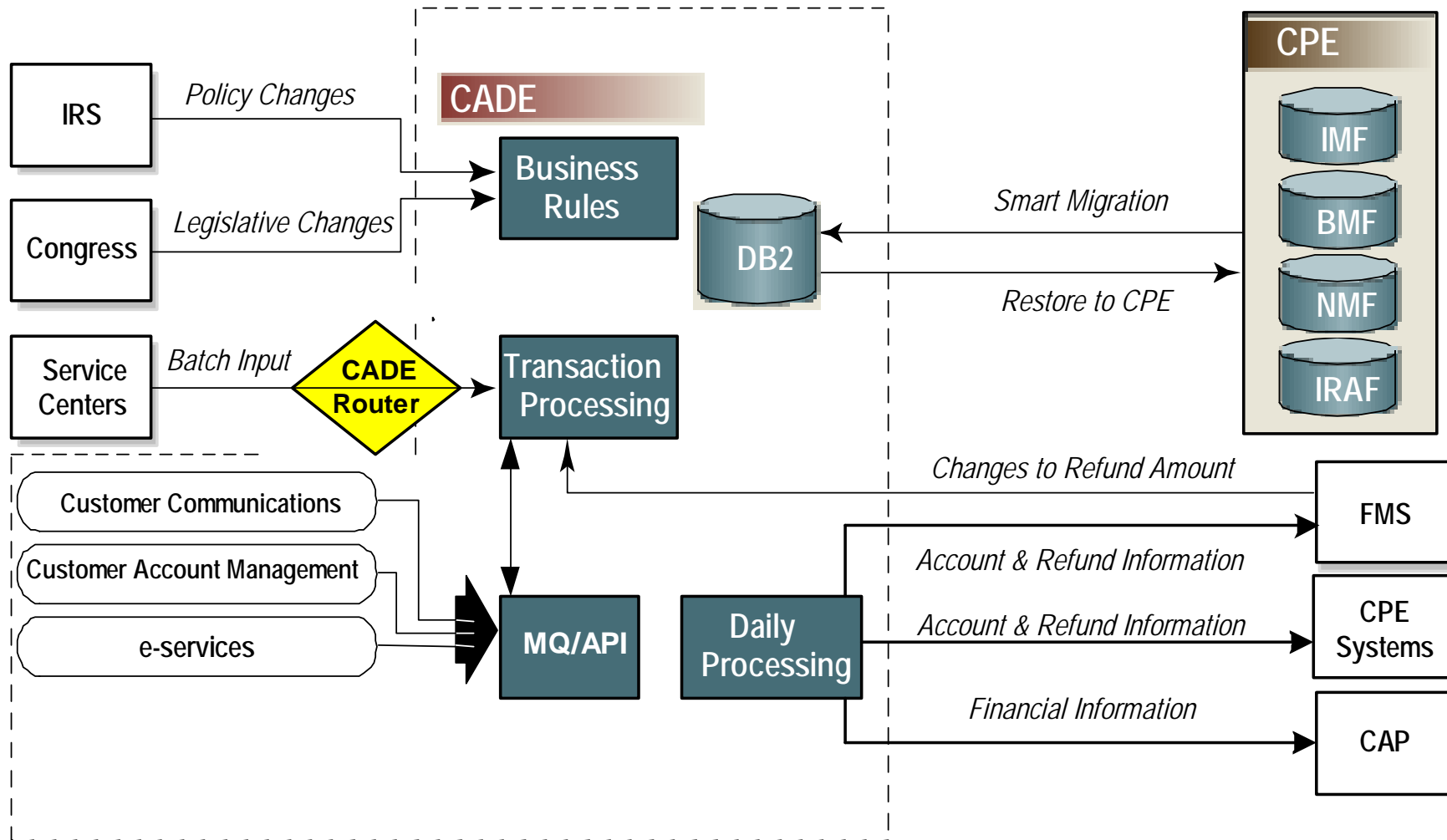


Business Process Improvements

- Centralized, Authoritative Taxpayer Data Store
 - CADE enables real-time processing, updating, and querying of taxpayer data
 - Single source of tax computations, penalty, interest for other systems and users
 - Removes doubt about accuracy of information provided to taxpayers
- Faster Refunds, i.e. 48 hours
 - Daily vs. Weekly processing
- Business Rules Solution facilitate legislative and policy changes
 - Separates business process from computer process
 - Supports IMF, BMF, IRAF, NMF
 - Allows execution of business rules when a transaction arrives, rather than hours or days later
 - Ability to empower business units with ownership of certain rules



CADE Design Context





CADE Project Overview

Proposed CADE Release Schedule

	RELEASE ONE	RELEASE TWO	RELEASE THREE	RELEASE FOUR	RELEASE FIVE
Business Operating Division	Wage and Investment	Wage and Investment	Wage and Investment	Small Business / Self Employed	Wage and Investment Small Business / Self Employed
Proposed Time Frame	TBD	TBD	TBD	TBD	TBD
Filing Status	Single Telefile	Single Joint Head of Household Married (Sep)	Single Joint Head of Household Married (Sep)	Single Joint Head of Household Married (Sep)	Single Joint Head of Household Married (Sep)
Account Characteristics	Electronic Filers No open issues No POA, CAF	Electronic Filers No open issues No POA, CAF	Paper Filers No open issues No POA, CAF	Electronic & Paper No issues No POA, CAF	Electronic and Paper Filers
Returns Types	1040EZ Refund	1040 family Full paid or refund	1040 family Full paid, refund or balance due	1040 with C,E,F 941 for 1040 customers	All individual
Returns (1999)	6 Million	29 Million	41 Million	34 Million	12 Million
Rationale	<ul style="list-style-type: none"> • Low Volume • Low Risk • Check User interface • Test legacy interface • Test accounting interface • Test legacy return process 	<ul style="list-style-type: none"> • Functional for e-filer population 	<ul style="list-style-type: none"> • Major addition of accounts to data stores lowers transaction and performance risk due to July timeframe 	<ul style="list-style-type: none"> • Major functionality increase with employment tax additions • Major population increase, adds SB/SE 1040 filers 	<ul style="list-style-type: none"> • Removing last cases from IMF and IDRS will be complex task
Dependencies	<ul style="list-style-type: none"> • Read Only Web Client • STIR 	<ul style="list-style-type: none"> • Read Only Web Client 	<ul style="list-style-type: none"> • Workflow • Work item inventory • Work item assignment • Common contact or case history data store 	<ul style="list-style-type: none"> • Collection with Employment Tax modules 	<ul style="list-style-type: none"> • Information Returns Data Base must be available* • Exam modules • POA/CAF

*IRDB project should be started by 2001, in order to complete the database and its processes, to enable the end of IMF information return processing in legacy



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Modernized e-File (MeF)



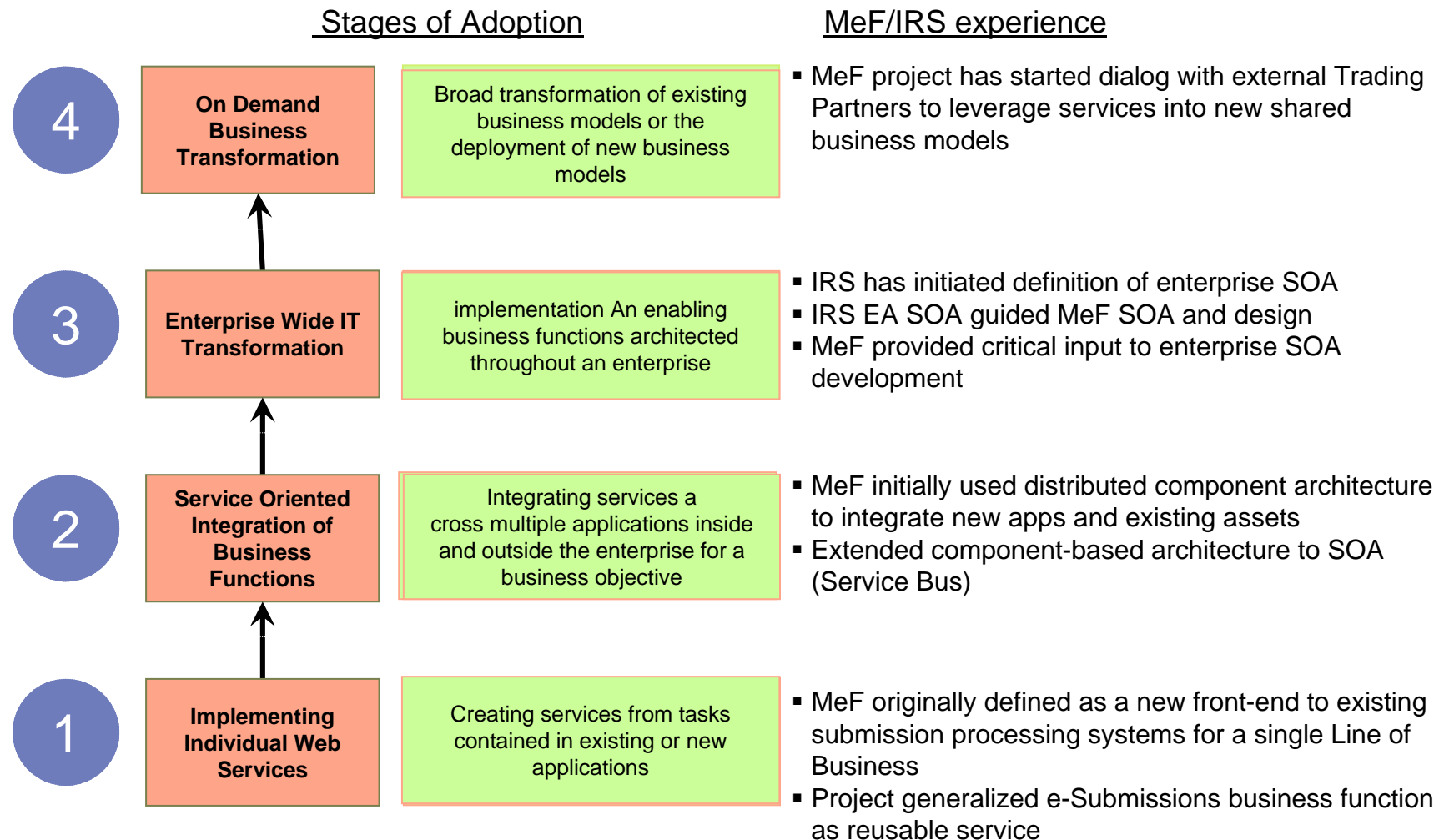
MeF Project Supports IRS Strategic Goals

IRS e-Government Goals for 2007	MeF Project Benefits
<ul style="list-style-type: none"> ▪ Electronically file 80 percent of individual tax returns, business tax returns, and information returns ▪ Reduce fully burdened IRS per return electronic transaction cost ▪ Achieve 99 percent transaction integrity and internal processing accuracy ▪ Achieve 90 percent taxpayer satisfaction ▪ Achieve 90 percent distributor satisfaction ▪ Achieve 90 percent IRS employee satisfaction 	<ul style="list-style-type: none"> ▪ Enable e-filing for all corporations and exempt organizations ▪ Reduce number of submission errors requiring manual handling ▪ Improve customer service for e-file providers (private third parties) ▪ Increase IRS employee productivity through increased availability of submission data ▪ Support new e-file business processes that enable a broader range of trading partner business models ▪ Provide replacement path for legacy e-file systems

The MeF project received the Pioneer Award at the e-Gov Institute Forum in June 2004. MeF was recognized as the 'best solution' for innovation and delivery of essential e-Government services to businesses.



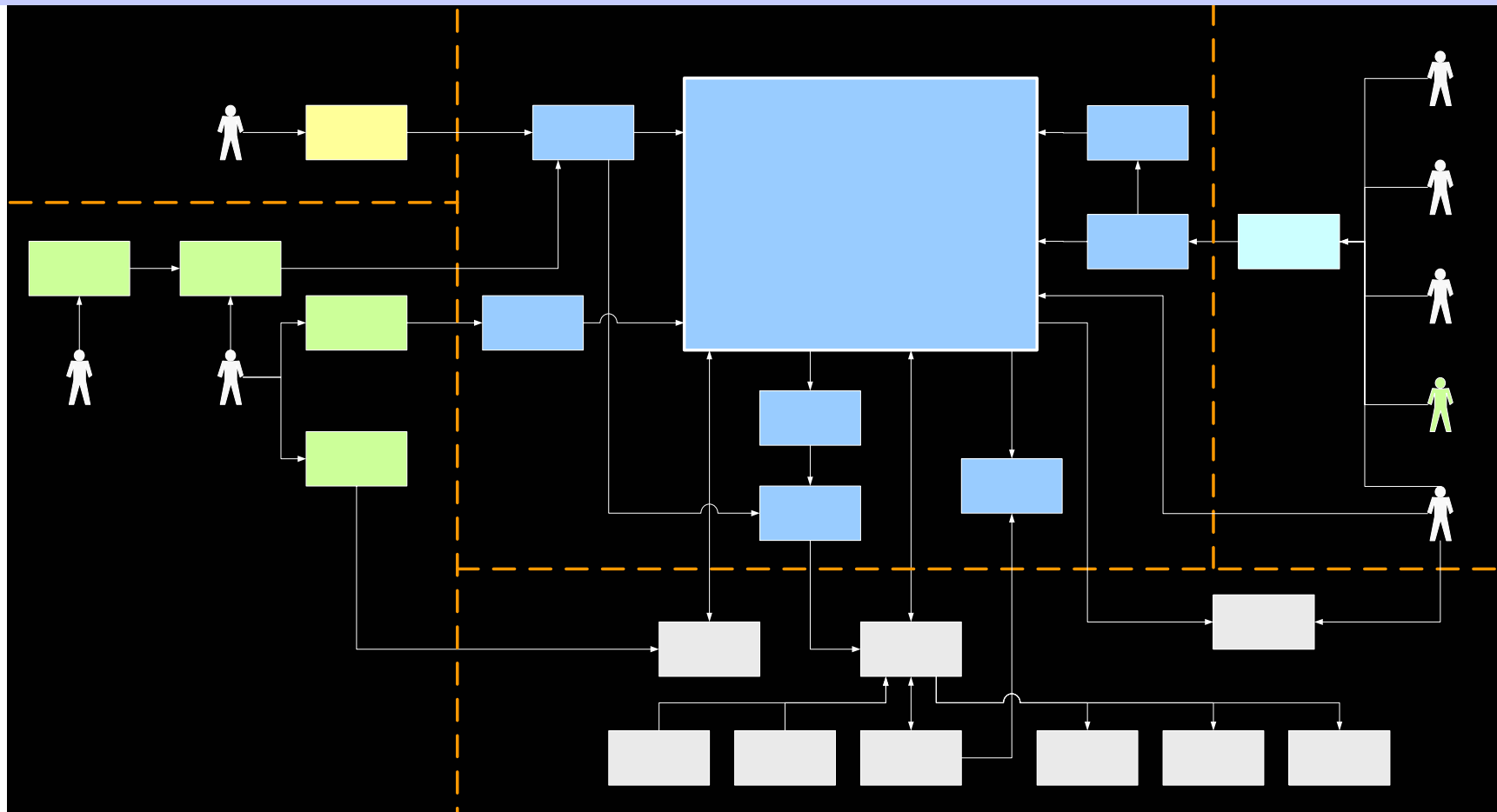
MeF modernized electronic filing for the IRS while promoting IRS position around Service-Oriented Architecture (SOA)



MeF System Context



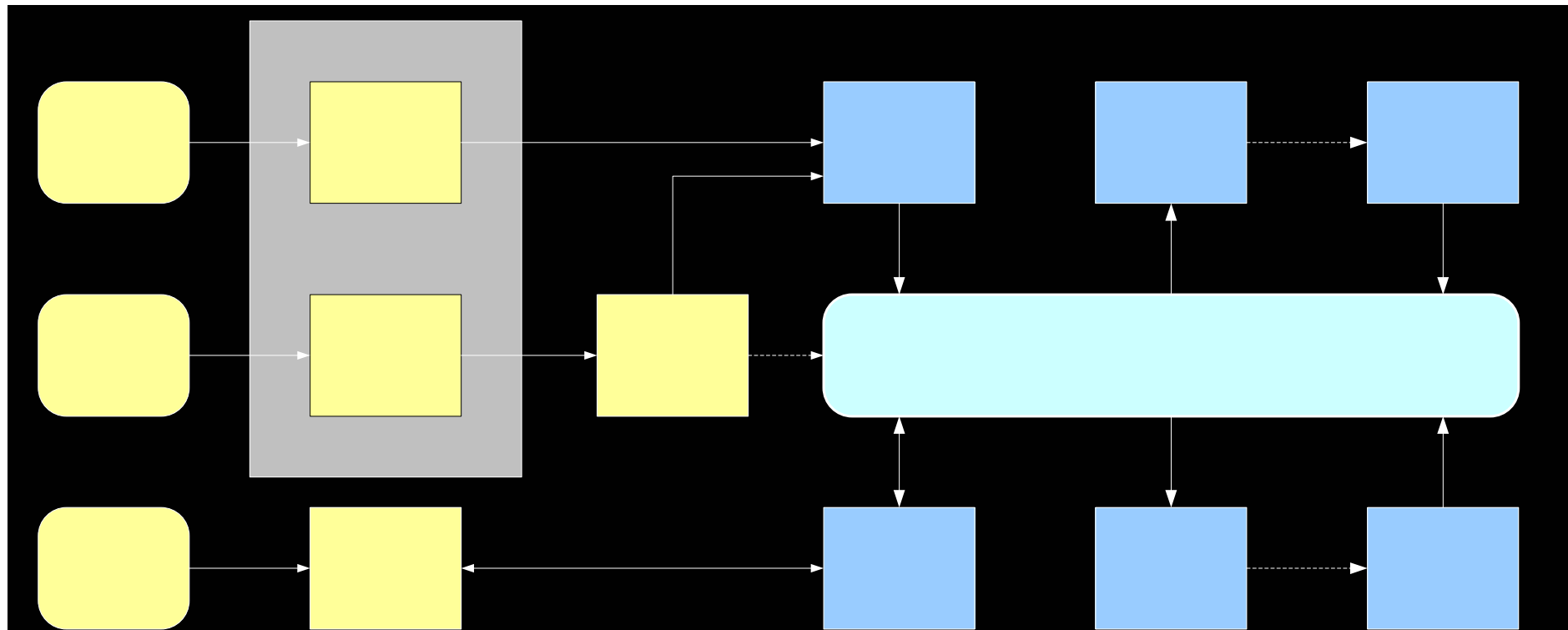
- MeF is a complex system linking external trading partners with new e-file applications and legacy submission processing "pipeline" systems
- E-file data is made available internally to most IRS employee users



MeF Service Bus is an integral part of the SOA



- All service consumers (external and internal) connect to service providers through the MeF Service Bus
- The MeF Service Bus connects to existing IRS enterprise messaging infrastructure through adapters
- MeF Service Bus will be incorporated into broader Enterprise Service Bus



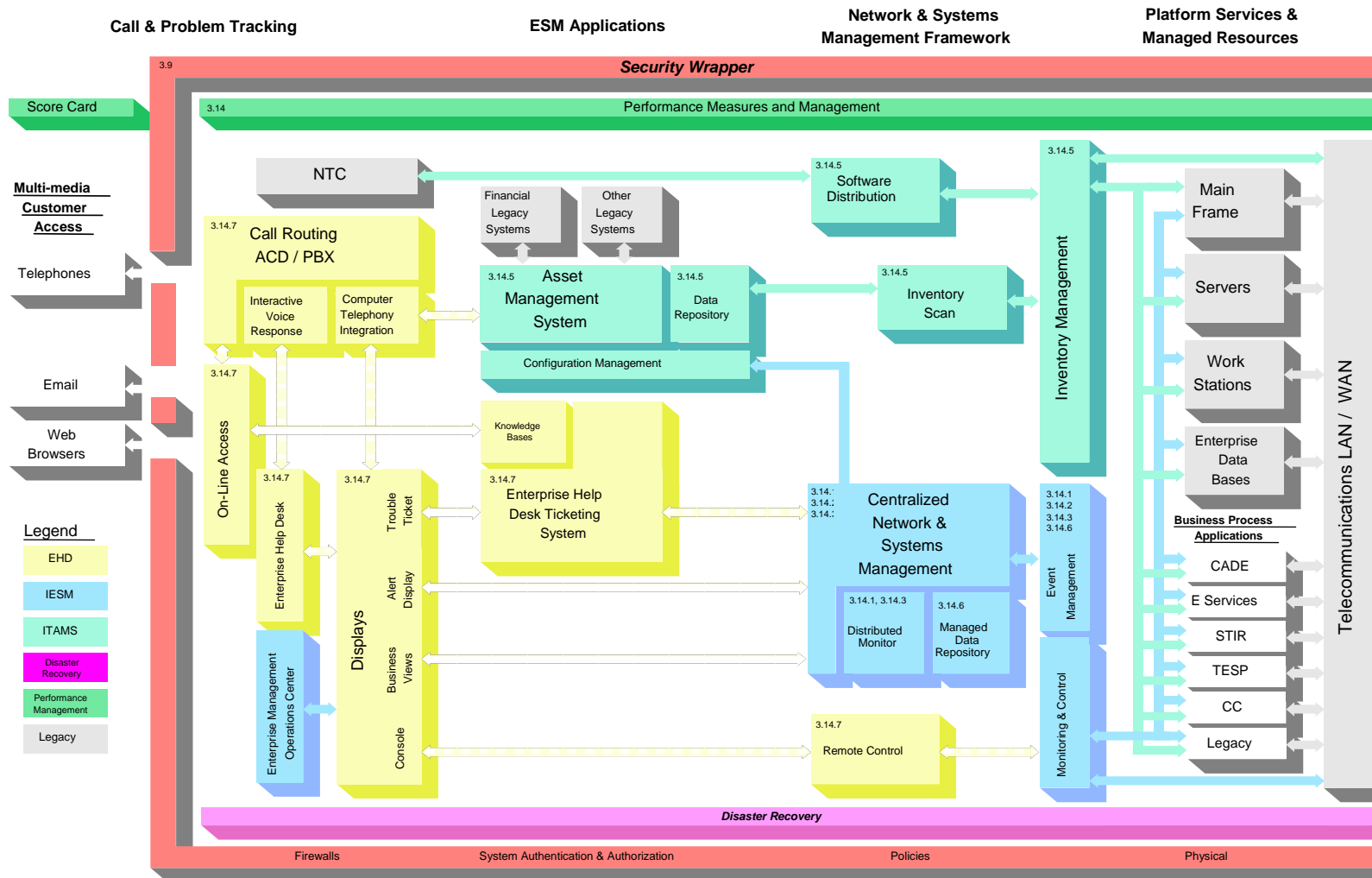


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Enterprise Systems Management (ESM)

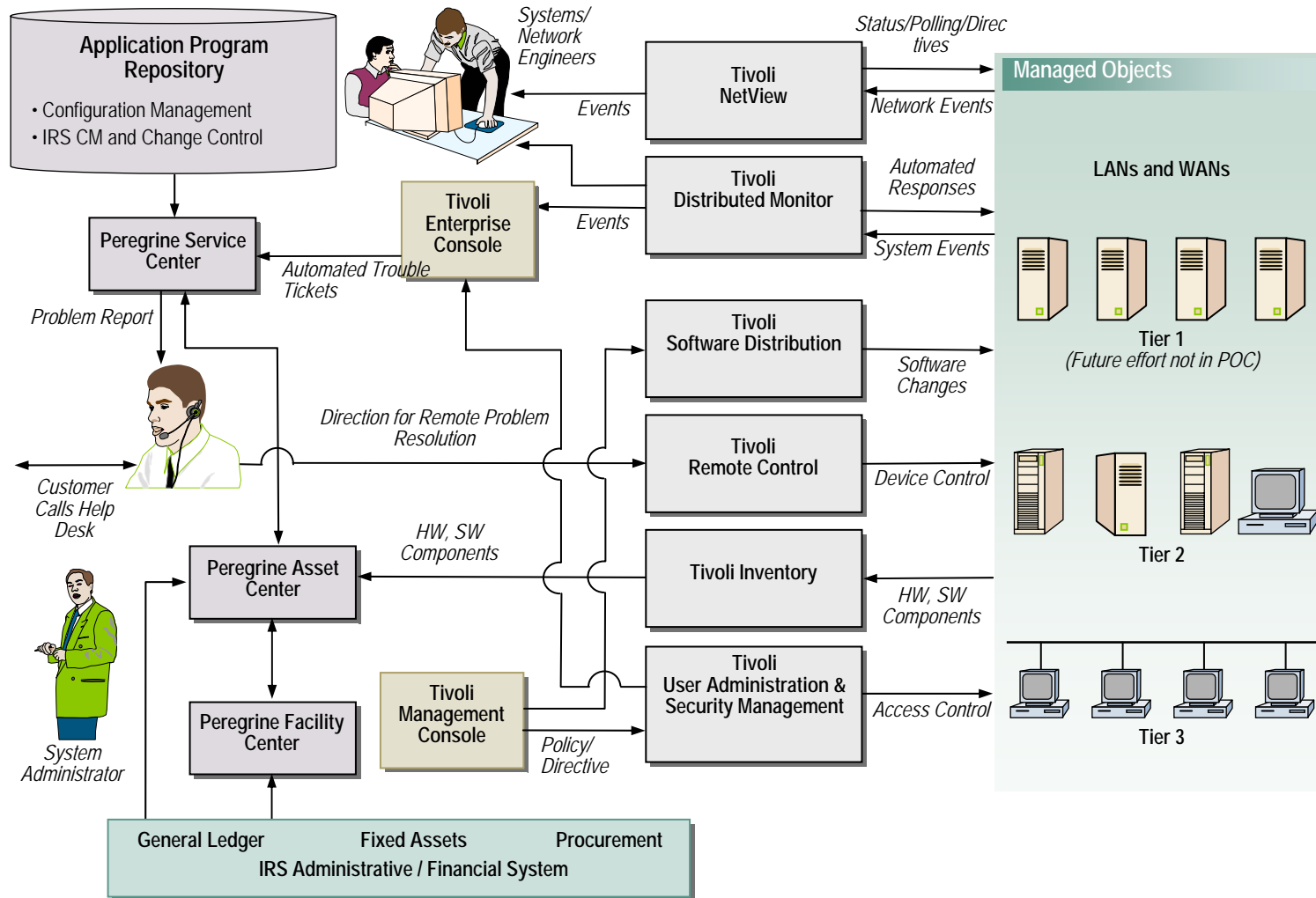


ESM Operational Concept





ESM Help Desk





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Security and Technology Architecture Release (STIR) & Web Hosting



Overview

- Security Technology Infrastructure Release (STIR) – Web Hosting will design, develop, deploy, operate and support three portals for the IRS:
 - IRS Employee Portal – enabling IRS employees to access modernized IRS Web-enabled systems (insourced)
 - Registered User Portal – users authenticated with information (e.g., PKI) beyond that stored on IRS systems (outsourced)
 - Public (Unregistered) User Portal – users authenticated only by information stored on IRS systems (outsourced)
- Project Goals and Objectives:
 - Create IRS-wide web delivery capability through centralized platforms and facilities for scalable, secure hosting
 - Implement common security architectures and interfaces
 - Provide integrated e-business systems management and monitoring



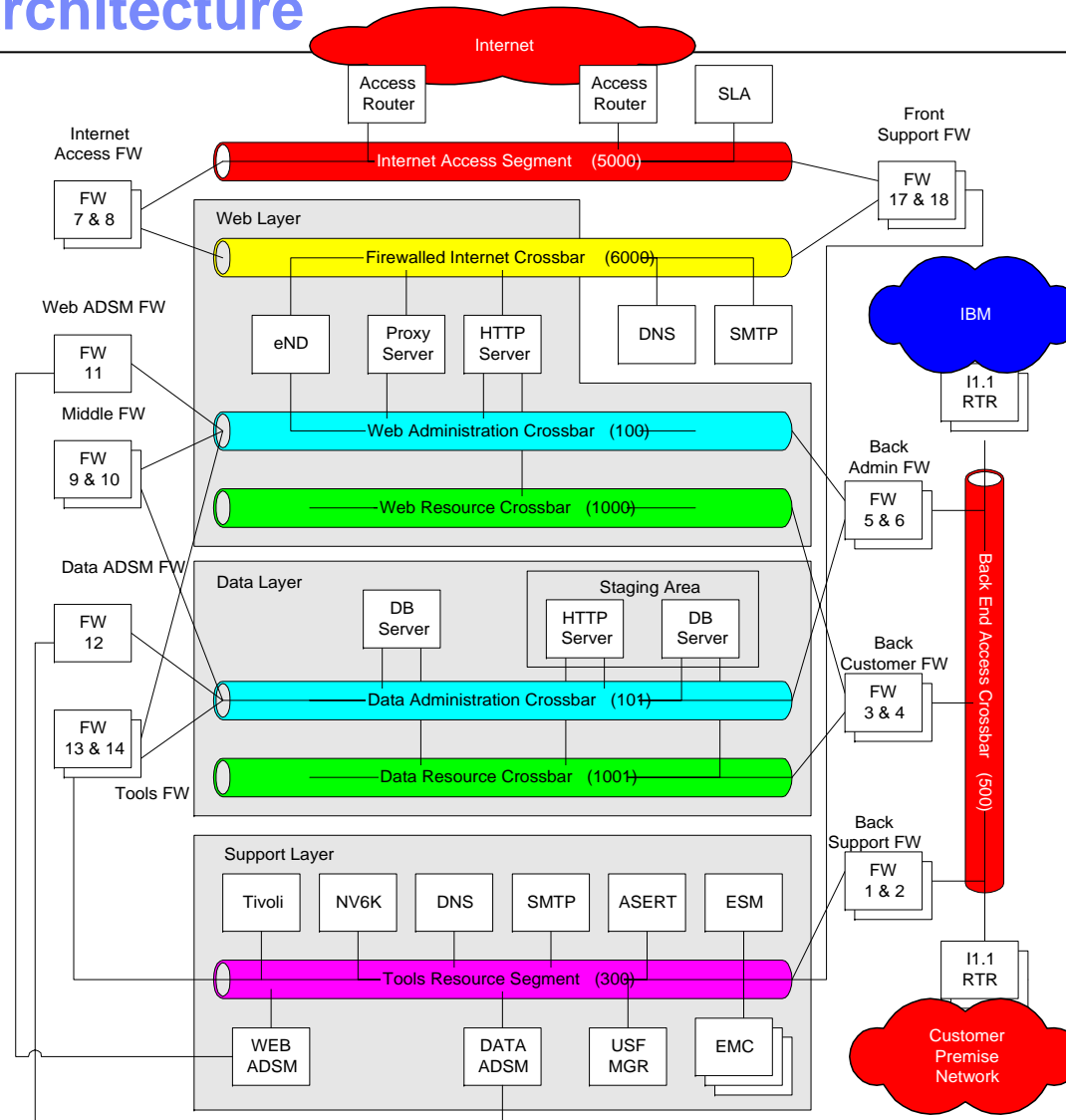
Project Goals

- Volumetrics
 - “The Web hosting environment has the potential to make significant progress toward the goal of 80% of all tax and information returns being filed electronically by 2007...”
 - 2007 population access to web hosted services
 - 180 million taxpayers (individual and business)
 - 750,000 third parties (e.g., enrolled agents, tax preparers, etc.)
 - 130,000 IRS employees
 -system will handle 1.2 billion electronically filed documents

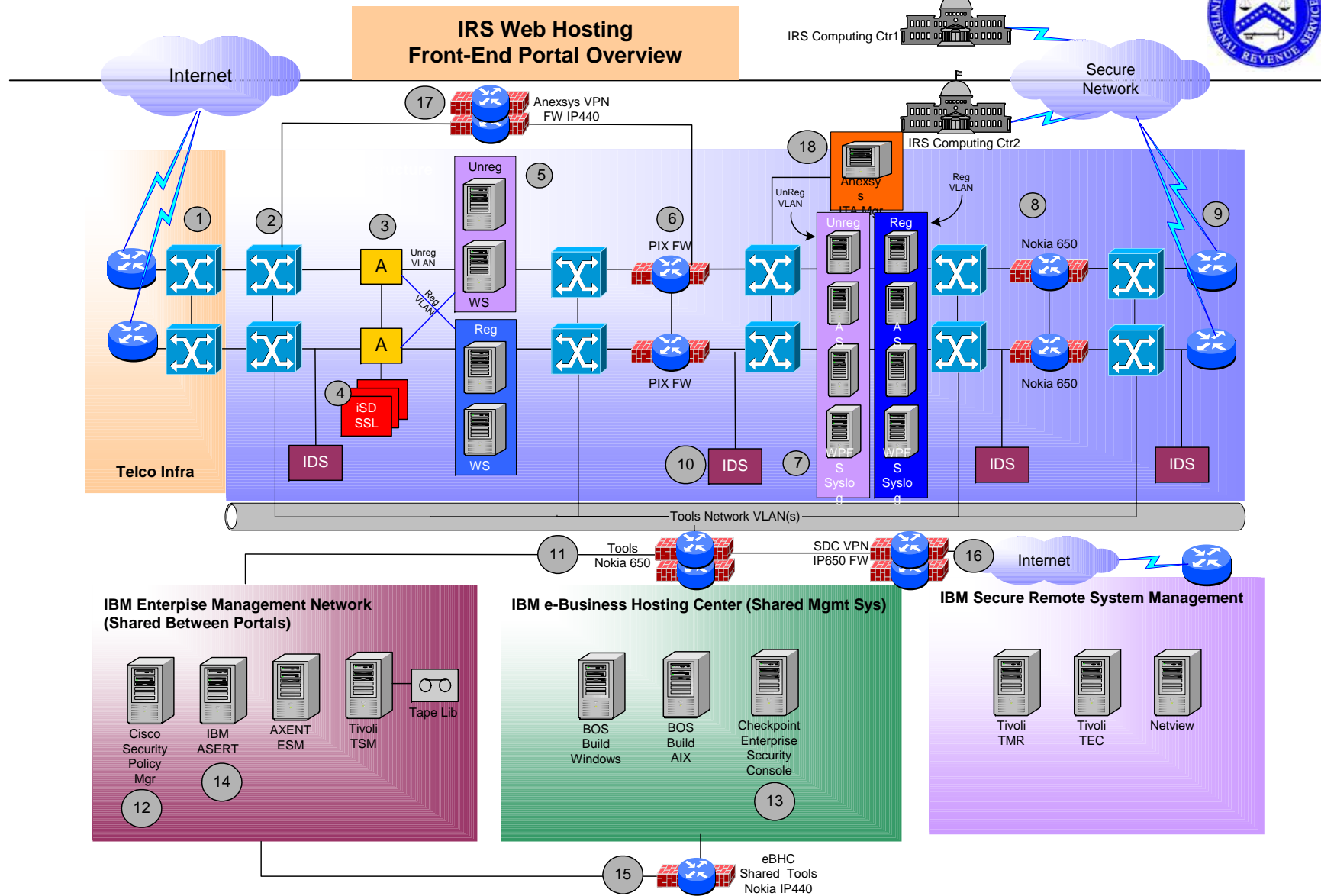


IBM Hosting Architecture

- Design Points
 - Reliability
 - Consistency
 - Flexibility
 - Scalability
 - Manageability
 - Security



Logical Portal Architecture



Logical Portal Architecture (cont'd)



IRS Web Hosting Front-End Portal Overview

- 1 Telco Access Switches
- High-end switches
 - Redundant Internet bandwidth into IBM Hosting Center
 - Trunked channel into IBM Core/Access switches

- 2 Core/Access Switches
- Cisco 6509
 - Interface with Telco switches
 - Provide ACL + Packet Filtering + Routing

- 3 Load Balancer Switches
- Alteon Model A184
 - Provide Geographic Site Load Balancing
 - Provide Server Web Server Load Balancing
 - Provide load balancing to SSL accelerators
 - Provide stateful packet filtering

- 4 Alteon iSD SSL
- Alteon SSL Accelerator
 - Offload SSL processing from WS
 - Proprietary Operating Sys provides added security
 - Advanced certificate management – Create, list, delete
 - Certificate verification – Digital signature check, Certificate revocation lists
 - Supports 256 certificates/keys per iSD-SSL
 - Bulk encryption – DES, DES3, RC4, RC2
 - Support HTTPS

- 5 Web Server
- IBM Netfinity 7100
 - Portal Specific web servers

- 6 Middle Firewall
- Cisco PIX 535
 - Provide stateful inspection between web and app servers

- 7 Application Server
- IBM RS/6000 Model F80
 - Provide horizontal scaling through application clustering
 - High availability server

- Web Page File Server on F80
- IBM RS/6000 Model F80
 - Running AFS to serve static pages/images to web servers
 - HA through HACMP clustering software

- 8 Backend Firewall
- Nokia IP650
 - Provide stateful inspection between site and IRS premise

- 9 Backend Interface
- Provide connectivity to IRS computing centers

- 10 Intrusion Detection System
- Cisco Switch Based Packet/protocol Analyzer against signature attacks

- 11 Tools FE Firewall
- Nokia IP650 FW
 - Isolate Enterprise System Mgmt Network
 - Allow system IBM to get to every network layer for mgmt
 - Allow firewall and IDS logging traffic

- 12 Cisco Security Policy Mgr
- Netfinity 7100
 - Provide firewall mgmt
 - Provide firewall logging

- 13 Checkpoint EMC
- Provide firewall mgmt
 - Provide firewall logging

- 14 IBM ASERT
- IBM Host Based Intrusion Detection System

- 15 eBHC Shared Tools Nokia IP440
- FW protects traffic from shared tools to IRS dedicated tools network

- 16 IBM SDC Access to eBHC
- IBM remote system admin and monitoring traffic accessing the hosting ctr via VPN gateway.

- 17 Anexsys Access to eBHC
- Anexsys access to hosting center via VPN gateway. The traffic is directed to middle firewall (PIX).

- 18 Anexsys Intrusion Alert Mgr
- ITA mgr sits in the secure layer VLAN and has visibility to all IRS production servers to receive host based IDS info. WPFS will push FW/Switch Network based IDS Syslogs to ITA Mgr. No access will be given to the Tools Network.



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STIR - IA



IA Components

1. Develop the Interfaces between the Following Systems:
 - Web Hosting
 - Messaging Middleware
 - Enterprise Directory and Authentication Services
 - Back-end Systems
 - Security Audit and Analysis System
 - Legacy Systems
2. Portal Application



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e-services



Overview

- e-services will enable the IRS Electronic Tax Administration (ETA) to exceed the Congressional mandate of:
 - electronically transacting with more than 80% of U.S. taxpayers
 - Plus achieving 90% customer and employee satisfaction

- e-Services focus is value adding third parties:

– CPAs	- EA's	- Volunteers
– ERO's	- Transmitters	- Banks
– Software Developers	- States	- Employers



e-services Applications

TIN Matching

- Using the Internet, TIN matching allows all payers who filed one of six information returns potentially subject to backup withholding to determine if the customer's name and TIN number match with IRS records for a taxpayer prior to filing information returns with the IRS

Assisted e-services

- Registered third parties ask questions regarding their clients over the Internet (re installment agreements, transcripts, verifications of filing, etc)

Disclosure Authorization

- Allows authorized Third Parties to apply for Power of Attorney (POA - 2848) and Taxpayer Information Authorization (TIA - 8821) requests over the Internet

Transcript Delivery

- Online transcript request (form 4506) for returns, accounts, verification of non-filing, W-2 forms, etc



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Customer Communications



Overview

- Major upgrades to IRS telephony infrastructure and automated self-service application portfolio (CC 2001)
- Provide taxpayers expecting a refund with access to refund status and fact of filing status securely over the Internet during the 2002 filing season (IRFOF)



Overview

- What does Internet Refund/Fact of Filing do?

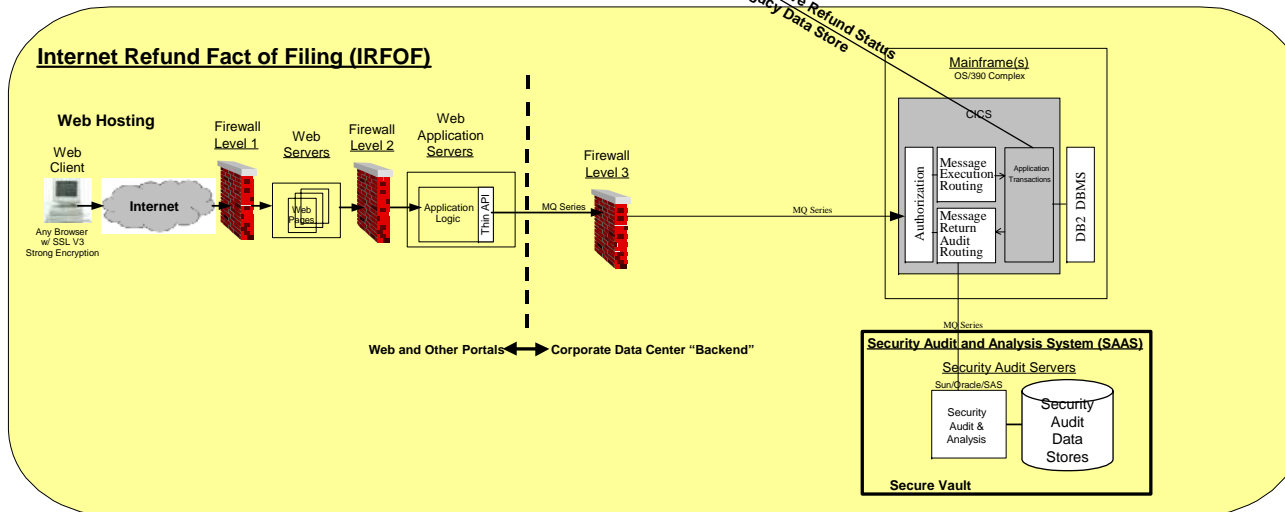
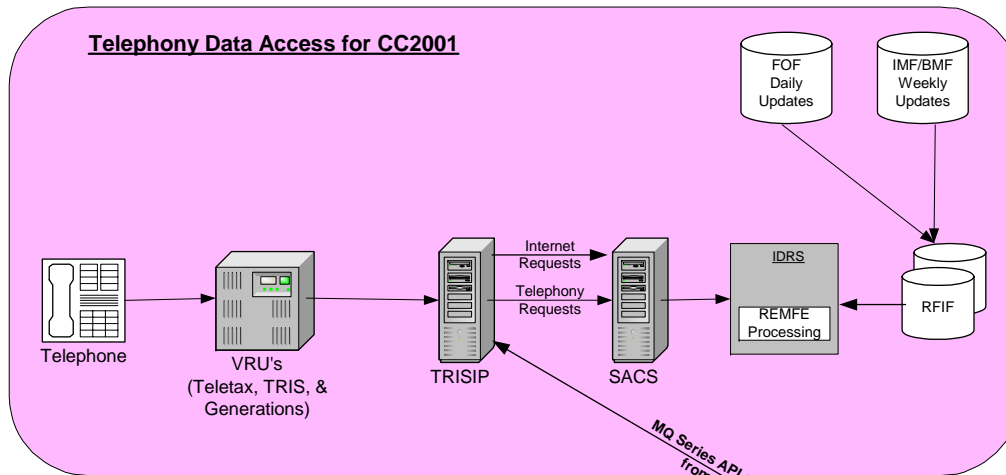
- Provides instant refund status information to taxpayers with Internet access (60+% of US population has Internet access).
- Improves customer service by answering the most commonly asked questions: “Did you receive my return?” & “Where is my refund?”
- Provides guidance to the taxpayer about what steps to follow to resolve issues with their refunds.
- Helps the taxpayer by providing an additional method of getting basic information from the IRS.

- Why is it Important?

- It's the first Internet customer-facing application that will demonstrate IRS modernization progress.
- It will increase the number of taxpayers that can be served via automated self help capabilities and does not require CSRs.
- It will support compliance with legislation (RRA 98) that states that the IRS will eventually have such applications available – but much sooner than the deadline of 2006.
- It will increase the total number of customers serviced.
- It will assist the taxpayer in resolving issues with their refund.



Technical Approach





Technical Approach

