

Project Academy Series

Enterprise Architecture (EA)

Basic Concepts, Guidance, and Success Stories

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Session Objectives

Understand the basics of
Enterprise Architecture
(EA)

Understand EA's role in
portfolio and project
planning

Understand how EA
enables effective
solutions for projects

Importance of
architecture for project
success

Why an EA Session in Project Academy Series?

- Per State processes, you have an IT project after you:
 - Identify business problems or opportunities
 - Ensure alignment with business strategy
 - Identify benefits and how you measure them
 - Obtain approval for alternatives analysis
 - Identify alternative solutions
 - Select the best possible solution
 - Develop an approach to implement the solution
 - Estimate the cost and duration
 - Obtain approval for selected solution
 - Obtain budget approval

The challenge with investing in IT systems is identifying which systems to invest in. This is a problem *Enterprise Architecture* addresses.

Why an EA Session in Project Academy Series?

- Some key challenges with the execution of an IT project are:
 - Identifying *all* the requirements
 - Developing the solution architecture and functional design
 - Identifying the risks (unknowns) associated with the design and ensuring that they are addressed early
 - Ensuring that the system meets all of the requirements

These are the challenges *Solution Architecture* addresses under the guidance of *Enterprise Architecture*.

Are you doing EA?

- Do you have a defined business strategy?
- Do you have a defined IT strategy that supports your business strategy?
- Do you have clearly defined business goals?
- Are you devising the best possible strategies to achieve your desired business goals?
- Are your investment decisions aligned to your desired business goals?
- Do you have a defined roadmap to achieve your business goals?
- Are you prioritizing your project proposals?
- Are your projects delivering the business outcomes?

If you are doing these, you are already *doing EA*, even if you are not calling it EA and even if you do not have a designated EA.

EA Basics

Understand the basics of
Enterprise Architecture
(EA)

Understand EA's role in
portfolio and project
planning

Understand how EA
enables effective
solutions for projects

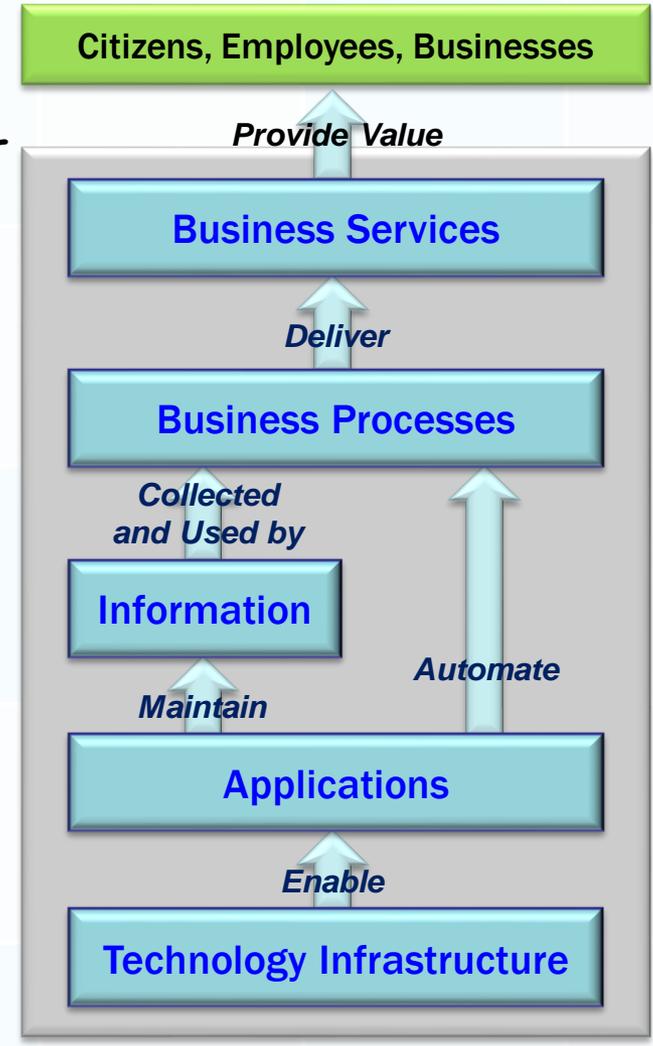
Importance of
architecture for project
success

- What is Enterprise Architecture (EA)?
- Why do we need EA?
- Business Benefits of EA
- EA Domains and Building Blocks
- Seven Steps for Effective EA Practice

What is Enterprise Architecture?

Enterprise Architecture (EA) **identifies** the business processes that execute or support an organization's mission and **defines** how Information Technology (IT) assets directly enable those processes.

The purpose of EA is to **optimize and transform** the often fragmented processes, information, application systems and technologies into an **efficient and integrated environment** supportive of the execution of **business strategy**.



Why do we need EA?

➤ To help identify all the opportunities and devise best possible strategies to achieve desired business outcomes

- Identify new and efficient ways of using IT for strategic advantage
- Identify new or improved services the business can offer that are possible only because of the technology
- EA serves as the technology strategist for business



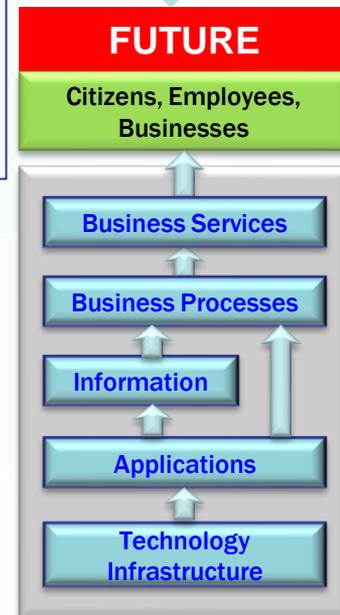
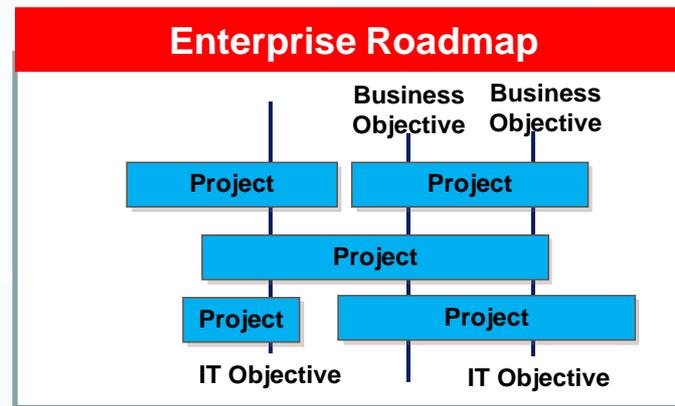
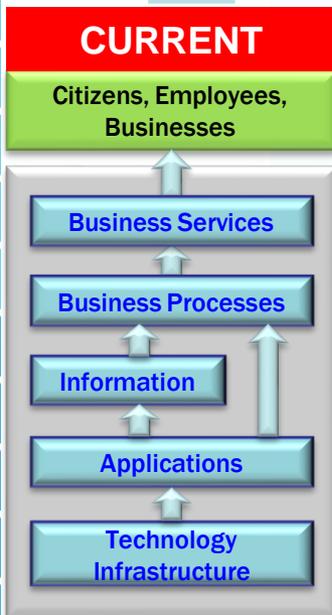
➤ To define the desired Target State Architecture

- Efficient and integrated environment to support business strategy
- Make the right technology decisions and set the right technology strategy
- Maximize advantage from IT to drive business performance

➤ To help ensure investment decisions are aligned to business goals

➤ To define an Enterprise Roadmap to reach the target state

➤ To guide strategic projects ensuring architectural coherence



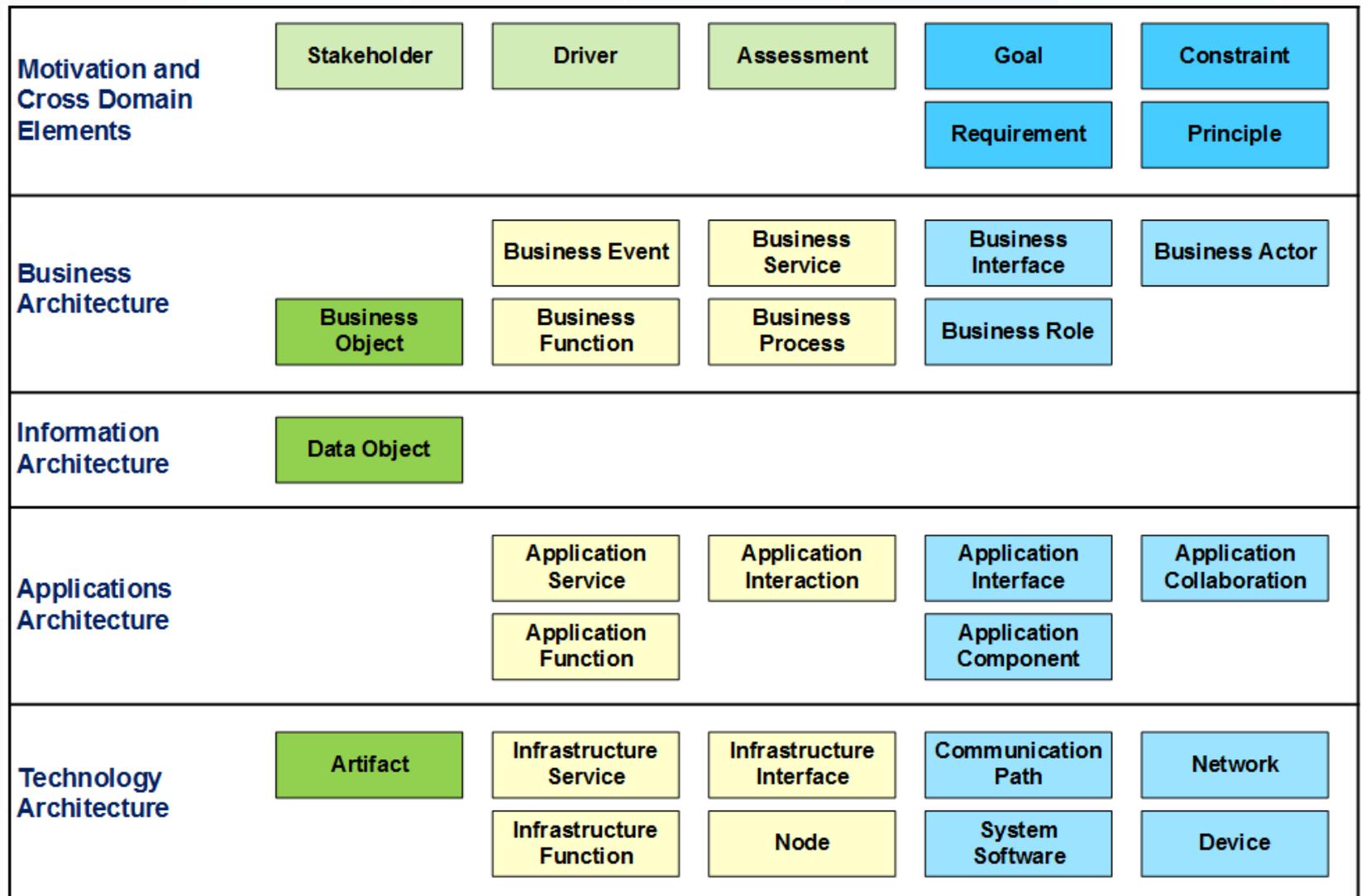
Business Benefits of EA

When implemented effectively, EA can enable many benefits.

- Bridge the gap between strategy and implementation
- Improve alignment of IT with mission, goals, and objectives
- Improve business capabilities
- Improve Interoperability and Information Sharing
- Improve security
- Reduce cost, cost of ownership, redundancy, duplication, complexity, and risk
- Enable faster, simpler and cheaper procurement
- Enable predictable success of transformation projects

- EA is an enabling function; benefits are indirect results of EA (*direct results of transformation projects*)

EA Domains and Building Blocks



Seven Steps for Effective EA Practice

PREPARE

ASSESS

DEFINE

PLAN

CREATE

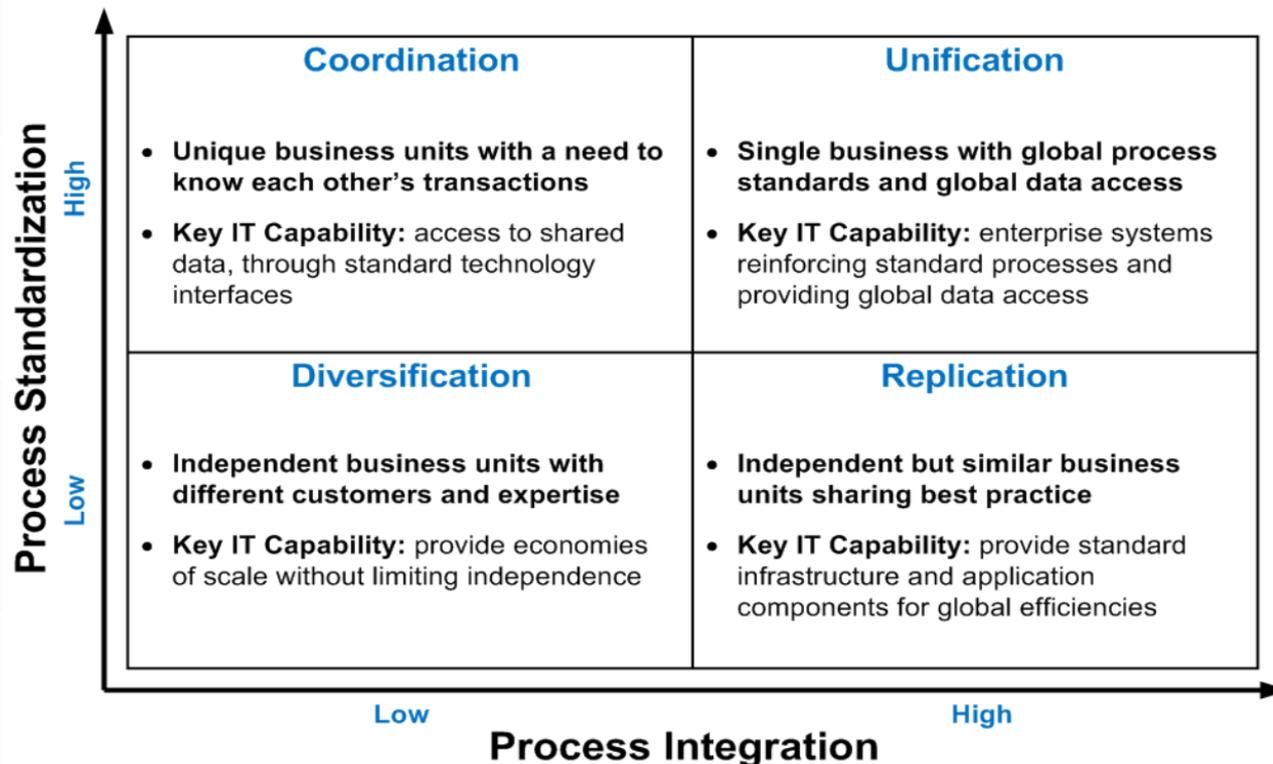
MEASURE

COMMUNICATE

Prepare for Doing EA

- Understand the history of EA in your organization
 - Focus areas, what worked and why, what did not work and why?
 - Team's perceptions, opportunities, challenges, and constraints
- Learn your business direction and operating model

Four Operating Models



Prepare for Doing EA

- Develop high level knowledge of your organization's business capabilities
- Develop high level knowledge of your current IT
- Understand your key stakeholders, their expectations and influence, and their issues/concerns
- Understand your success criteria
- Build relationships with your stakeholders and sponsors
- Understand organization's budget and funding strategy
- Start formulating your value proposition and approach

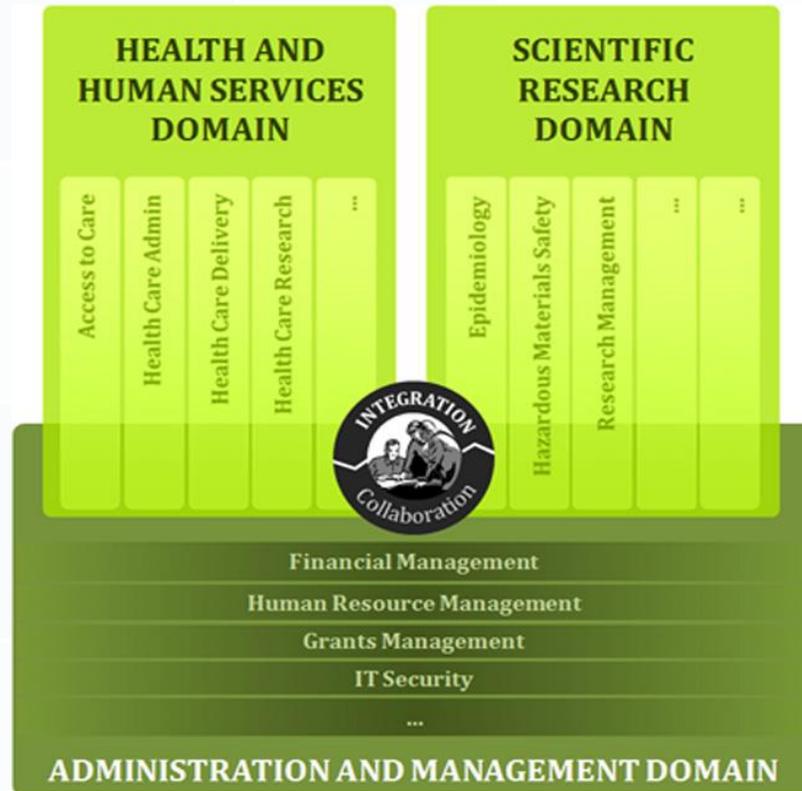
Assess Your Environment

- Perform a more detailed assessment of your organization
 - What are they trying to do
 - What are the relevant industry trends and disruptions
 - Transparency
 - Security
 - Interoperability
 - Mobile computing
 - Cloud computing
 - Shared services
 - What are the current investment decision making processes
 - Organizational Culture
- Develop more detailed understanding of key business and IT executive concerns

Assess Your Environment

- Identify your business capabilities in detail
- Start developing your Business Capability Heat Map

Example: Health and Human Services Business Capabilities

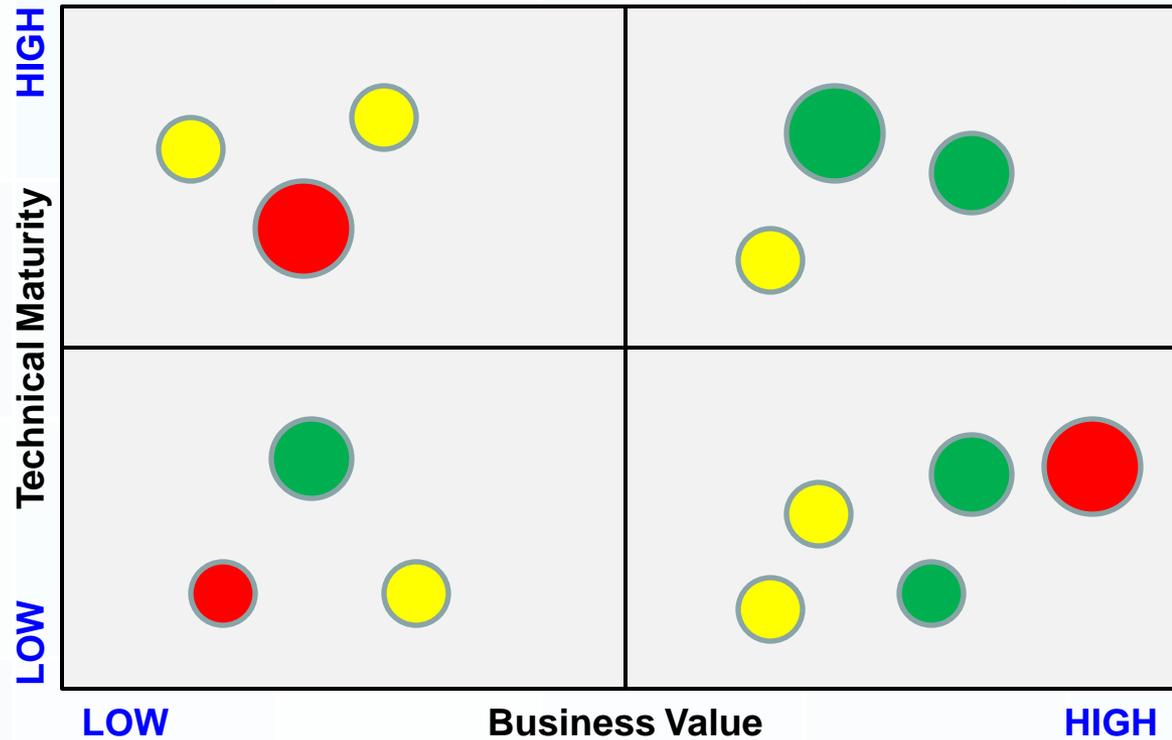


Example: Human Resources Management Heat Map



Assess Your Environment

- Perform a high level assessment of application portfolio

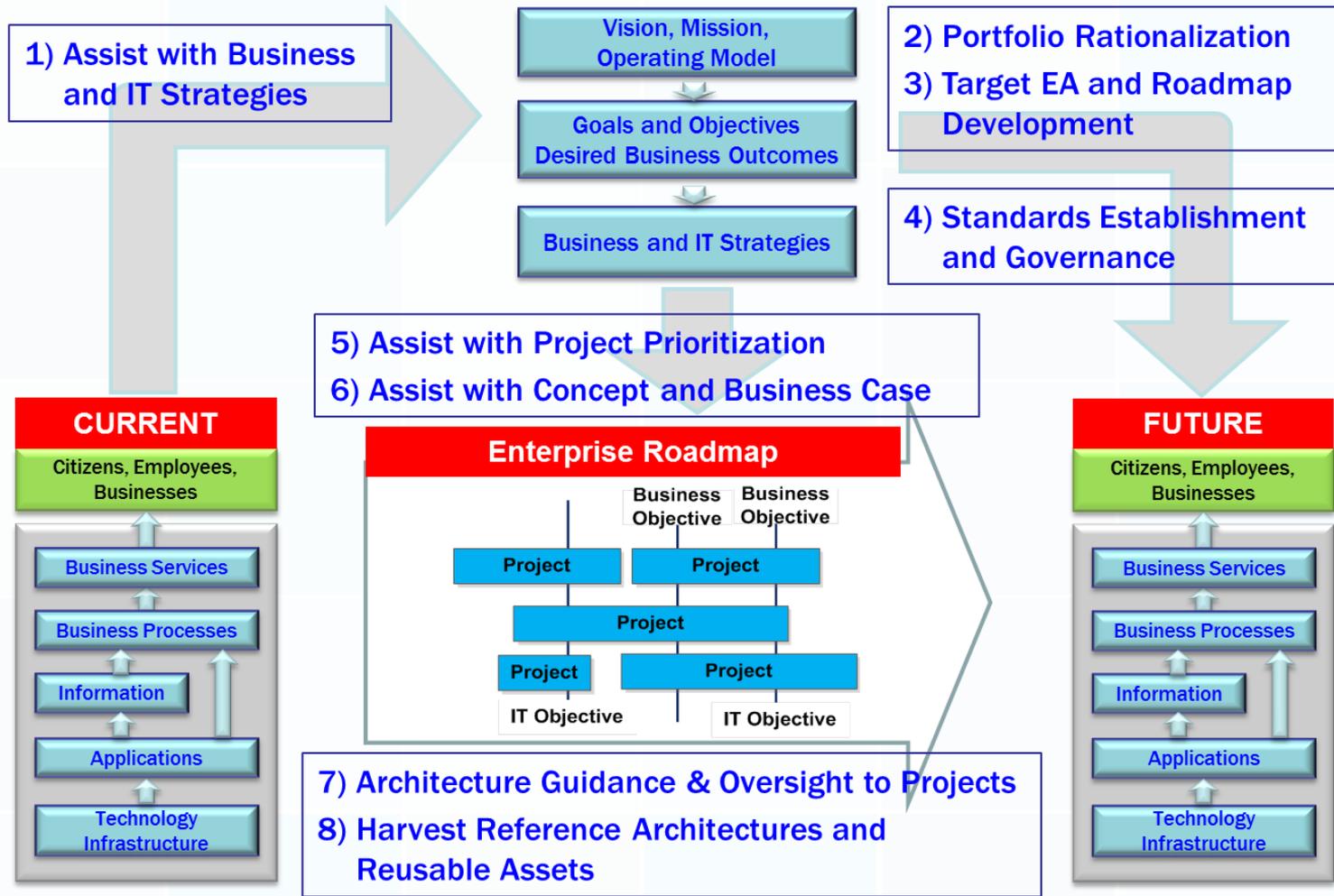


Assess Your Environment

- Identify existing and desired IT capabilities. For example:
 - Business process management
 - Decision management
 - Information integration
 - Analytics
 - Content management
 - Interoperability
 - Shared services
 - Application integration
 - Standardization
- Identify key business outcomes that must be driven
- Understand how EA will add business value

Define Your Purpose

Identify EA services relevant to your organization

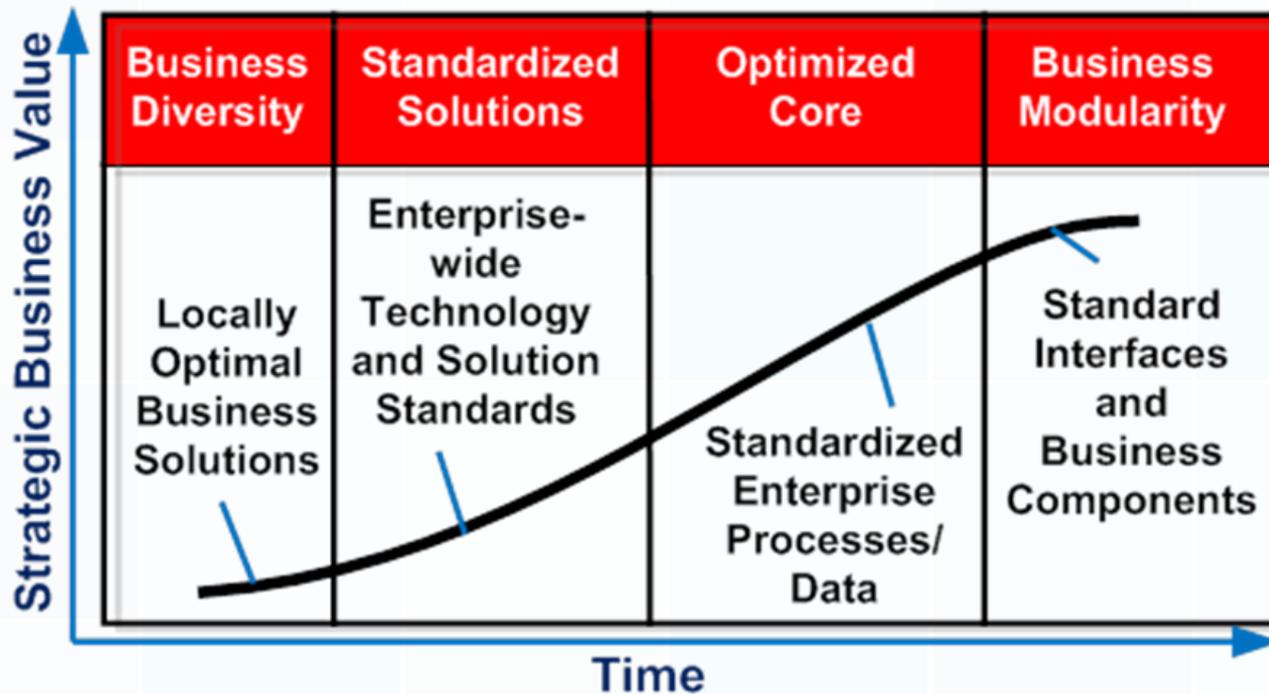


Define Your Purpose

- Do not do EA for the sake of doing EA
 - Extensive focus on documenting current inventory and mandated compliance are unlikely to deliver business benefits
- Clearly define the business outcomes EA is supporting and how progress will be measured
- Identify and prioritize your focus areas to deliver business outcomes
 - Enabling major business transformation
 - Improving business capabilities
 - Reconciling the IT landscape
 - Delivering foundational IT capabilities
 - Delivering recommendations to help make better investment decisions across business and IT
 - Interoperability
 - Shared services
- Achieve stakeholder buy-in

Plan your Approach

- Successful EA practice takes a long-time
- Business and IT capabilities should be built incrementally
- Start by planning a target EA maturity level
 - You may need a different maturity level for different capabilities



Plan your Approach

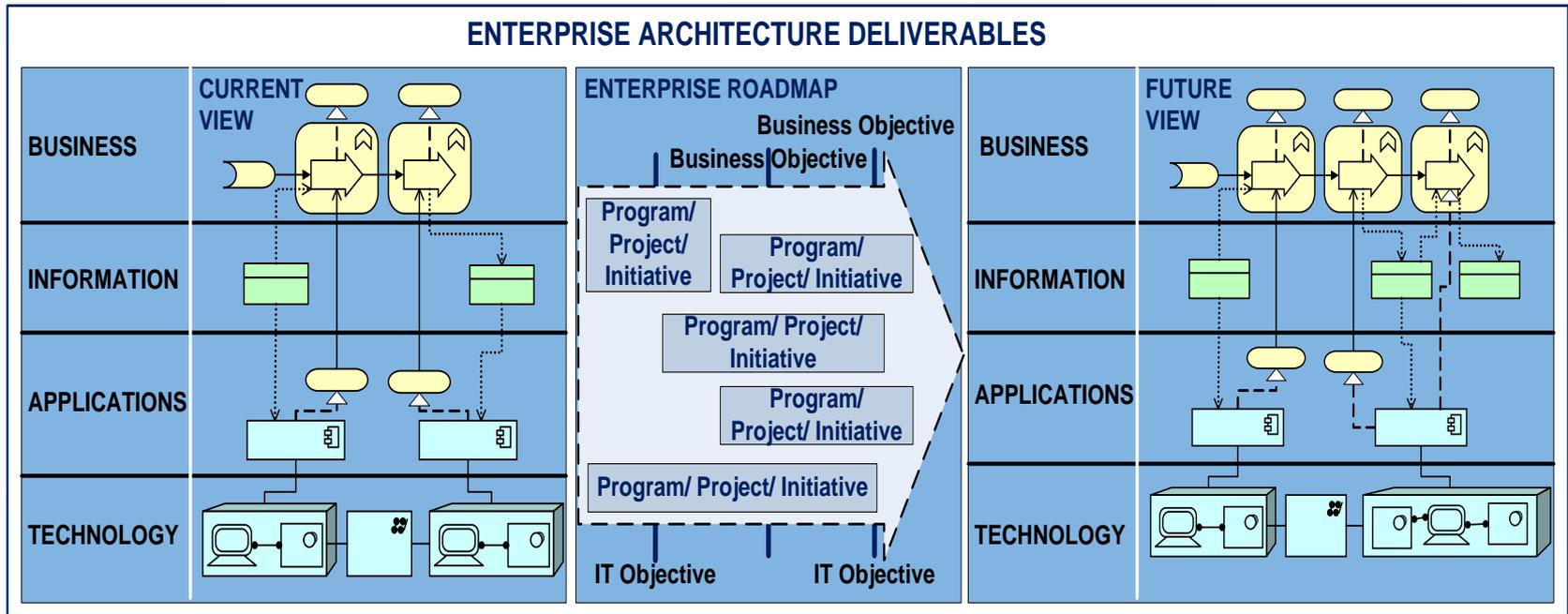
- **Plan your team (if starting EA practice)**
 - **Direct or matrix team**
 - Who is in the roles of Chief Enterprise Architect, Enterprise Business Architect, Enterprise Information Architect, Enterprise Application/Solution Architect, Enterprise Technology Architect?
 - Smaller organizations may have people wearing multiple hats
 - **Virtual team**
 - Business Analysts
 - IT Managers
 - IT Subject Matter Experts
- **Define your increments – to create target architecture**
- **Prioritize the work in each capability to support the target business outcomes**
- **Develop a task plan for the first increment(s)**

Plan your Approach

- **Frame EA deliverables**
 - **Must be actionable**
 - **Meta model for EA models**
 - **The level of detail for target architecture models**
 - **Follow just enough, just in time approach**
 - **The level of detail for current architecture models (just enough)**
 - **Follow just enough, just in time approach**
 - **Diagnostic information**
 - **Information for supporting decisions**
 - **Recommendation implementation approach and roadmap**
- **Develop your governance, framework, and processes**
- **Develop EA Charter and EA Business Plan**

Create Actionable Deliverables

- Create target state architecture
 - Business, Information, Applications, Technologies
 - Use industry and reference architectures as guidance
- Recommended roadmap to implement the target state
 - Recommend programs, projects or initiatives
 - Defined business and IT objectives for each



Measure Your Progress

- Use metrics to measure your progress and identify opportunities for continuous improvement
 - Quantitative metrics
 - Outcomes supported
 - EA identified projects
 - Business impact
 - Expected benefits
 - Projects supported
 - Investment decisions supported
 - Ratio of strategic projects to total projects
 - Exceptions granted
 - Actionable, signature-ready deliverables
 - Qualitative
 - Measure of the perception of stakeholders about the value of EA
 - Stakeholder engagement
 - Stakeholder feedback

Communicate

- Effective communication is critical to successful EA practice
 - Develop your communication plan early
 - Prepare your elevator pitch
 - Short and to the point
 - Address the stakeholder concerns
 - Do not sell EA; show value of your efforts and how they add business value.
For example:
 - We analyze alternatives and define effective solutions to address our business concerns to improve our business capabilities
 - We develop recommendations to help us make better investment decisions across business and IT
 - We focus on improving IT capabilities to support the execution of our business strategy
 - Show how EA adds value to stakeholders
 - The goal is to be viewed as trusted advisors, not as “controllers”
 - Highlight your success

EA's Role in Portfolio and Project Planning

Understand the basics of
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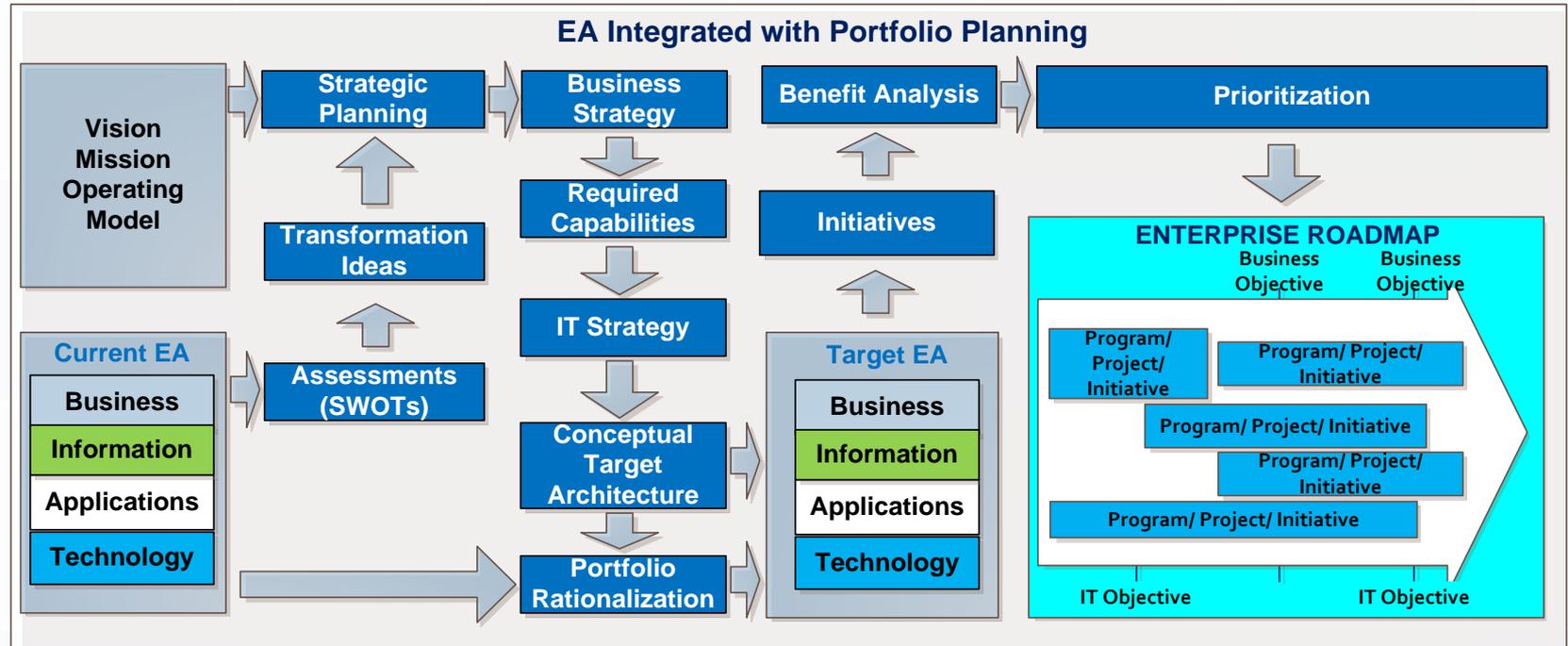
Understand how EA
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Importance of
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success

- Portfolio Planning and Roadmapping
- Project Approval

Portfolio Planning and Roadmapping

EA and portfolio planners must work together to define an enterprise roadmap.

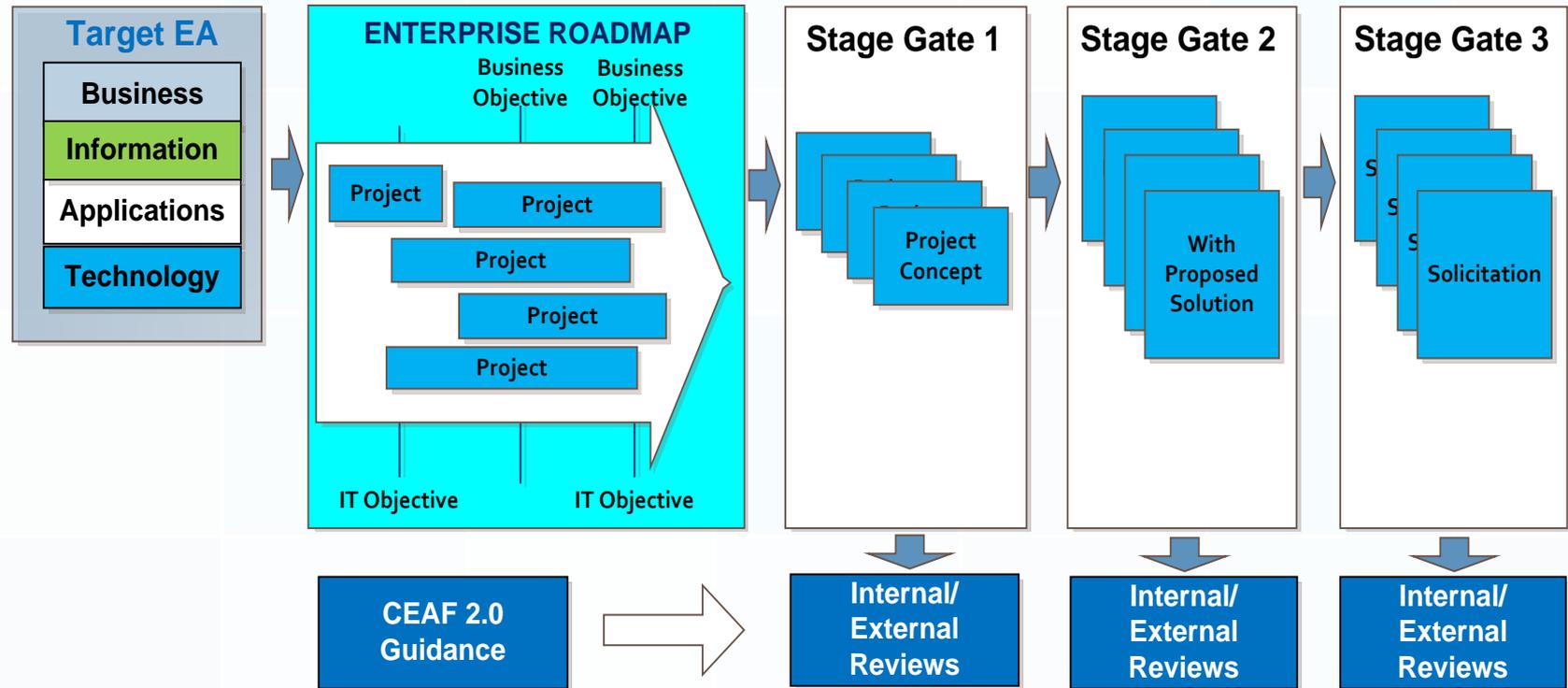


EA Integration with Portfolio Planning:

- Helps bridge strategy and implementation gap
- Ensure projects are aligned to strategic goals and target architecture
- Ensure required capabilities are being built with enterprise perspective
- Ensure projects can deliver long-term value

Project Approval

When project proposals are aligned to the Enterprise Roadmap, obtaining necessary approvals can be much easier.



Enabling Effective Solutions for Projects

Understand the basics of
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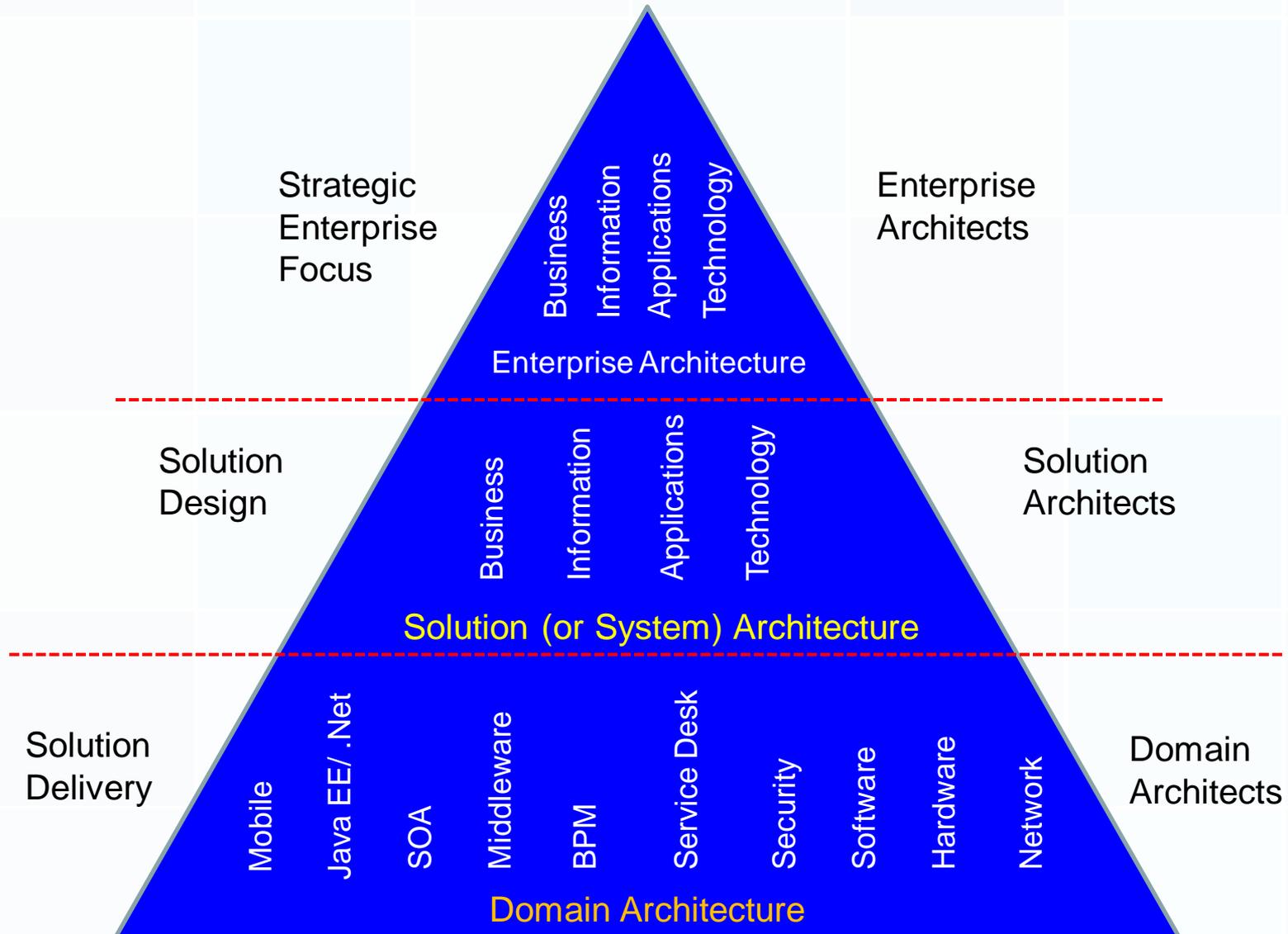
Understand EA's role in
portfolio and project
planning

**Understand how EA
enables effective
solutions for projects**

Importance of
architecture for project
success

- Enterprise Architecture and Other Architectures
- How EA enables effective Solution Architectures

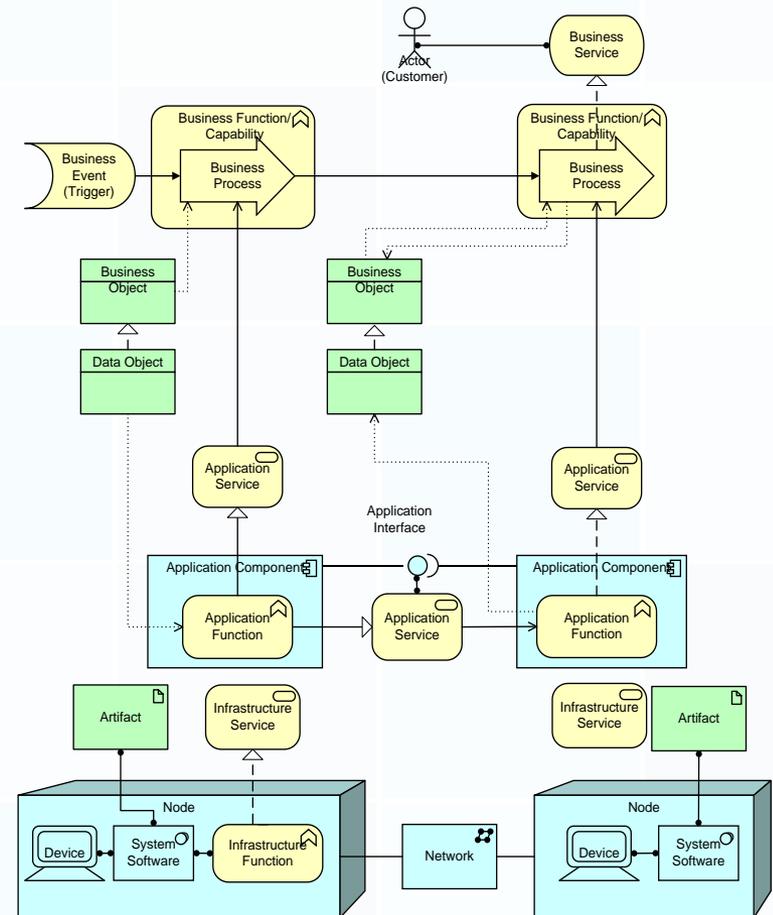
EA and Other Architectures



How EA Helps Address SA Challenges

Well defined enterprise architecture simplifies the most complex tasks of solution architecture design

- Provides a high level architecture for the system
- Helps understand the overall *system* context
- Identifies enterprise capabilities
- Provides a design for enterprise capabilities
- Enables simplified application and information integration
- Enables interoperability
- Identifies reusable assets
- Helps design reusable assets



Importance of Architecture for Projects

Understand the basics of
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Understand EA's role in
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Understand how EA
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**Importance of
architecture for project
success**

- Key technical components for project success
- EA guidance and oversight to projects

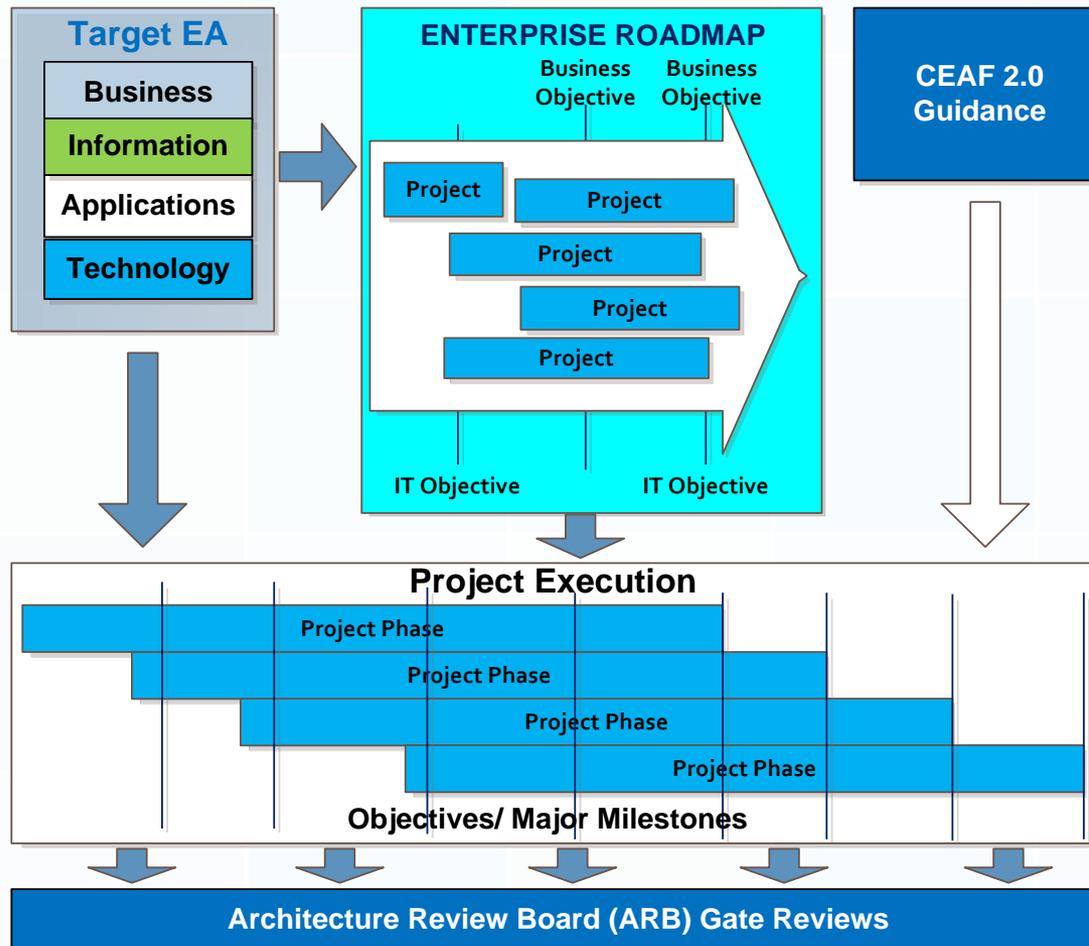
Key Technical Components for Project Success

- What is the solution?
- Will it meet expectations?
- How are we building it?
- How are we verifying it?
- How are we implementing it?
- Can we operate and maintain it?

Effective solution architecture can help project teams make sure these questions are addressed early.

Project Guidance and Oversight

Enterprise context, robust solution architecture, and aligned project approach are critical to enhancing project success. EA provides architectural guidance and oversight to help projects succeed.



Architect's involvement in planning is important:

- Most projects are technically complex
- Technical planning is a critical component of project planning
- Project planning is not just an aggregation of tasks; it is an integrated execution plan

Architecture guidance and oversight from enterprise perspective is important to:

- Ensure progress towards target EA
- Provide timely guidance
- Ensure coherence of multi-project and multi-vendor solutions
- Maintain capability focus

Questions?



Enterprise Architecture at California Department of Health Care Services (DHCS)

Leading Health Care Innovation



Health Care Innovation Strategy: A 2020 Vision

Strategic Plan for Enterprise Innovation and Technology Services





EITS

Enterprise Innovation
Technology Services

Putting Innovation First!

You become what you focus on.

- Karen Johnson



**INNOVATION –
introducing new ideas,
devices and
methods into DHCS
to achieve new
capabilities and
desired service
levels**

Leveraging this collective intelligence, we will experience breakthrough improvements and bring forward innovative solutions designed to exceed the expectations all of our stakeholders.

- Chris Cruz



Vision

EITS provides leadership to the state of California's health and human services by rapidly increasing the department's Innovation Maturity, Velocity, Agility, and Ability

We are moving from accidental to intentional architecture

- Ben Word



Mission

Committed to architecting, building and delivering the secure IT innovative solutions and services that drive Health Care Quality.



Goal #1

Innovation Maturity

Goal #2

Innovation Velocity

Goal #3

Innovation Agility

Goal #4

Innovation Ability



Health Care Innovation Strategy: A 2020 Vision

Strategic Plan for Enterprise Innovation and Technology Services

Goal #1

Innovation Maturity

Tactical → Strategic
Program → Enterprise

- IT Capital Planning
- Procurement Roadmap (APD, FSR, RFP)
- Implementation Roadmap

Goal #2

Innovation Velocity

Reactive → Proactive
Undefined → Defined

- Architecture
- Business
- Information
- Technology
- Security
- Key Performance Indicators
- Metrics

DHCS

- Tech Methods
- Tech Management
- Tech Rollout

- Staffing Strategy
- Talent Management
- MITA ML3 Culture

EITS

Goal #3

Innovation Agility

Systems → Services
Redundant → Optimal

"in the dark" → Informed
"status quo" → Innovative

Goal #4

Innovation Ability

Goal #1

Innovation Maturity

Goal #2

Innovation Velocity

Strategies

DHCS

- Create an HCI implementation plan
- Mature Enterprise Portfolio Management
- Align with Agency Innovation

- Exercise Enterprise Governance
- Establish annual Innovation Call Letter
- Define & track KPIs

EITS

- Systematically deploy new technologies
- Establish a consolidation methodology
- Implement enterprise security initiatives

- Develop succession, recruitment, and retention strategies
- Advance technical training efforts to align with department's technical direction

Goal #3

Innovation Agility

Goal #4

Innovation Ability

Health Care Innovation Strategy: A 2020 Vision

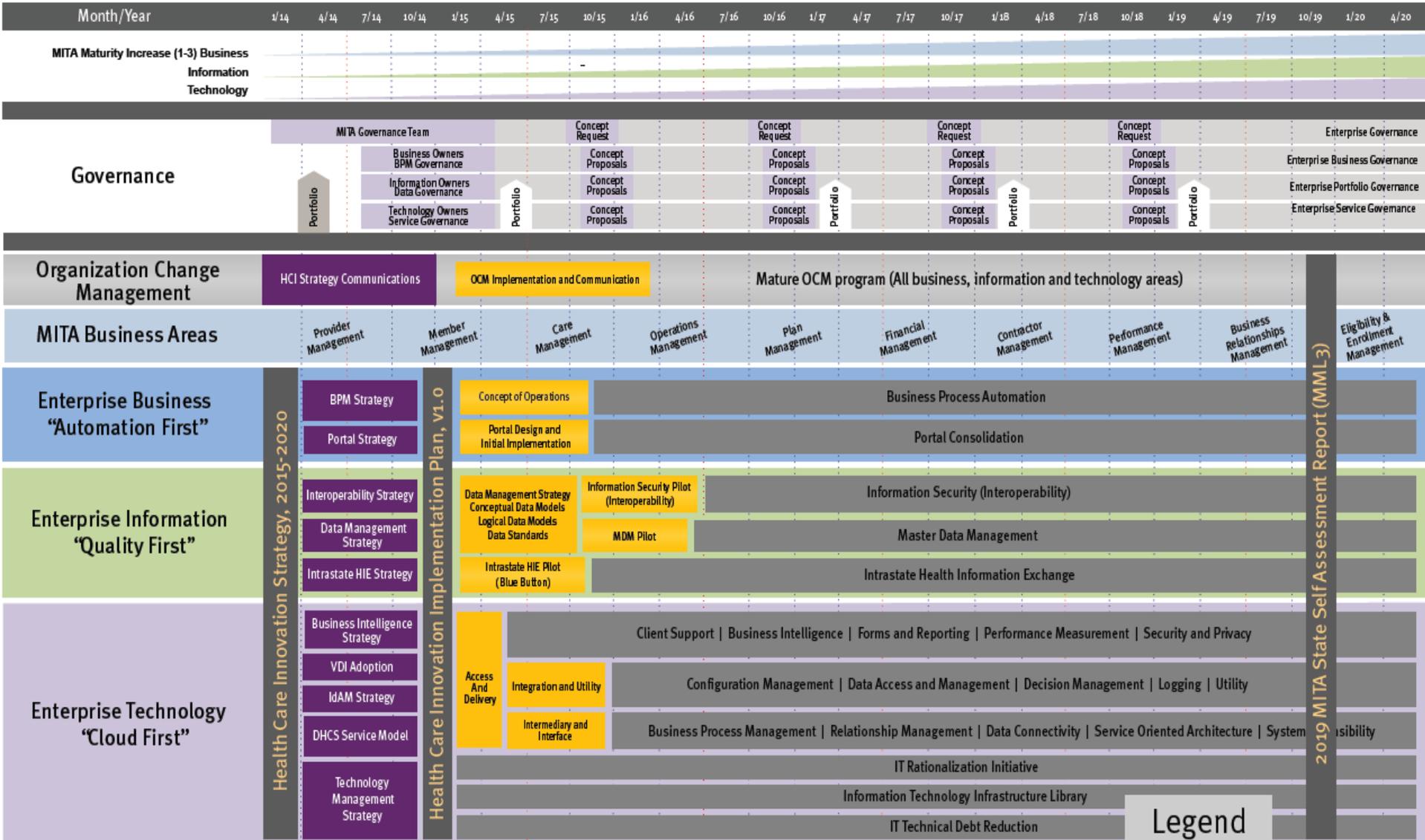
Strategic Plan for Enterprise Innovation and Technology Services



Category
Governance
Organization and Culture Change Management
Enterprise Business (Business Process Management and Workflow Automation)
Enterprise Information (Master Data Management, Data Management and Delivery Strategy)
Enterprise Technology (BPMS, Services, Security, & Platforms)

Health Care Innovation Strategy: A 2020 Vision

Strategic Plan for Enterprise Innovation and Technology Services





Measuring Goal 1 – Maturity

- Percent of MITA ML3 capabilities road mapped
- Percent of strategic projects entering the portfolio
- Ratio of strategic projects to tactical projects



Measuring Goal 2 – Velocity

- Percent process automation per business area
- Percent of interfaces documented and inventoried
- Percent of data assets accessible by health information exchanges
- Percent of projects initiated and tracked from Innovation Call Letter to implementation



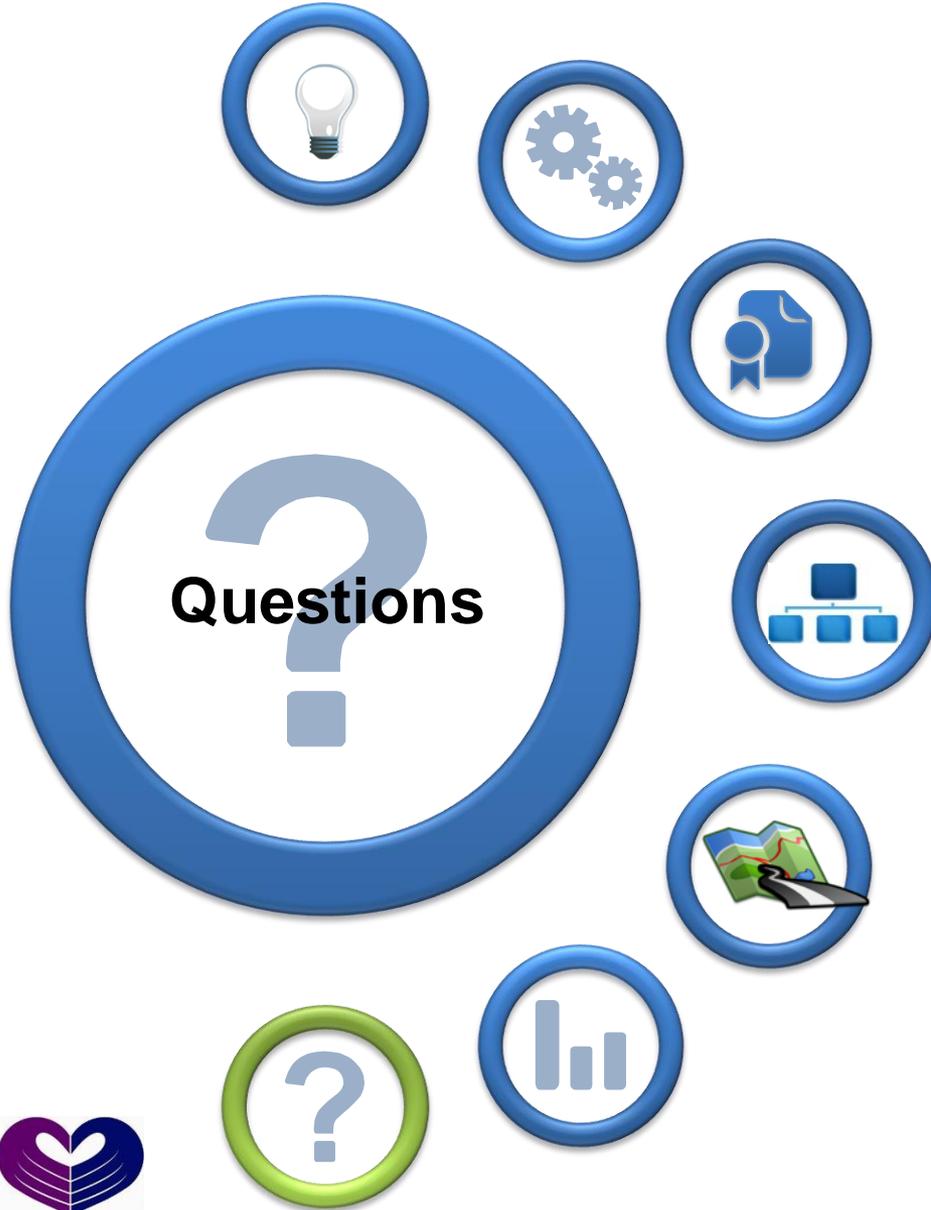
Measuring Goal 3 – Agility

- Mean time to respond to CMS and Partner requests
- Number of national standards adopted
- Number of redundant technologies supported



Measuring Goal 4 – Ability

- Mean time to fill a vacancy
- Percent of overall EITS employee satisfaction
- Number of staff trained in strategic capabilities
- Number of innovation awards issued



Any Questions?





Enterprise Architecture at California Department of Corrections and Rehabilitation (CDCR)

**Leading Business and IT Collaboration for
Improving Mission Outcomes**

Our Mission at CDCR

We protect the public by safely and securely supervising adult and juvenile offenders, providing effective rehabilitation and treatment, and integrating offenders successfully into the community.

EA Focus Areas

- **Division of Rehabilitative Programs (DRP) Use Case**
 - Solution Architecture related to Offender Rehabilitative Continuity of Care
 - Information Sharing (national, state, and local)
- **Other EA Focus Areas**
 - Diagnostic information for decision-makers
 - Enterprise solution portfolio lifecycle management
 - Other project solution architectures
 - Shared service platform architectures
 - Data modeling for enterprise reporting
 - Information security classification
 - IT procurement standards

Partnering with Mission: CDCR EA Approach

- You've Got to Get Your Head Into the Business
- Help Them to Shoulder the Burden of Their Mission
- Struggle and Challenge Are Good
- I Want to Partner With You and Bring in Business Solution (Business, Information, Technology) Architects

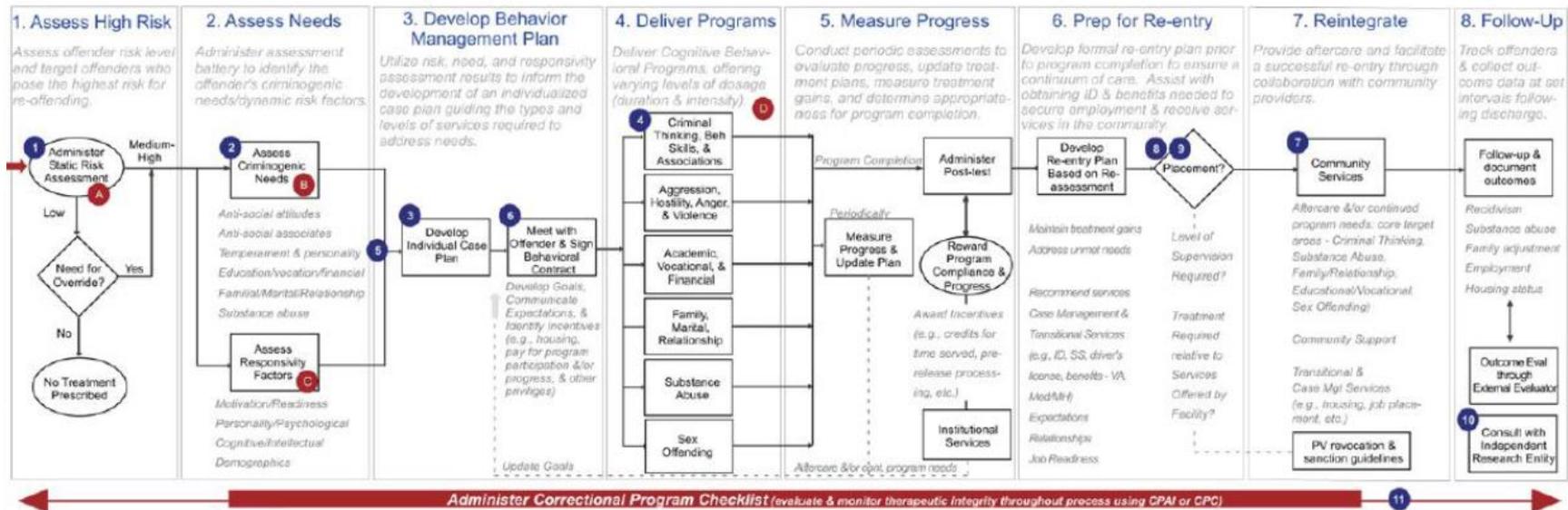
DRP EA Engagement Model



Solution Architecture is an abstraction for engaging with the business in terms they can easily relate with

DRP Logic Model: Unifying Business and IT

California Logic Model



- Communicate with business in their language*
- Allows focus on new capabilities to help offenders overcome the challenges that got them where they are today
- Facilitates investment decisions based on business capabilities to improve mission outcomes

*Continuity of the right care reduces recidivism

Capabilities to Improve Mission Outcomes

- Measure Intensity of Needs
- Build Capacity to Meet Needs
- Select the Right Programs
- Get the Right People in the Right Programs
- Measure Fidelity of Programs
- Measure Interim Outcomes
- Retention in Programs
- Help People Reintegrate

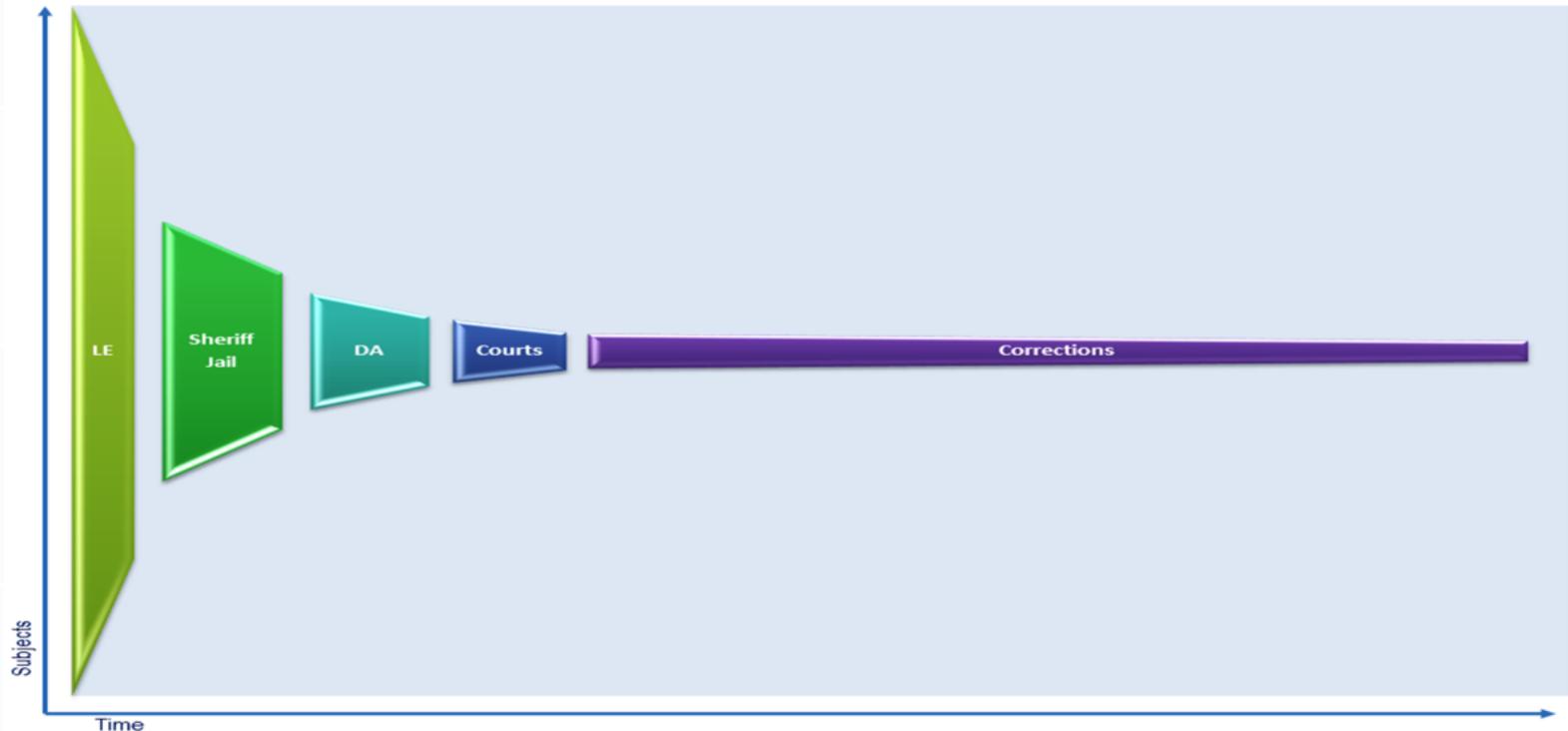
Recidivism



DRP Mission Outcomes: Broader Context

- Improving our mission outcomes requires effective collaboration with other government agencies
 - A Key Consideration: Continuity of Care

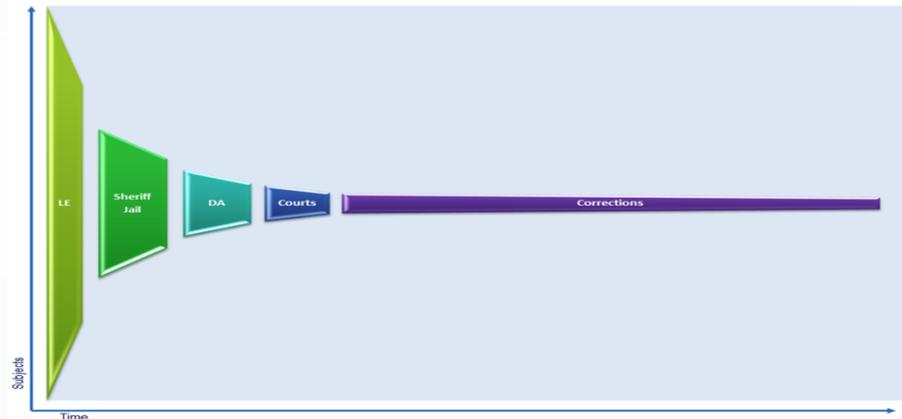
Relative Duration of Defendant/Offender in the Partnering Agencies



EA Focus Area: Foundational Capabilities

Business capabilities to improve CDCR mission outcomes require these foundational capabilities:

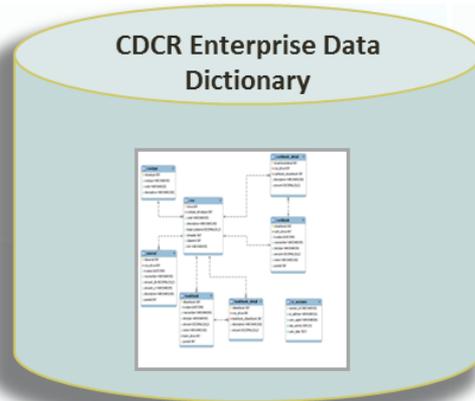
- Complete and accurate defendant /offender (esp. rehabilitation) information
- Interoperability and standards-based information exchange
- Speed and agility with which valuable corrections information is shared to / from partner agencies
- Data security



Foundational Capabilities: EA Solution

- **Defined Corrections Data Approach**
- **Aligned Data Elements to existing National Information Exchange Model (NIEM) core, Justice, etc.**
- **Creating Metadata Registry / Repository**
- **Efforts are underway to establish a common standard for information sharing between national, state, and local entities including Corrections-centric Information Exchange Packet (IEPD) definitions**

Corrections Data Approach

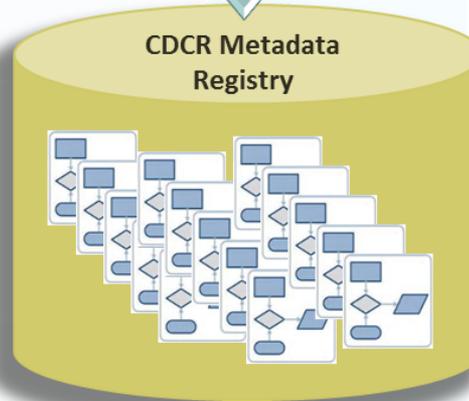
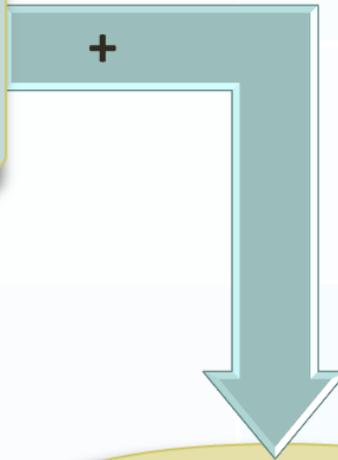


- 140+ CDCR Exchanges
- 11,000 Elements

6900 total 'logical' elements:

@ 5200 = aligned to existing NIEM core, Justice, etc.

@ 1700 = Unique elements requiring augmentation/extension from NIEM (or 24.6%)



4 Sub-domains:

corr-core = 1200 new elements

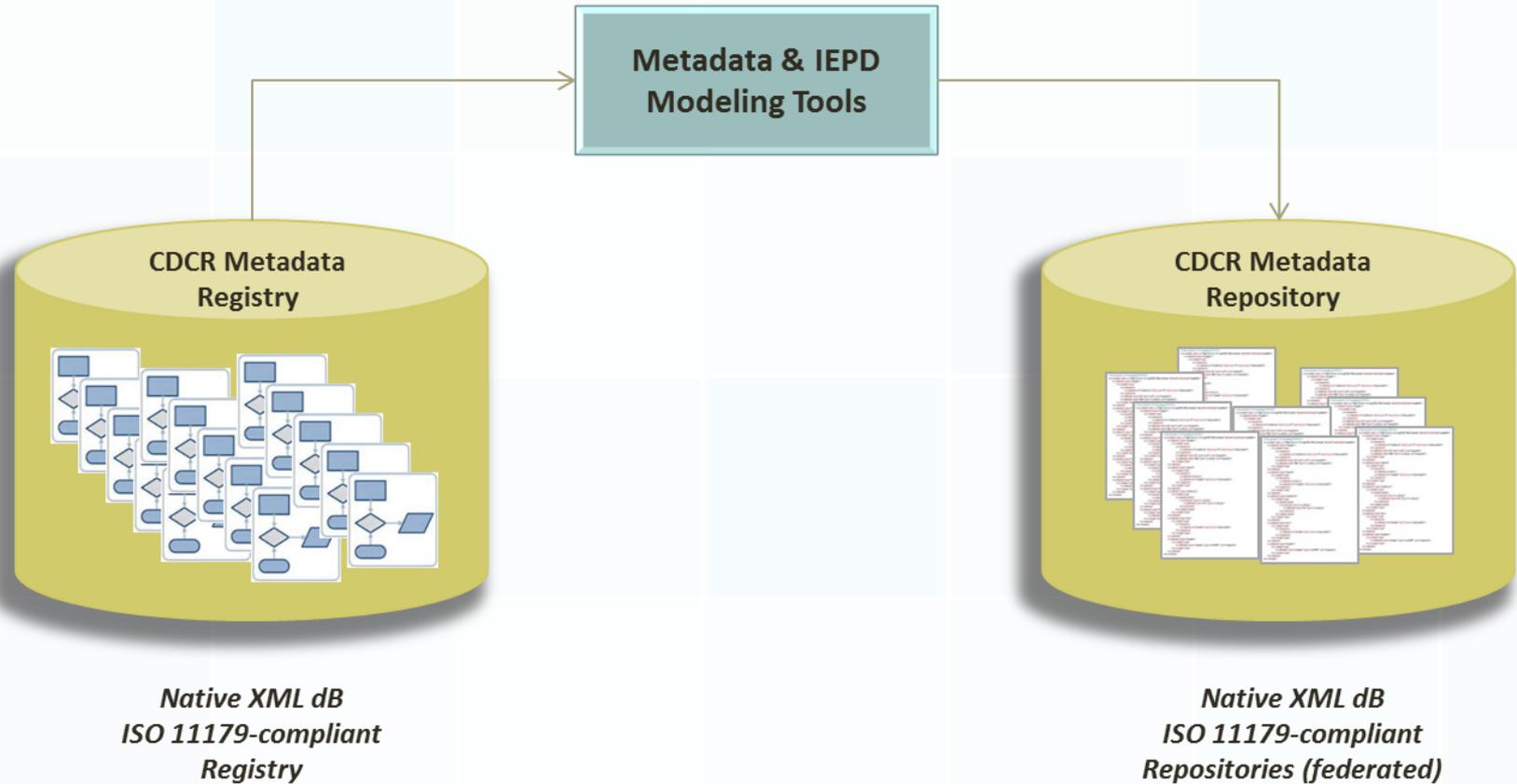
corr-fm = 230 new elements

corr-pm = 175 new elements

corr-rt = 120 new elements

cdc-codes = 200 enum lists

Metadata Registry/Repository Approach



Corrections Registry Layout

		Business Domains			CDCR Admin	
		Corrections Management	Parole Management	Rehabilitation and Training Program Management	Facility and Staff Management	Standards
Domain Prefix		cdcr-core	cdcr-pm	cdcr-rt	cdcr-fm	cdcr-codes
Subject Roles		Offender - Inmate	Inmate - Parolee	Inmate-Parolee - Client	Client	
Subject Process Lanes	<i>Intake</i>					
	<i>Assessment</i>					
	<i>Classification</i>					
	<i>Assignment</i>					
	<i>Supervision</i>					
	<i>Incident</i>					
	<i>Programs/Services</i>					
	<i>Finance</i>					
	<i>Release</i>					
Assets Process Lanes	<i>Financial Accounts</i>					
	<i>Facilities</i>					
	<i>Materials</i>					
	<i>Assignments</i>					
	<i>Programs/Services</i>					
	<i>Staff</i>					

Business Benefits

- Reduced time for exchange and IEPD development (SDLC)
 - Reduced Iterations in Development lifecycle
 - Reduced costs in IEPD implementation
 - National reference components for local implementation
- Increased re-usability and interoperability
- Promotes common semantics and business rules
- Availability of Corrections Business Objects (Reference IEPDs)
- Encourages and enhances Corrections information sharing
- **Continuity of the right care → reduced recidivism**

Some CDCR EA Success Factors

- Top-down support
- Matrix architects
- Strategic partnership with business and IT
- Central EA repository
- Inclusivity
- Relevancy
- Comprehensive views
- Human creative potential

Additional EA Outcomes

- Recognized by Gartner at recent Florida Symposium on our business engagement and delivering outcomes for the public
- Recognized nationally as contributing partner for intergovernmental national information exchange standards

One Final Word

Perspective: the capacity to view things in their true relations or relative importance

Questions?