Leveraging Business Architecture for Business Requirements Management

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Business Architecture Is Not Optional for Business-Outcome-Driven EA

- Successfully executing a business strategy depends on business architecture to help inform and guide a rigorous analysis of the business, its context and the disruption it faces.

- Business architecture is essential to strategically respond to massively disruptive business and technology change.

- Without business architecture, "EA" efforts are just "IT architecture," and will fail to demonstrate and deliver significant business value outcomes.

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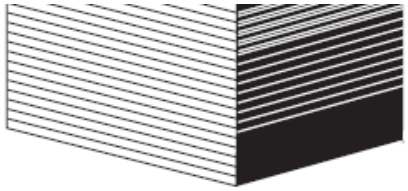
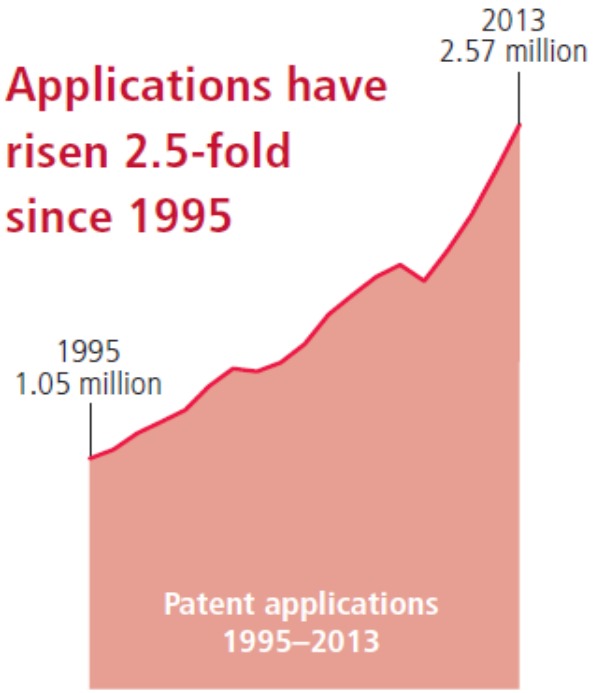
United States Patent and Trademark Office (USPTO)

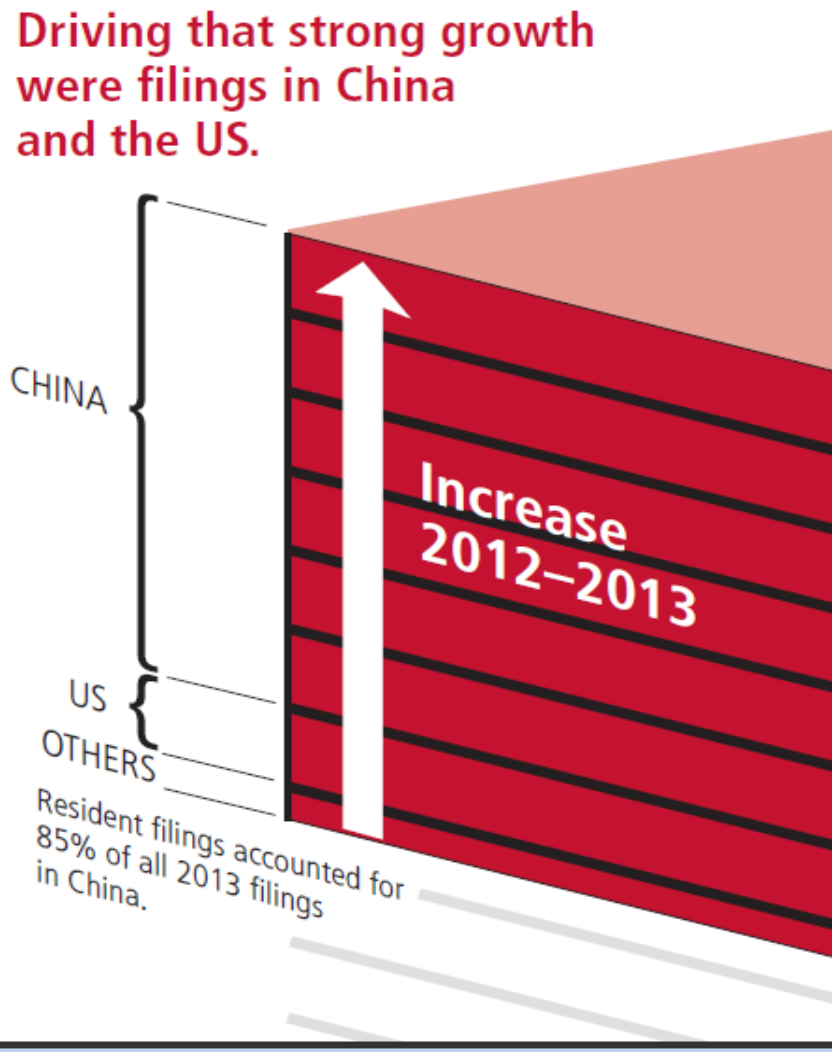
Background

- USPTO: Federal agency for granting U.S. Patents and registering Trademarks
- Vision: Leading the World in Intellectual Property Protection and Policy
- Mission: Fostering innovation, competitiveness and economic growth, domestically and abroad by delivering high quality and timely examination of patent and trademark applications, guiding domestic and international intellectual property policy, and delivering intellectual property information and education worldwide, with a highly skilled, diverse workforce.
- Trademark Office and Trademark Trial and Appeals Board (TTAB) are unique business units within the USPTO

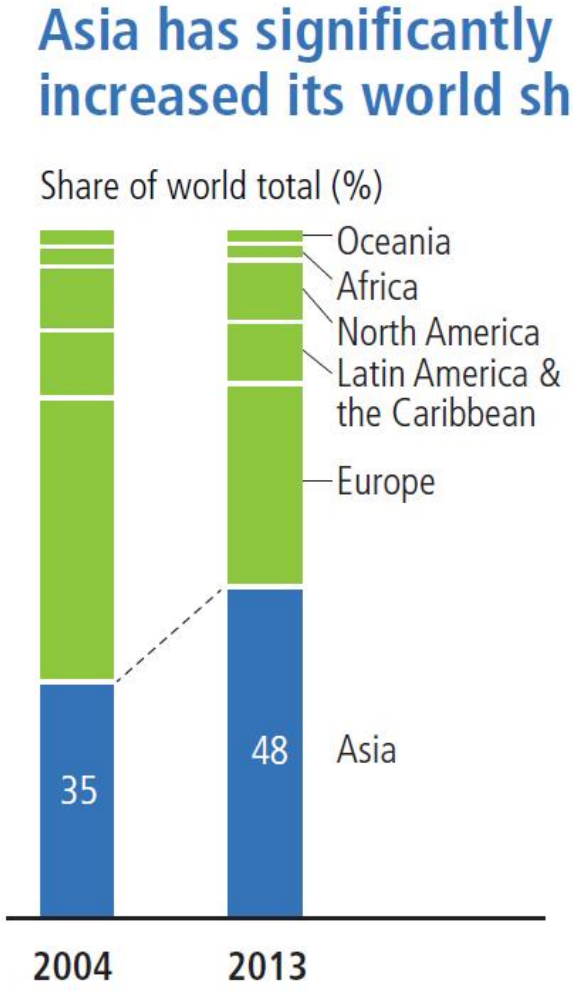
Patent Application Growth (WIPO)

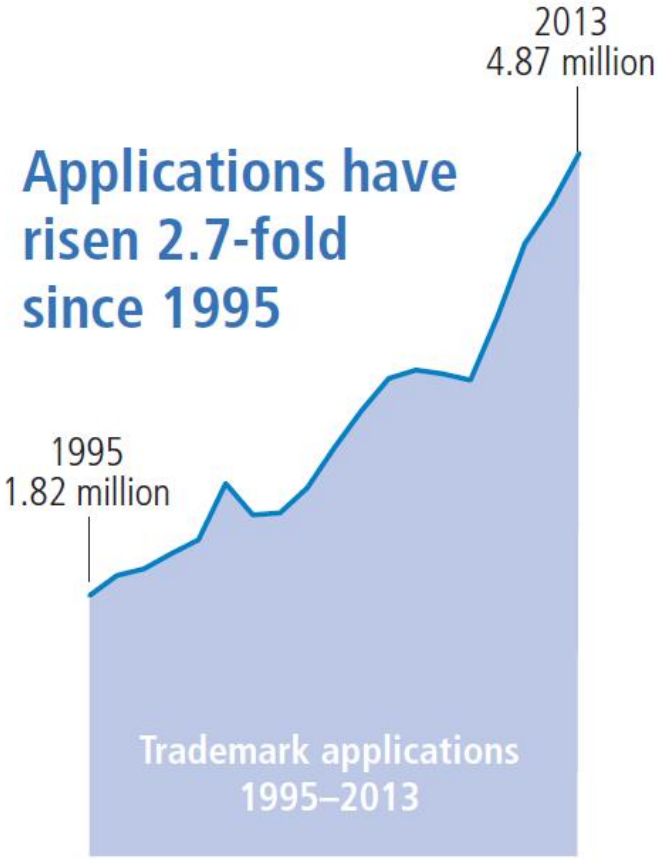






Trademark Application Growth (WIPO)

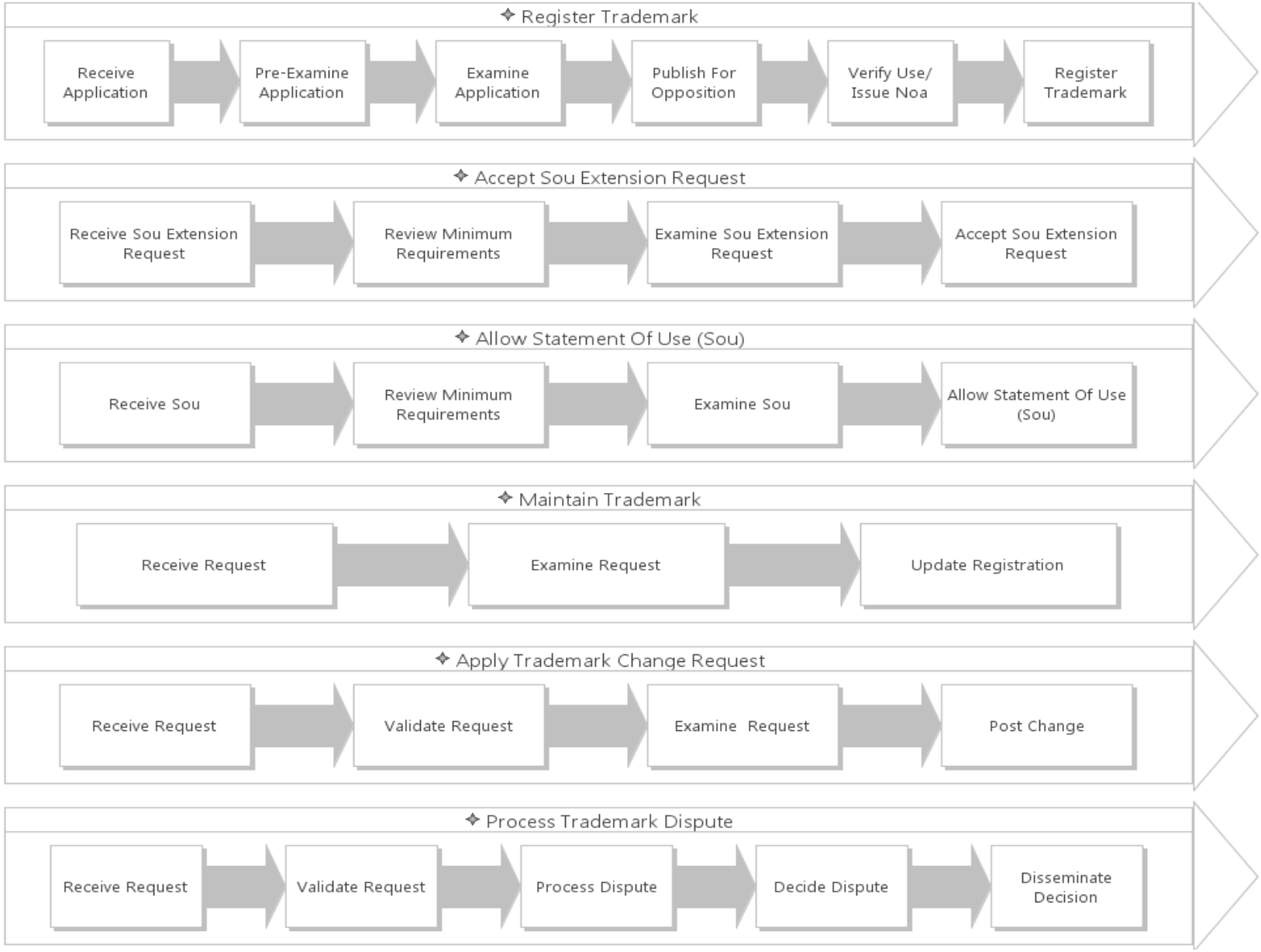




Trademark Business Architecture

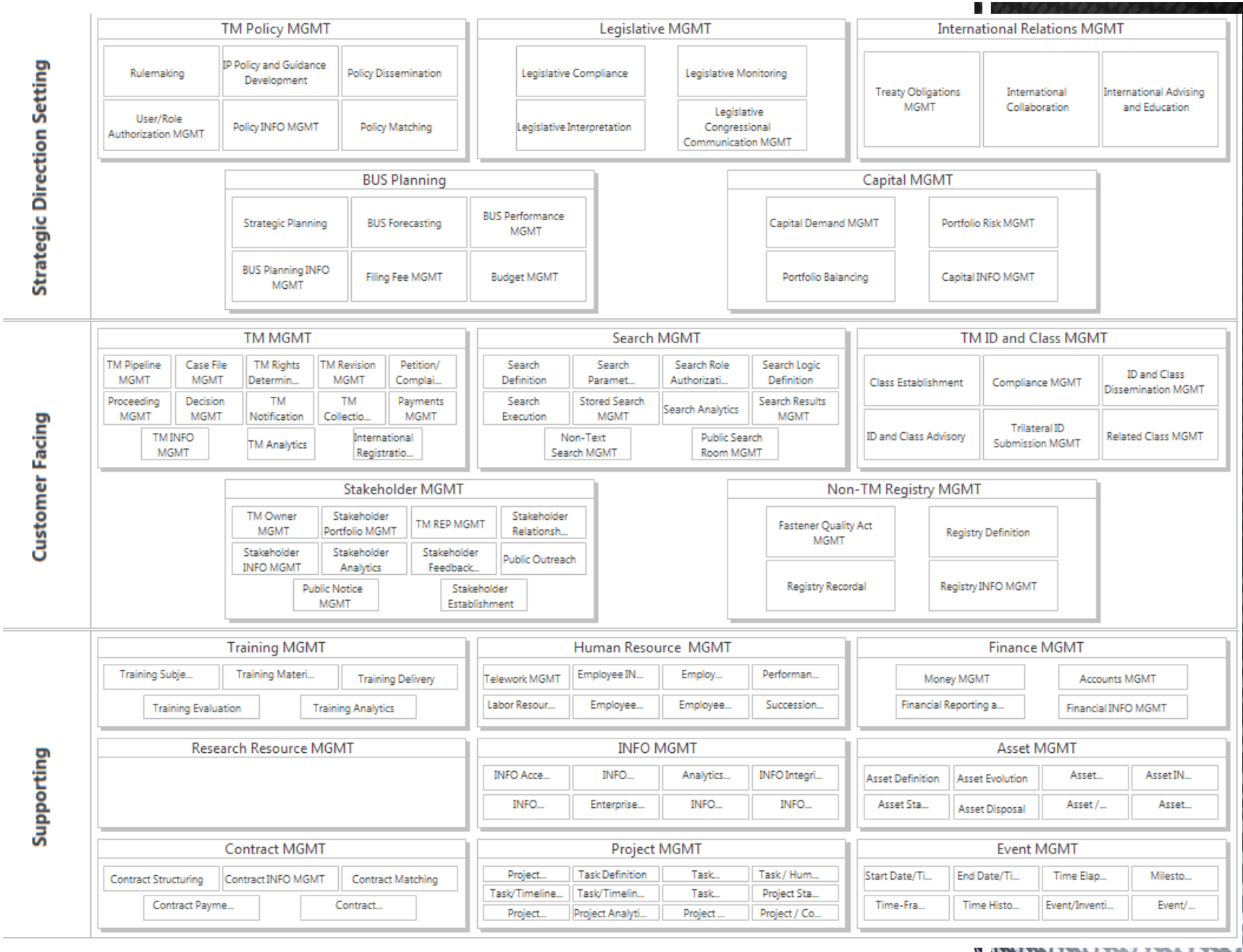
- The Trademark Office and Trademark Trial and Appeals Board (TTAB) drafted a business architecture that covers the entire Trademark business
  - This work was performed by the business and the business owns the business architecture
  - The enterprise architecture team supports business architecture packaging, publication and dissemination
- The Trademarks business architecture established in 2010 includes:
  - Capability map
  - Value streams
  - Value stream / capability cross-mappings
  - Routing maps and routing map worksheets for selected value stream stages
- USPTO and the Trademark Office is using the business architecture for:
  - For business impact analysis, business planning and prioritization
  - To support a major business and IT initiative - Trademark Next Generation (TMNG)
  - Provide a framework for long-term IT asset management

Sample Trademark Value Streams



There are move than 20 value streams across the business

Trademark Capability Map – Levels 1-2



Trademark Next Generation

- **The Trademark Next Generation (TMNG)** will deliver:
- Fully electronic, separate, sustainable, end-to-end system in which technology and user services will be developed, managed and adapted in an efficient and cost effective manner that meets current and future needs of the Trademark Office and system users.
- Resulting next generation IT systems, platform and functionality will enable optimal use of Trademark data by the public and employees.
- Business architecture is central to this effort with support established at senior management level

Source:
https://www.fbo.gov/index?s=opportunity&mode=form&id=4b4877097088a8ae4bac3587e2b051cd&tab=core&_cview=0

How the TM Business Architecture is utilized for TMNG

- Strategic:
  - The Business Architecture is a core component of the TM Business Priorities list, which is reviewed by the Office of the CIO (OCIO) and the Trademark business on a quarterly basis to determine “what comes next”.
  - The Priorities list is decomposed into projects, which are mapped to OCIO Programs within the TMNG Portfolio
  - Value streams, stages and capabilities are referenced in planning documents such as Capital Investment Decision Papers, Project Charters, IT Plans, etc.
- Tactical:
  - The Business Architecture is used to define the scope of work for TMNG projects
  - Project Managers, Scrum Masters and Product Owners decompose the Capabilities defined for their project into Release and Sprint goals
  - Business Analysts and Product Owners leverage the Business Architecture to develop routing maps to define the stakeholders, triggers and events for each stage in a Value stream. This, along with Routing map worksheets, are used to define Epics and User stories
  - Mapping User stories to the Business architecture hierarchy provides teams with the ability to search on specific capabilities to see what user stories already exist, what code has been developed, and to determine what can be leveraged for re-use

Utilizing the Business Architecture from an Agile Requirements Perspective

Defines what the UXD, BA's and PO's need to focus on when conducting interviews and drafting user stories

Business Priorities List

EPMS

Priorities are used to identify and scope projects

Strategy

Value Stream

For each priority, the Value Streams, Stages and Capabilities in scope are defined

Stage

Stage

Capability

Capability

Capability

Capability

Routing Maps & Worksheets

BA's create routing maps with the SME's to understand the workflow

Many capabilities are repeated in each Stage; utilizing the BizArch prevents duplication and promotes ***reuse*** of code and services

Release Planning

Epic

Epics are a collection of user stories that provide functionality for a stakeholder that can be delivered in a Release; They make up the product backlog

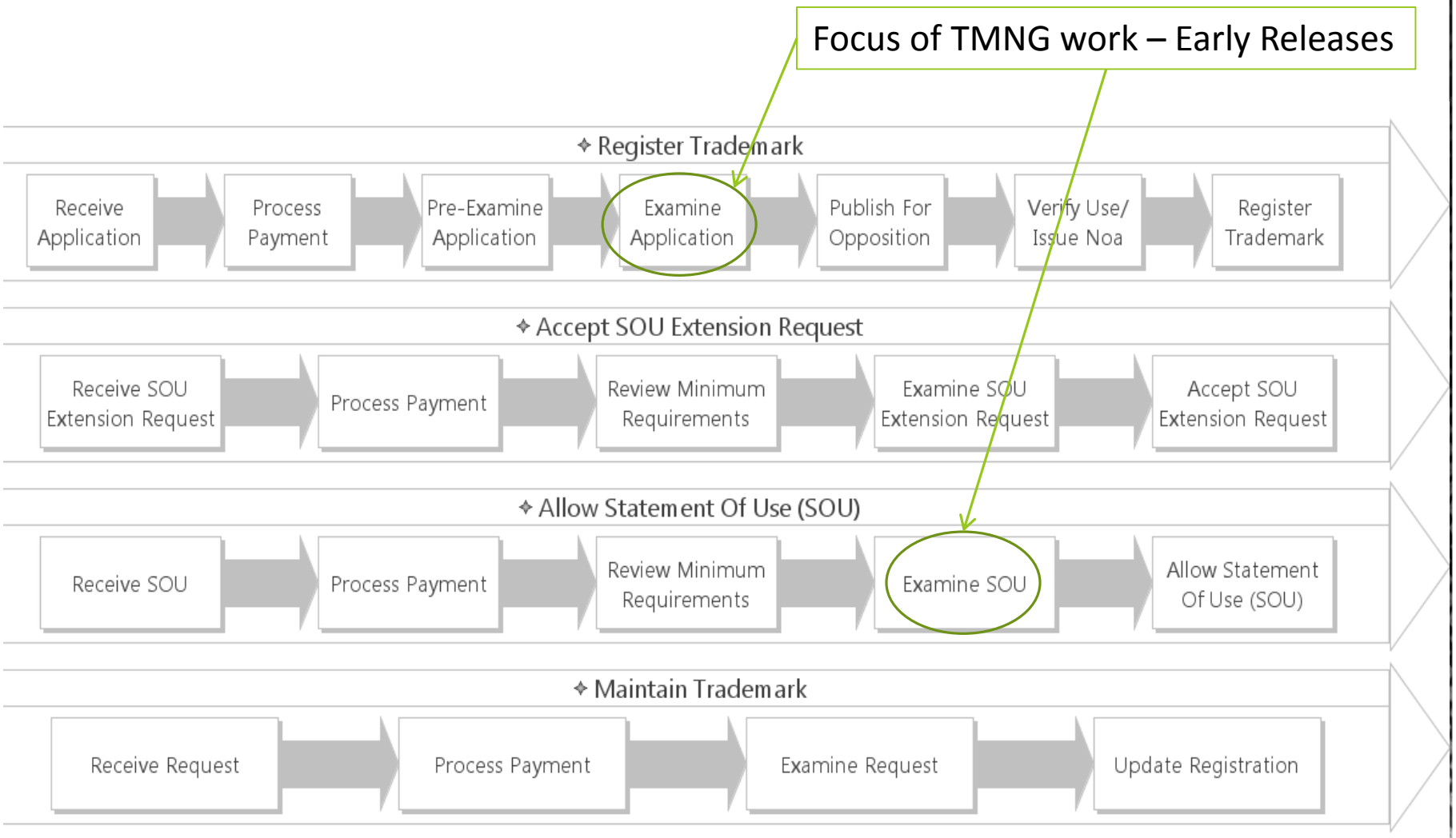
User Story

Task

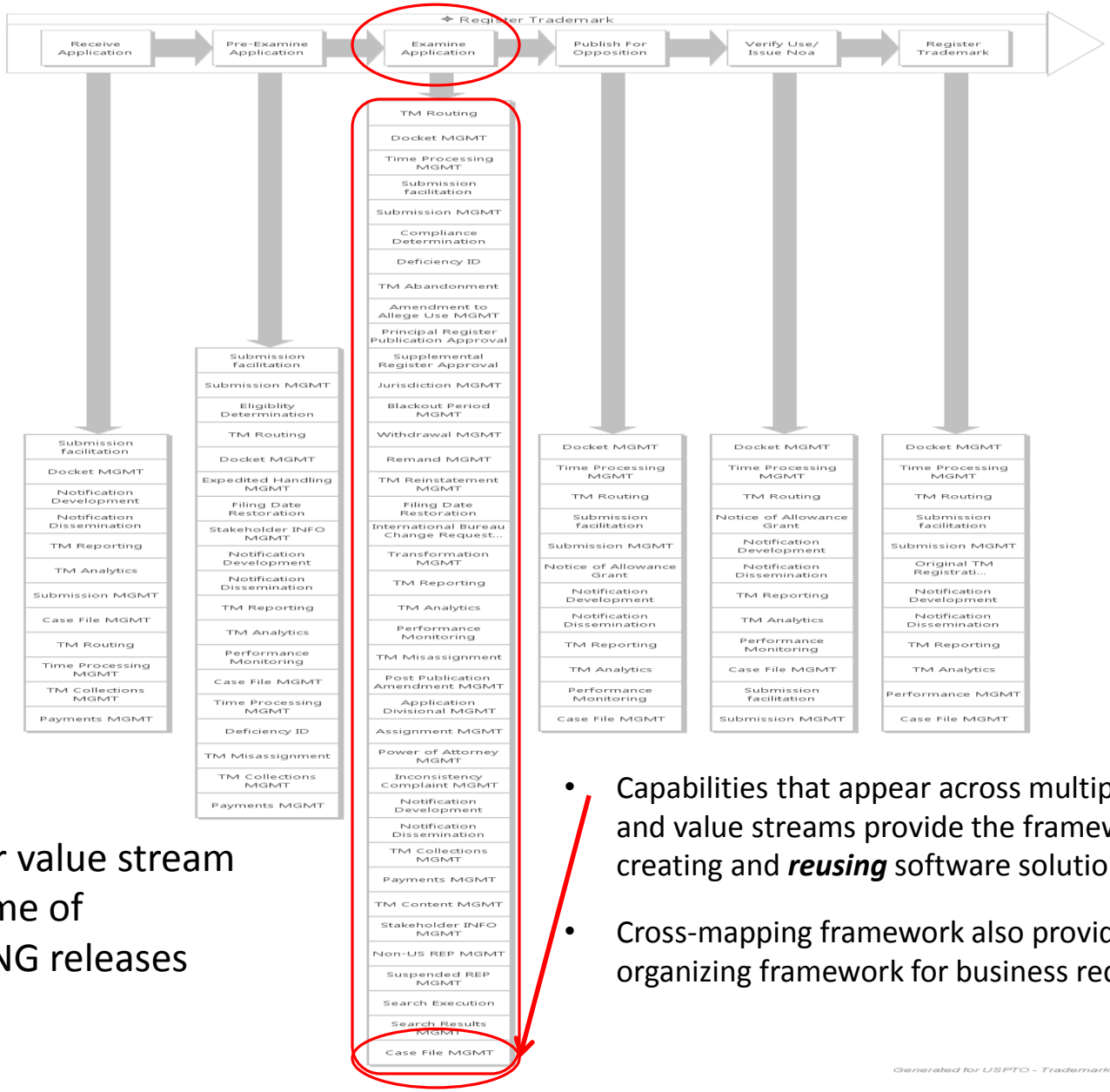
Sprint Execution

User stories are refined to include Business rules based on the Routing Map worksheets

Value Stream Used For Release Planning



Value Stream / Capability Cross-mapping: A Frame of Reference for TMNG Program Roadmaps



Capabilities under value stream stage provide frame of reference for TMNG releases

- Capabilities that appear across multiple stages and value streams provide the framework for creating and ***reusing*** software solutions
- Cross-mapping framework also provides an organizing framework for business requirements

Generated for USPTO - Trademarks

Role of Routing Maps in TMNG and Agile

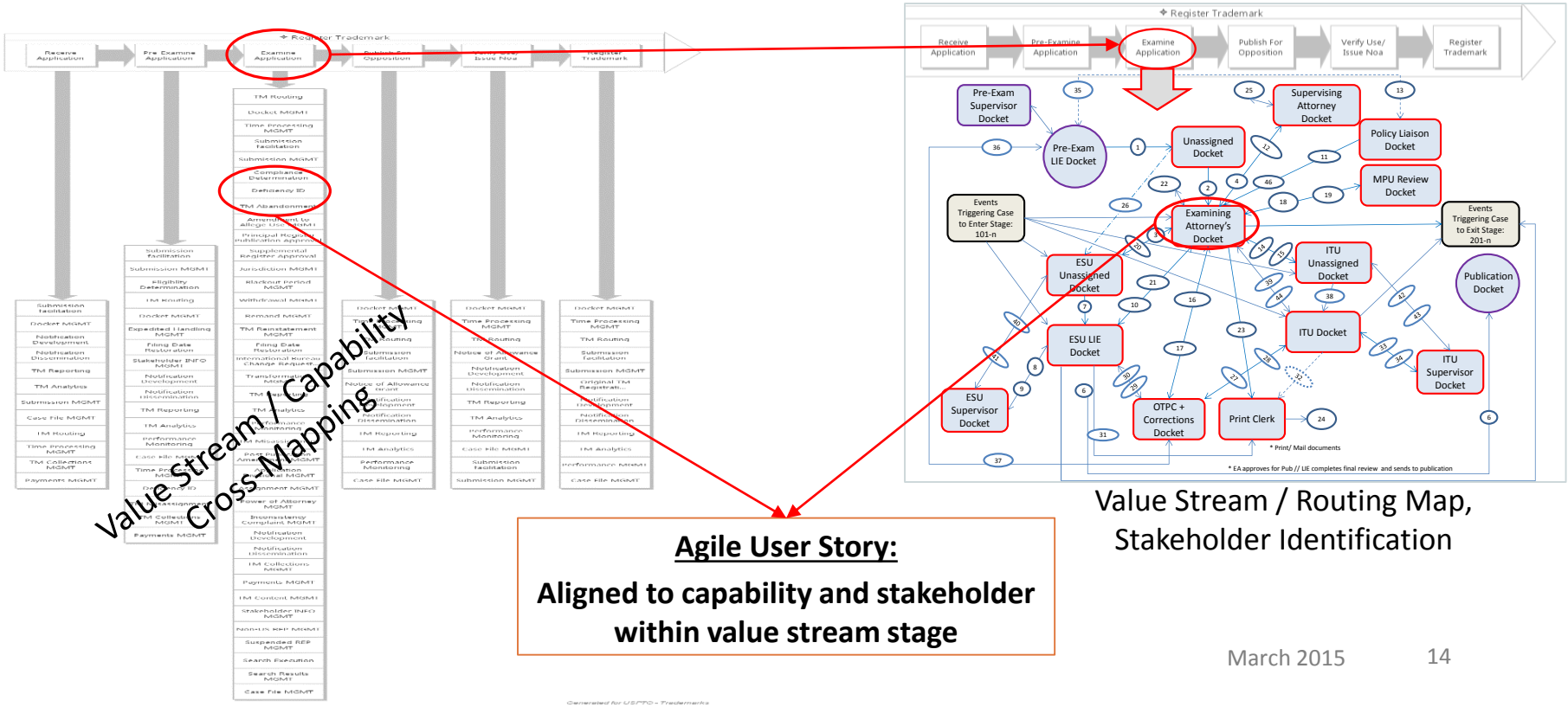
The value stage / capability / stakeholder helps frame an agile user story to ensure that each user story focuses on improving a capability, within a value focused perspective, in relation to a participating stakeholder targeted by the story.

Value Stream – Register Trademark

Value Stream Stage – Examine Application

Capabilities – Trademark Abandonment

User Story– "As an Examining Attorney, I want to abandon a case"

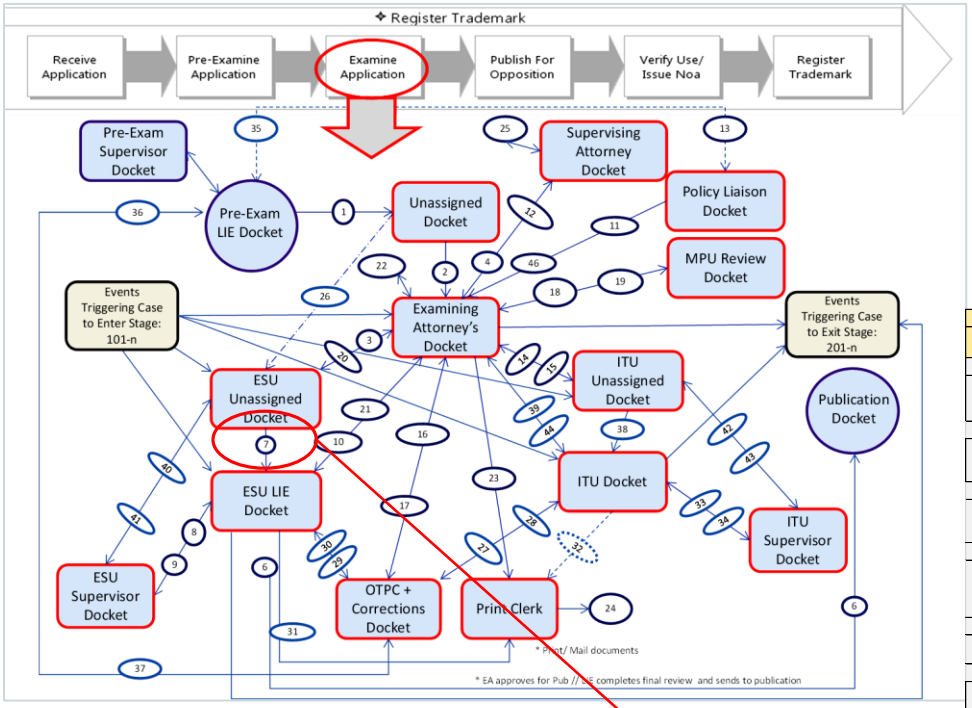


Value Stream / Routing Map, Stakeholder Identification

Agile User Story:

Aligned to capability and stakeholder within value stream stage

Using Routing Maps to Define Workflow and Frame User Stories



- Each value stream stage decomposes into a state-based, dynamic rules based routing map
- Routing maps show all possible events involving work transfers, state change or other action to be taken

Event #	Done	Sending Source				Receiving Source				Triggering Event	Status (TRM Team Use
		Value Stream	Stage	Docket or Source	Filter View	Value Stream	Stage	Docket or Target	Filter View		
Column1	Column12	Column2	Column3	Column4	Column13	Column5	Column6	Column7	Column14	Column8	
1	x	Register Trademark	Pre-Examine Application	Pre-Examiner Docket		Register Trademark	Examine Application	Examination Unassigned Docket		Pre-examination complete	
2a	x	Register Trademark	Examine Application	Examination Unassigned Docket	Unassigned Cases	Register Trademark	Examine Application	Examining Attorney Docket	First Action	Case self assigned to attorney	
2b	x	Register Trademark	Examine Application	Examination Unassigned Docket	Unassigned Cases	Register Trademark	Examine Application	Examining Attorney Docket	First Action	Request new assigned cases to attorney	
2c	x	Register Trademark	Examine Application	Examination Unassigned Docket	Unassigned Cases	Register Trademark	Examine Application	Examining Attorney Docket	First Action if new case, else queue as per current status	Supervisor assigns or transfers case to attorney	
3		Register Trademark	Examine Application	Examining Attorney Docket		Register Trademark	Examine Application	ESU Unassigned Docket		EA/EA-PA/OA	
4		Register Trademark	Examine Application	Examining Attorney Docket		Register Trademark	Examine Application	Supervising Attorney Docket		* full signature review * QA	
5		Register Trademark	Examine Application	Examining Attorney Docket		Register Trademark	Examine Application	Policy Liaison Docket		Case requires jurisdiction review	
6a	x	Register Trademark	Examine Application	LIE Docket	Pub Review	Register Trademark	Publish for Opposition	Publication Docket		Pub Review complete	
6b	x	Register Trademark	Examine Application	LIE Docket	Pub Review	Register Trademark	Publish for Opposition	Publication Docket		Pub and Issue Review complete, ready for registration	
7a		Register Trademark	Examine Application	ESU Unassigned Docket		Register Trademark	Examine Application	ESU LIE Docket	As per Status	Request new cases	
7b		Register Trademark	Examine Application	ESU Unassigned Docket		Register Trademark	Examine Application	ESU LIE Docket	SSR Queue	Request Unassigned SSR	
7c		Register Trademark	Examine Application	ESU Unassigned Docket		Register Trademark	Examine Application	ESU LIE Docket	Suspension Queue	Request Unassigned Suspensions	
7d		Register Trademark	Examine Application	ESU Unassigned Docket		Register Trademark	Examine Application	ESU LIE Docket	Pub Review Queue	Request Unassigned Pub Review	
8		Register Trademark	Examine Application	ESU LIE Docket		Register Trademark	Examine Application	ESU Supervisor Docket		Request review	
9a		Register Trademark	Examine Application	ESU Supervisor Docket		Register Trademark	Examine Application	ESU LIE Docket	SSR Queue	Create SSR	

- The routing map worksheet (show to right) details the events associated with each number on the routing map
- Events and related work transition, state change and action to be taken is detailed in the worksheet
- Worksheet line items closely align to agile user stories and are surfaced during user working sessions as needed

Business, Data and Application Architecture

- The capability map is used as an input to data architecture work, specifically while designing conceptual and logical data models
- Capabilities and value streams are mapped to legacy applications as input to retirement planning
- As new capabilities are deployed, NG SW will phase out the Legacy SW
- Capabilities are being leveraged as input to a shared services approach, which will be used across USPTO as a whole

Closing Discussion

- Business architecture was defined by the business and is used by the TMNG program and OCIO team for:
  - Business roadmap definition
  - Planning and tracking evolution of software portfolio
  - Making sure multiple projects work against same business perspective
  - Requirements tracking, articulation and validation
  - Framework for envisioning case management
  - Input to a shared services environment

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