

Agile Software Requirements

Software Requirements Engineering – 40688

Computer Engineering department

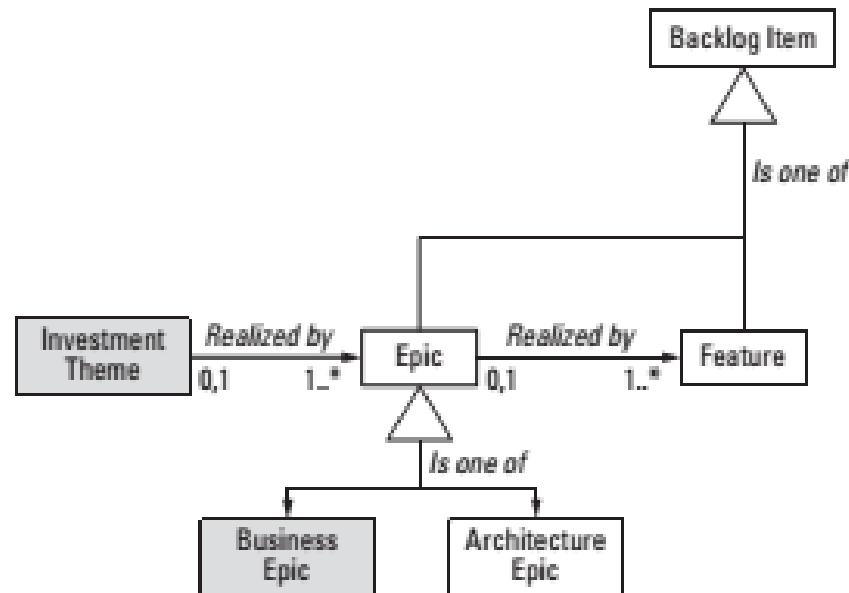
Sharif university of technology

Fall 402

Chapter 23:

Investment themes, epics, and Portfolio Planning

Strategic investment themes and epics in the requirements model



Investment themes

- Investment themes represent the set of initiatives that drive the enterprise's portfolio.
- By governing the investment in the various systems, products, and applications for which the teams are responsible.
- Some product companies refer to these as strategic product themes.
- The set of strategic investment themes drive the Vision for all products, systems, and services, and new *epics* are derived from this decision.
- In most enterprises, these decisions happen at the business unit level based on annual or twice-annual budgeting process.

That can be

- Investment in existing product offerings enhancements, support, and maintenance.
- Investment in new products and services—products that will enhance revenue and/or gain new market share in the current or near-term budget period.
- Investment in futures—product and service offerings that require investment today but will not contribute to revenue until outlying years.
- Investment themes are key product value propositions that provide marketplace differentiation and competitive advantage

Communicating Investment Themes

- Communicating the decision via themes is fairly straightforward.
- Themes are very high level and are easily represented in bullet form.
- Introduce voice and video chat
- Outlook integration
- Personalization
- Mail for Mobile devices 2.0
- Group chat from within mail

Why Investment Mix Rather Than Backlog Priority?

- Backlog items are designed to be addressed in priority order.
- Investment themes are designed to be addressed on “a percentage of resources to be made available basis.”
- If the lowest-priority (smallest investment commitment) investment theme is not addressed over time, the enterprise *may ultimately fail in its mission*.
- If the enterprise is focused, only a few themes are active at any one time, so we shouldn't require a backlog management tool.

Epics

- Business epics are identified, prioritized, estimated, and maintained in the **portfolio backlog**.
- They may be stand-alone (developed in a single program or business unit), or like architectural epics, they may cut across.
- Time—affecting multiple releases of products, systems, services, or solutions
- Scope—affecting multiple products, systems, services, or solutions
- Organization—affecting multiple teams, programs, business units

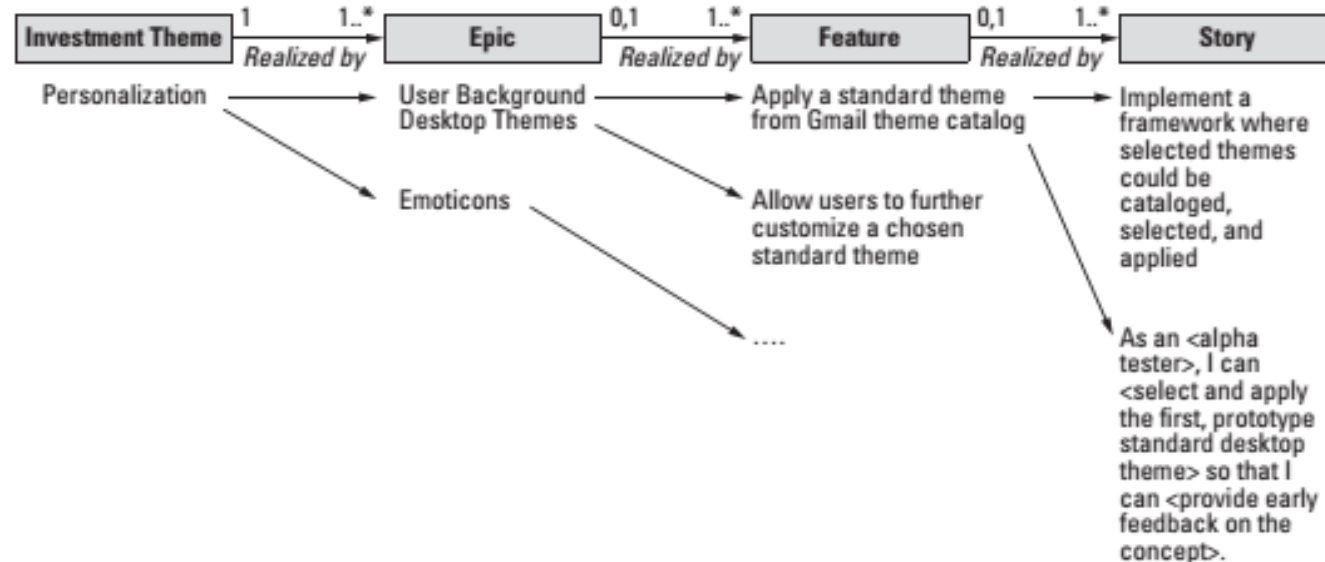
Discriminating Epics, Features, and Stories (1)

Epics, features, and stories are all forms of expressing user need and benefit but at different levels of abstraction.

We admit that there is no scientific way to determine whether a “thing you know you want to do” is an epic, feature, or story.

Discriminating Epics, Features, and Stories (2)

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Discriminating Epics, Features, and Stories (3)

Type of Information	Description	Responsibility	Time Frame and Sizing	Expression Format	Testable
Investment theme	Big, audacious, game changing, initiatives. Differentiating, and providing competitive advantage.	Business executives, Portfolio management.	Span strategic planning horizon, 12 to 18+ months. Not sized, controlled by percentage investment.	Any: text, prototype, PPT, video, conversation.	No
Epic	Bold, impactful, marketable differentiators.	Portfolio management. Business analysts, product and solution management, system architects.	6 to 12 months. Sized in points.	Most any, including prototype, mock-up, short phrase, or vision statement.	No

Discriminating Epics, Features, and Stories (4)

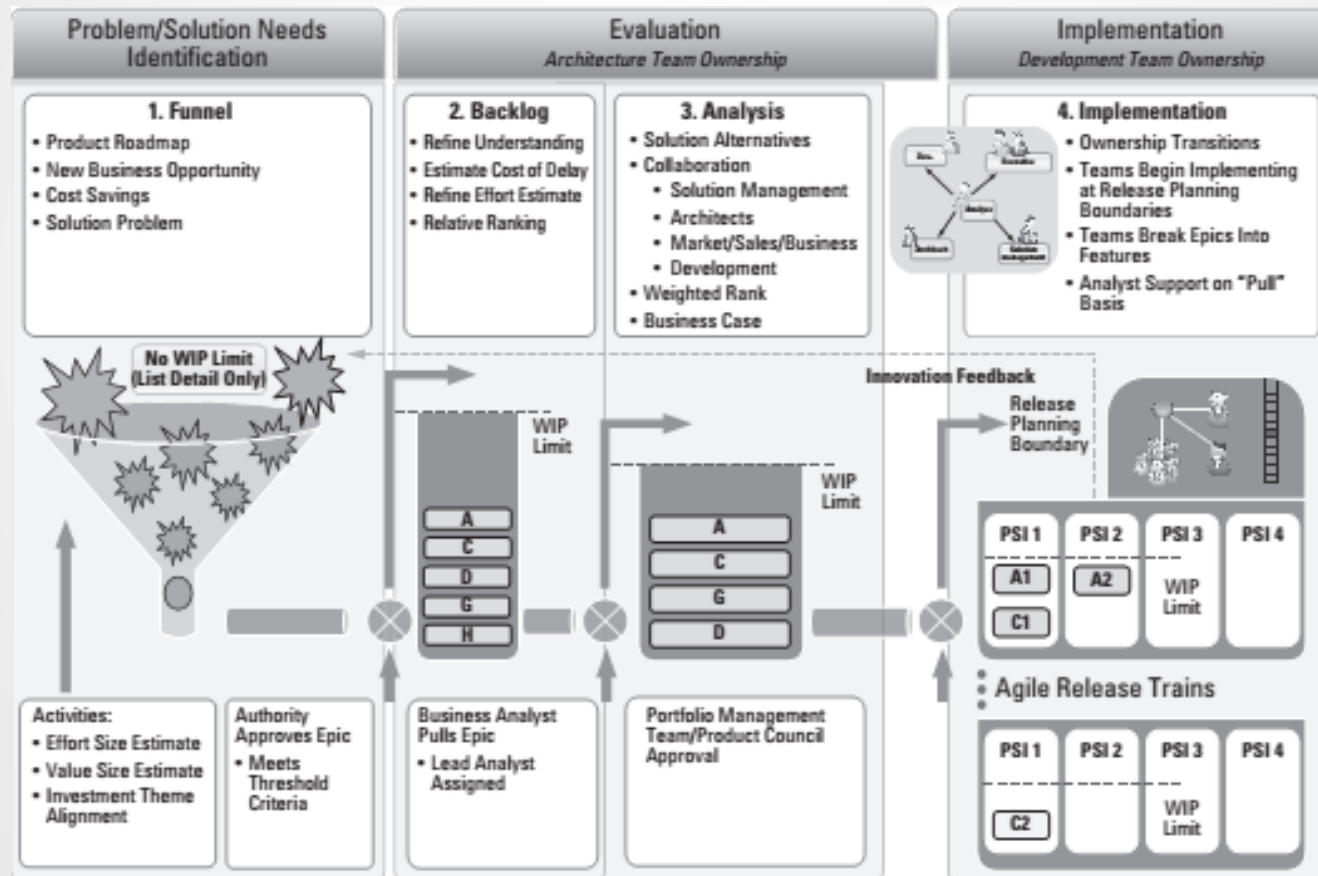
Feature	Short, descriptive, value delivery and benefit-oriented statement. Customer and marketing understandable.	Product manager and product owner.	Fits in an internal release (PSI), divide into incremental subfeatures as necessary. Sized in points.	Key phrase or user story voice form. May be elaborated with system use cases.	Yes
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Story	Small, atomic. Fit for team and detailed user understanding.	Product owner and team.	Fits in a single iteration. Sized in story points.	User story canonical form.	Yes
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Types of Epics

- User / consumer experience epics
- Web services epics
- Distribution partner epics

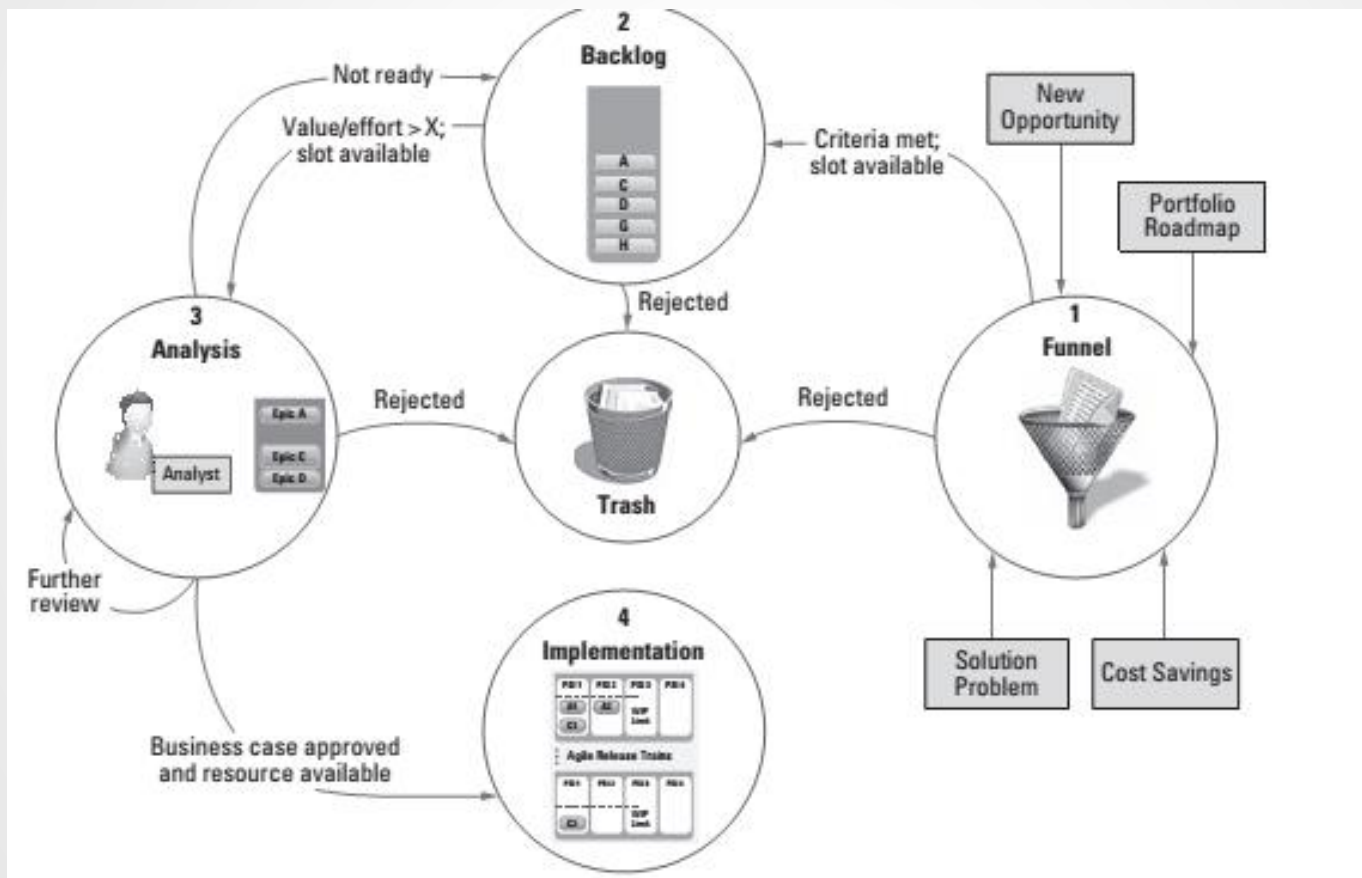
Graphic overview of the business epic Kanban system



Four queues

1. Funnel (solution needs identification)
2. Backlog
3. Analysis
4. Implementation

State Diagram View



The Funnel: Problem/Solution Needs Identification

- The funnel queue is the holding area for all business epics that have been identified.
- The primary activity for epics in this state is a periodic review and preliminary analysis of the item by the portfolio management team.
 - A preliminary estimate of the *size*
 - A preliminary estimate of the value of the epics,
 - Degree of alignment with the enterprise's current investment themes

Ranking Criteria for Business Epics in the Funnel State

Ranking Item	Scale
Effort size	1, 2, 3, 5, 8, 13, 20, 40
Potential value	1, 2, 3, 5, 8, 13, 20, 40
Alignment to investment theme	0, .25, .5, .75, 1
Epic weight	$= (\text{Value/effort}) * \text{alignment}$

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Work-in-Process Limits

- Since this is the “capture” queue, there is no strict work-in-process limit associated
- With this state periodic pruning may be necessary to keep the list to a workable size (perhaps 50 to 75 items).
- The funnel queue, and the final decision to move an item to the backlog, is managed by the appropriate authority, often a senior business analyst or solution manager.

Cadence-Based Review, Discussion, and Peer Rating

- The analyst team, working as a group, reviews and discusses all epics on the backlog on a regular cadence (perhaps every two weeks or so).
- During this review process, epics receive additional consideration and are further elaborated to advance understanding.
- This includes the diligence required to refine the estimates of effort and value.
- In addition, a cost of delay is assigned, which requires a more sophisticated understanding of the time element that drives the individual epic.

Template for Backlog Epics (1)

Name			Date entered	
Version			Changes	
Description				
Potential stakeholder sponsors				
Prerequisites				
Teams, products, programs, markets affected				
Notes				
Ratings		Weight	Net	Comments
Size		1		1, 2, 3, 5, 8, 13, 20, 40, 100

Template for Backlog Epics (2)

Cost of delay				
Business value		1		Same scale
Time value		1		Same scale
Risk reduction/ opportunity enablement		1		See below
Length of time in queue		.5		See below
Weighted rating (WSJF)				$= (BV + TV + RRV + (LT * .5)) / \text{size}$

Prioritization and Rating System

- We use the Weighted Shortest Job First (WSJF) prioritization system.
- The prioritization parameters:
 - Estimated size (implementation effort)
 - Estimated cost of delay for the epics.
 - *Business value*
 - *Time value*
 - Risk reduction/opportunity enablement
 - Length of time in the queue.

Pull from Transition to Analysis

- Since the next queue is WIP-limited, there may be no further decision criteria beyond the mature rating.
- A pull system may be applied. Any available business analyst can pull an epic into the next queue.

Work-in-Process Limits

- Items in this backlog queue require additional investment, so the state is WIP limited.
- A reasonable WIP limit might allow an average of 25 or so items in this particular queue.
- The limit can be adjusted over time based on the capacity of the business analyst team.

Analysis Activities

- Requirements workshops and other discovery techniques.
- Consideration of solution alternatives.
- Competitive analysis.
- Impact analysis—development, distribution, and deployment.
- Buy-or-build evaluation.

Analysis Activities

- Evaluation of internal resourcing versus outsourcing options.
- Refined estimates for cost and impact.
- Collaboration with development, solution managers, system architects, and executive sponsors.
- Market validation of value; assignment of cost of delay.
- Assigning an executive business sponsor.

Collaborations

- **With development and architects:**

To establish technical feasibility and impact on existing systems, the business analyst will involve development management, tech leads, and architects in the analysis and design alternatives work.

- **With solution management/product management:**

In a like manner, the impact on the marketplace and on the business must also be understood.

- **With executive stakeholders**

There are likely to be a few, key, executive-level stakeholders who have a keen interest in the opportunity or are likely to be impacted.

Decision Authority

- Because of the scope of the effort, the portfolio management team (or some other set of stakeholders who have the ultimate fiduciary responsibility for the product line, business unit, or enterprise) makes the final decision as to whether to proceed with implementation.
- Such councils typically include the chief executive for the domain, senior solution managers, line-of business owners, sales and marketing representatives, the CTO, and senior development managers.

Implementation

- Path A—transition to development
- Path B—create a new team to explore feasibility and build some architectural runway
- Path C—outsourcing
- Path D—purchase a solution