RUP &
Agile (Scrum)

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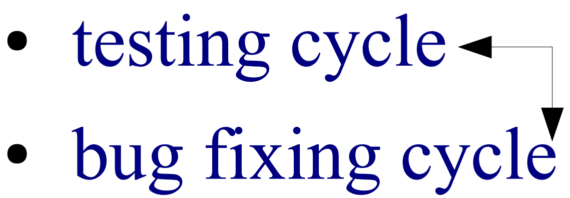
Waterfall

Traditional way to build systems

Sequential

- detailed planning
  - problem is identified, documented, designed
  - implementation tasks are identified, scoped and scheduled
  - approvals & revisions
- development cycle



- testing cycle
- bug fixing cycle

Waterfall

Strengths

- logical
  - requires preparation before execution
- organized
  - documented,
  - planned
  - deviations are exceptions and are tracked

Waterfall

Weakness

- not very flexible
  - good ideas need to be identified upfront
  - but what if I get an idea midway through development?
  - *"a great idea late in the release cycle is not a gift, it's a threat"*
- documentation heavy
  - abstract

need to protect data

use encryption for storage

RUP

Process

- configurable
  - no single process is suitable for all software development.
  - adapts to small & large development teams
- documentation
  - model based artifacts
  - UML

RUP

Building blocks

- roles (who)
  - responsibilities
- tasks (how)
  - unit of work
  - result oriented – should be useful
- work products (what)
  - resultant product

RUP

Life-cycle Phases

- four phases
  - inception, elaboration, construction, transition
- characteristics
  - sequential in nature
    - hmm... sounds like waterfall methodology
  - each phase focuses on a
    - key objective
    - milestone delivery

RUP – Life-cycle Phases

Inception

- vision document
  - scope the system
  - identify major players
  - risk, cost etc

Elaboration

- risk identification
- problem domain
- analysis & architecture

Construction

- build the software
- can be broken down into iterations

Transition

- transition from development to production

RUP Engineering Disciplines

Business modelling

- domain understanding

Requirements

- vision document & use cases

Analysis & Design

- blueprint for system realization

Implementation

- develop components

Test

- testing throughout the project

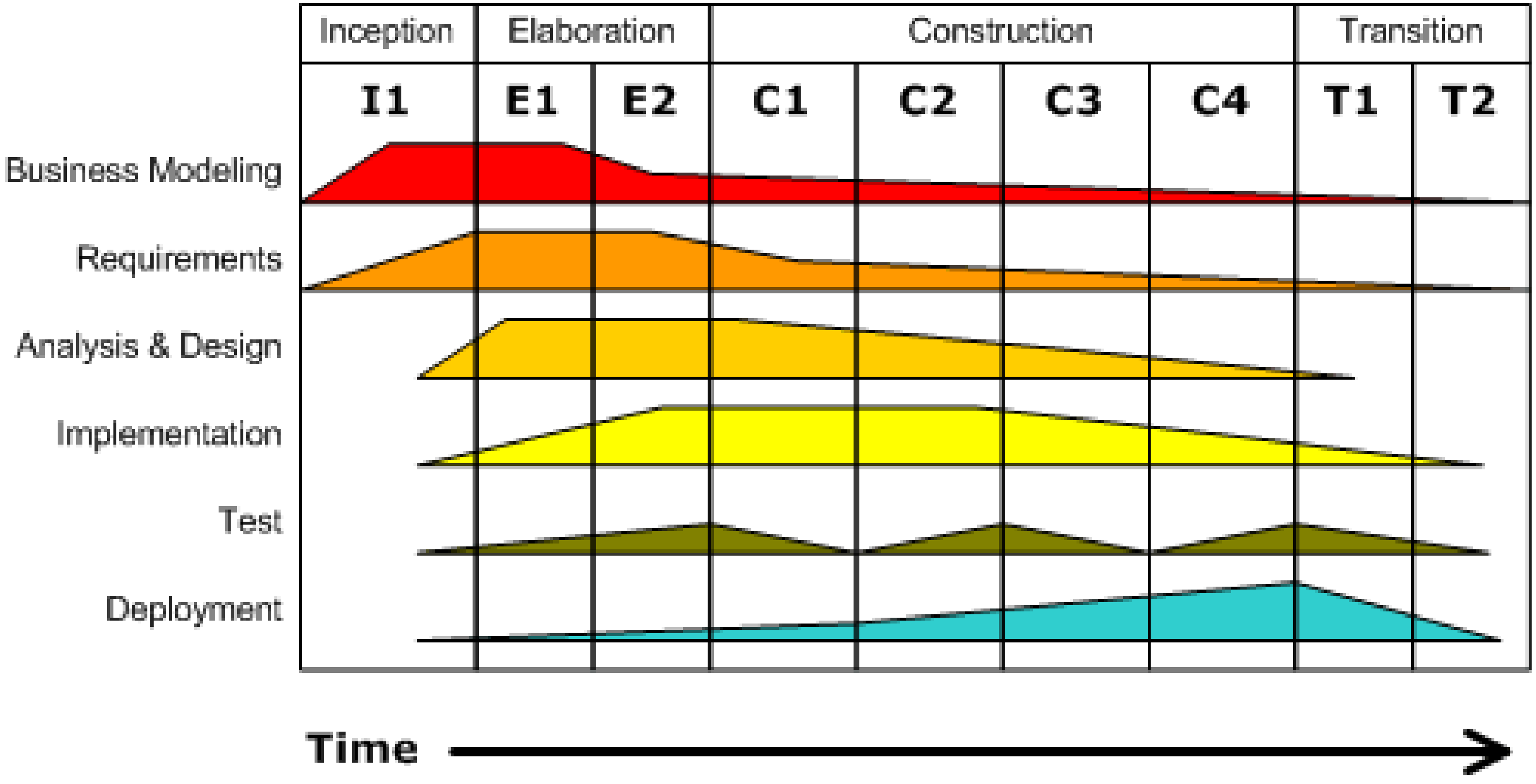
Deployment

- product releases
- software delivery

RUP

Iterative Development

Business value is delivered incrementally in time-boxed cross-discipline iterations.



RUP Best Practises

Develop iteratively

- not possible to
  - define the problem upfront
  - design the entire solution
- each iteration ends with a release

Manage requirements

- use case to capture functional requirements
- should be traceable

RUP Best Practises

Use components

Model visually

- different models to communicate
  - different aspects
  - with different stakeholders
  - UML

RUP Best Practises

Verify quality

- review
  - functional requirements
  - non-functional requirements
- should be part of the process

Control changes

- continuous integration

Scrum

Principles

- building working software that people can get their hands on quickly
- cross functional teams empowered to make decisions
- rapid iteration with continuous customer input

Scrum in a Nutshell

Framework

- iterative & incremental

Sprint

- development done in sprints (cycles)
- sprints are time-boxed
  - end after one month no matter what
- deliverables are static for each sprint
- progress reviewed at the end of each sprint
- goal: deliver working product

Inspect & Adapt

Intent

- *“development inevitably involves learning, innovation and surprises”*

Recipe

- take a short step
- inspect result & practise
- adapt if required
- repeat forever

Meet the Players

Product Owner

- objective is to maximize ROI
  - has profit & loss responsibility
- identify product features (product backlog)
- define feature prioritization
  - satisfy key stakeholders
  - alignment with other strategic objectives
  - risk identification
- actively interact with the team

Meet the Players

The Team (pigs)

- builds the product
- cross functional
  - analysis, development, testing, interface design, documentation, database design etc..
- self organizing
- small in size (roughly seven)
- can be feature specific

Meet the Players

Scrum Master (Mr. Scrum)

- acts as a Scrum educator and a facilitator
  - does whatever in his power to help the team and product owner be successful
- should not be same as the product owner
  - conflict of interest

Scrum in Action

Define sprint

- identify the items from "*release backlog*"
- assign weight to each item
  - product owner – based on value
  - team – based on effort
- lock commitment

Scrum in Action

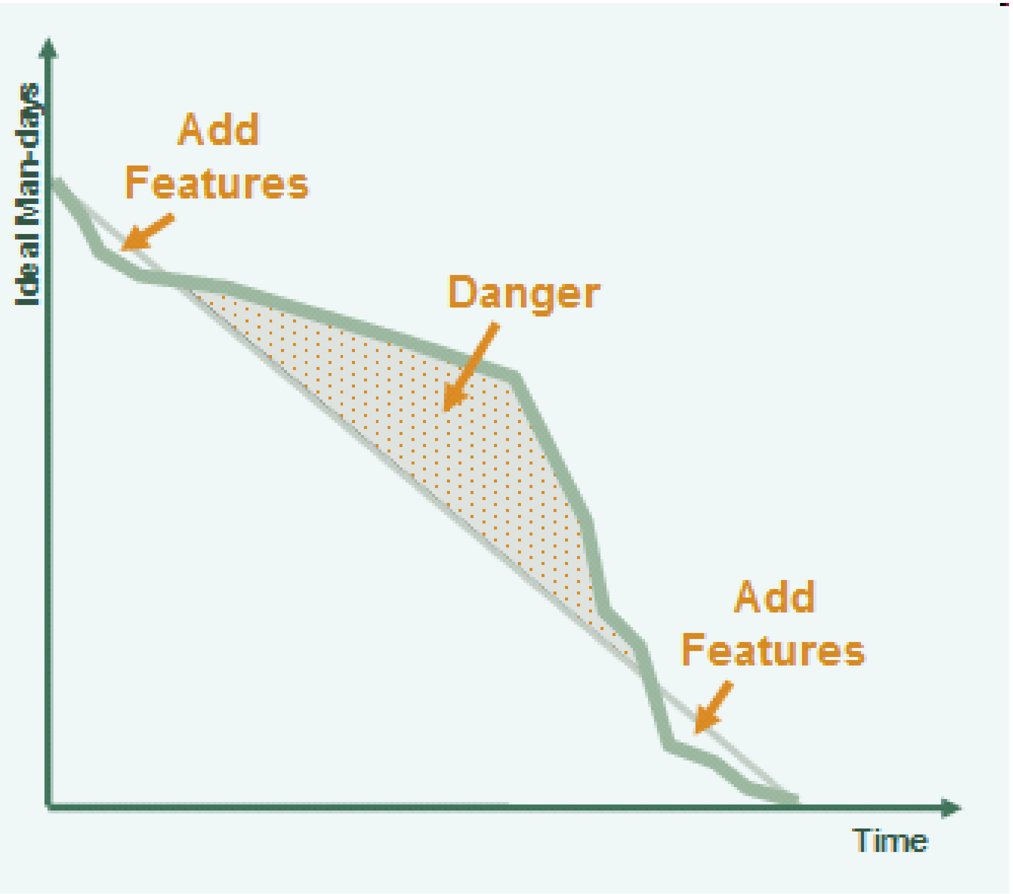
Daily scrum

- 15 mins every day
- Monitor progress by answering
  - What have you done since yesterday?
  - What are you planning to do by today?
  - Do you have any problems preventing you from accomplishing your goal?

Scrum in Action

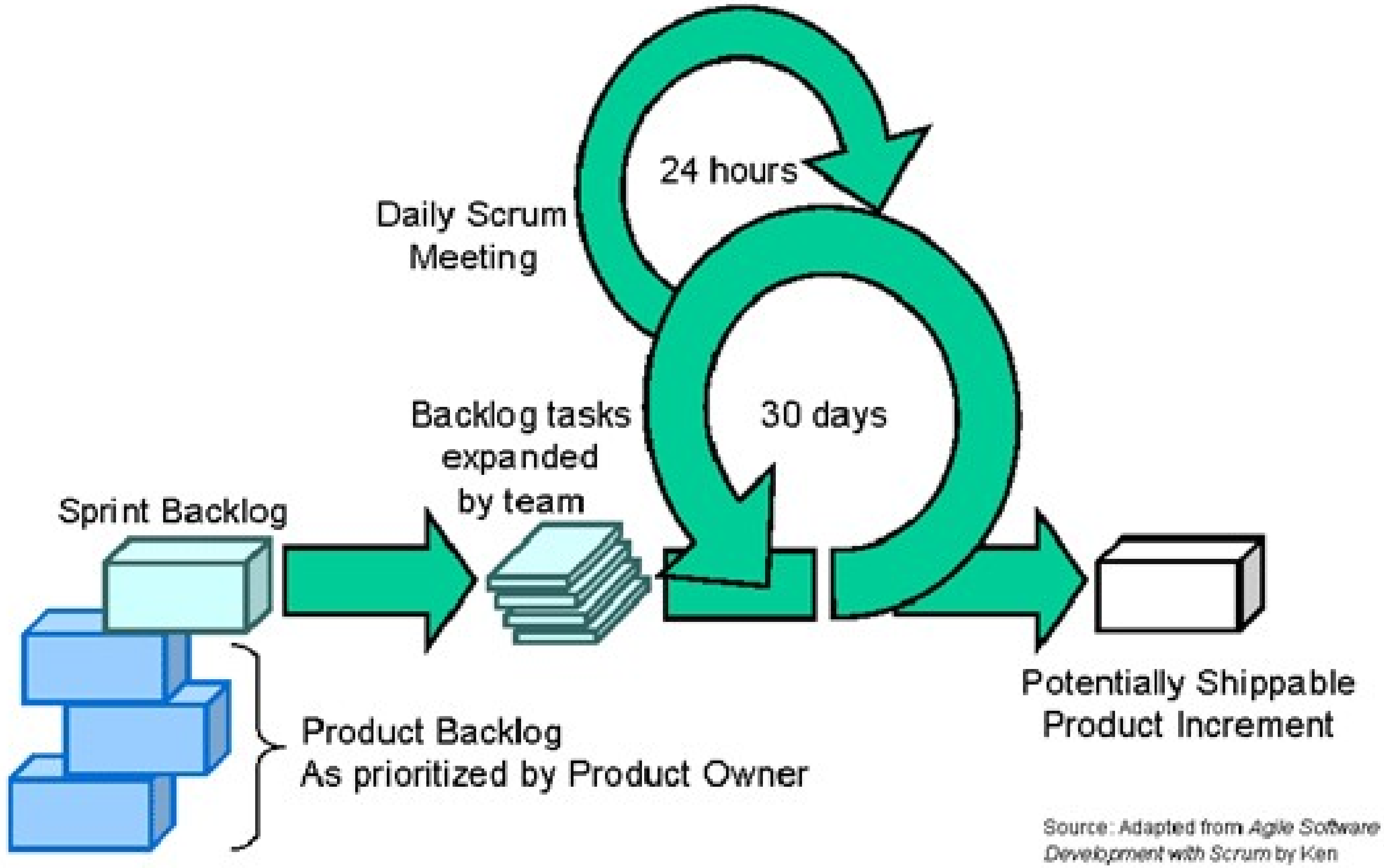
Monitoring progress

- burndown chart
  - reach zero effort by the last day of sprint



http://www.xqual.com/resources/images/scrum_burndown_chart.gif

Scrum in Action



Source: Adapted from *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle.

www.methodsandtools.com/archive/archive.php?id=18

Scrum in Action

Sprint Review Meeting

- review the work that was
  - completed
  - not completed
- Inspect & adapt

RUP or Agile

Similarities

- iterative
- division of work
- continuous testing

RUP or Agile

Differences

- Management style
- RUP is predictive, agile is adaptive
- customer interaction
- agile requires a seasoned team
- knowledge sharing