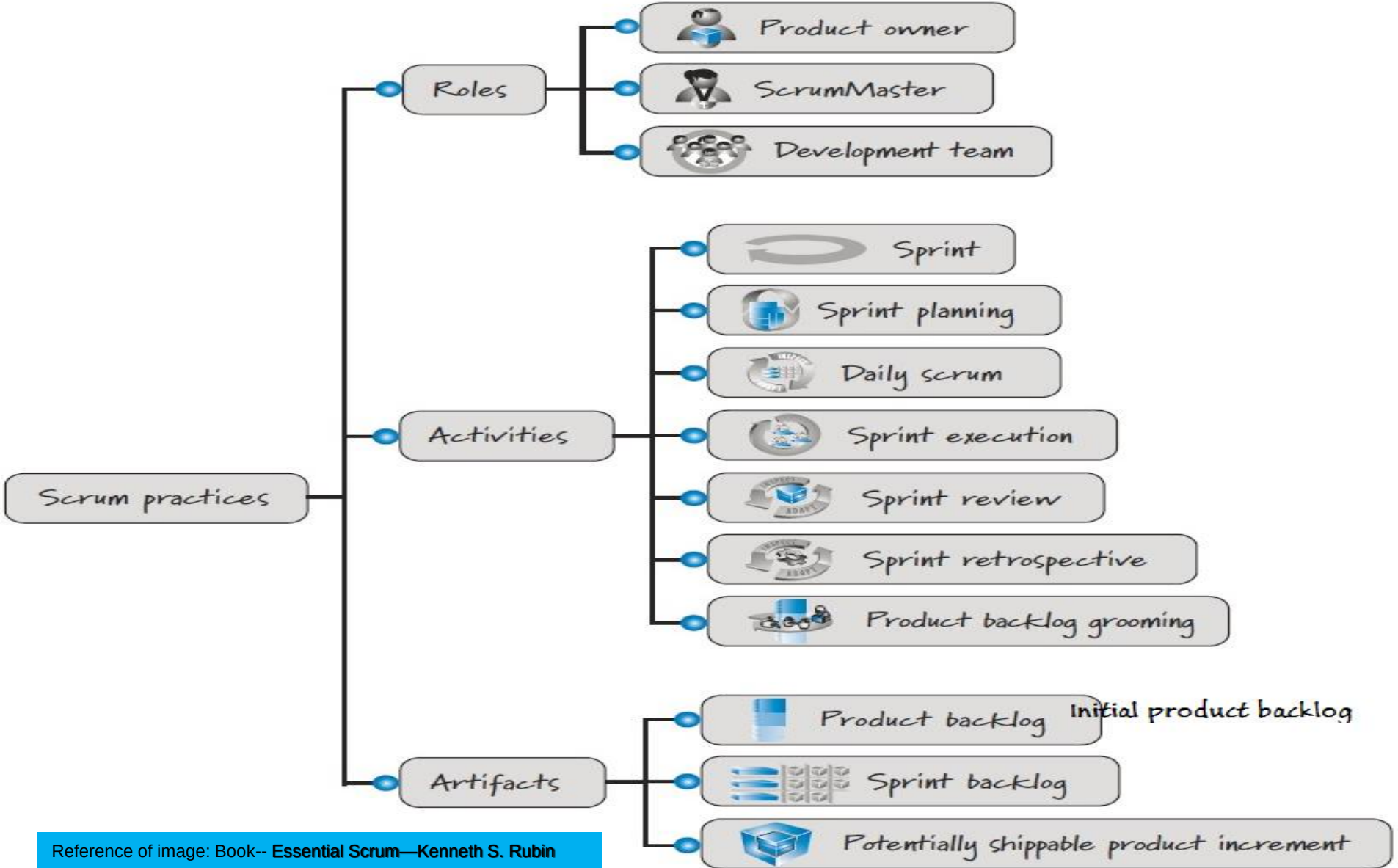
Lecture 7

Scrum framework, roles and multilevel planning

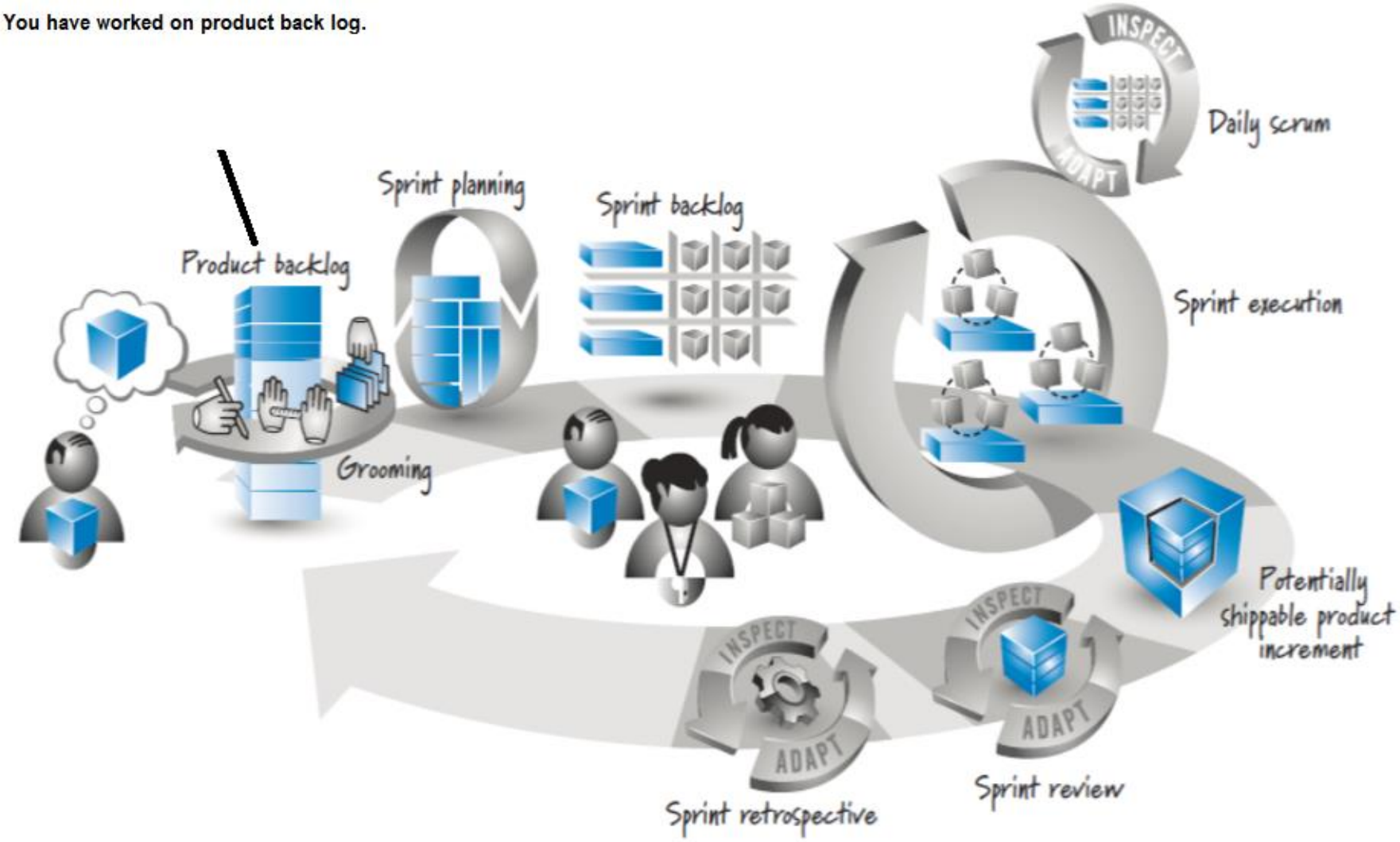
Modern approaches: Agile –Scrum practices



Reference of image: Book-- **Essential Scrum—Kenneth S. Rubin**

Modern approaches: Agile scrum-Frame work

You have worked on product back log.



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Modern approaches: Agile scrum--Roles

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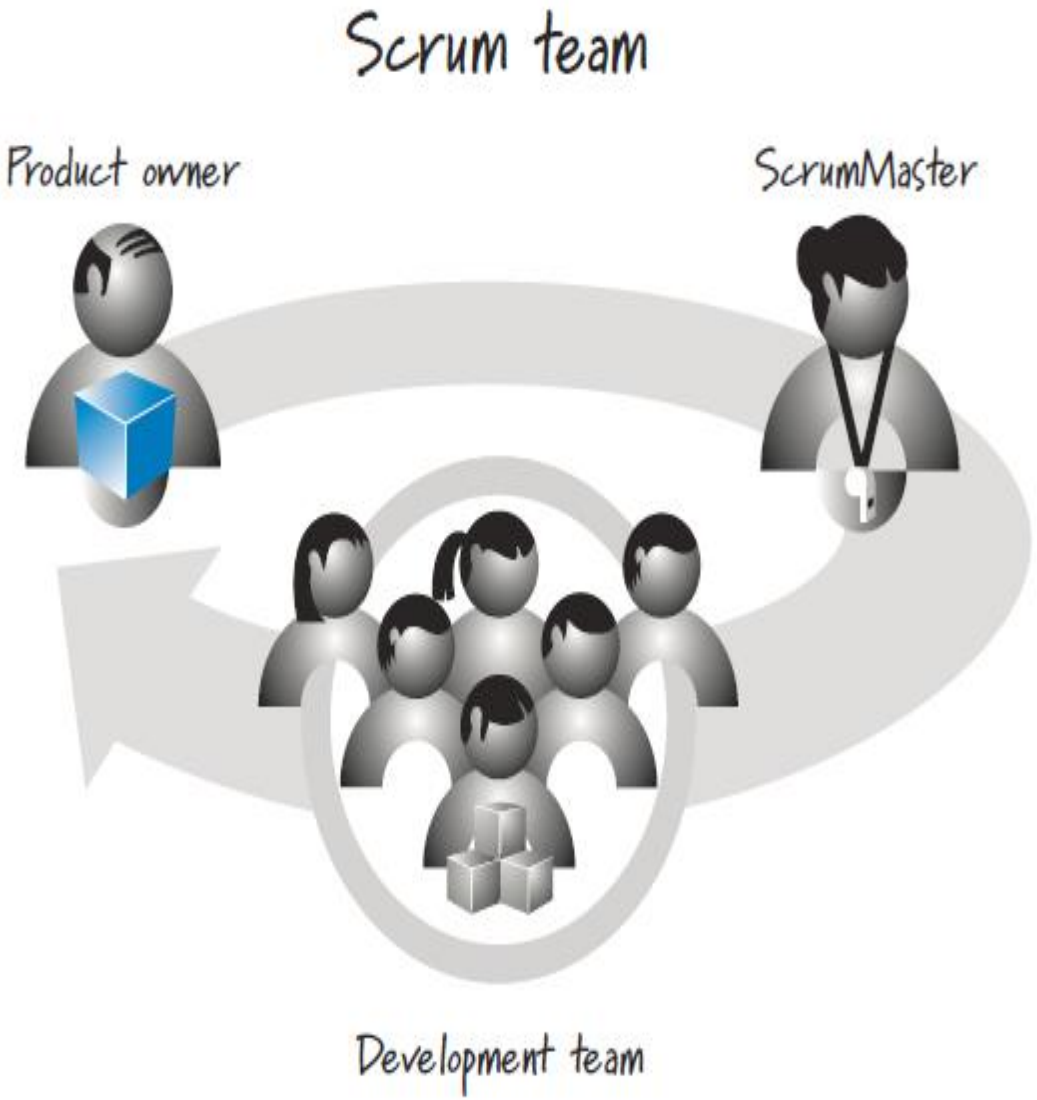
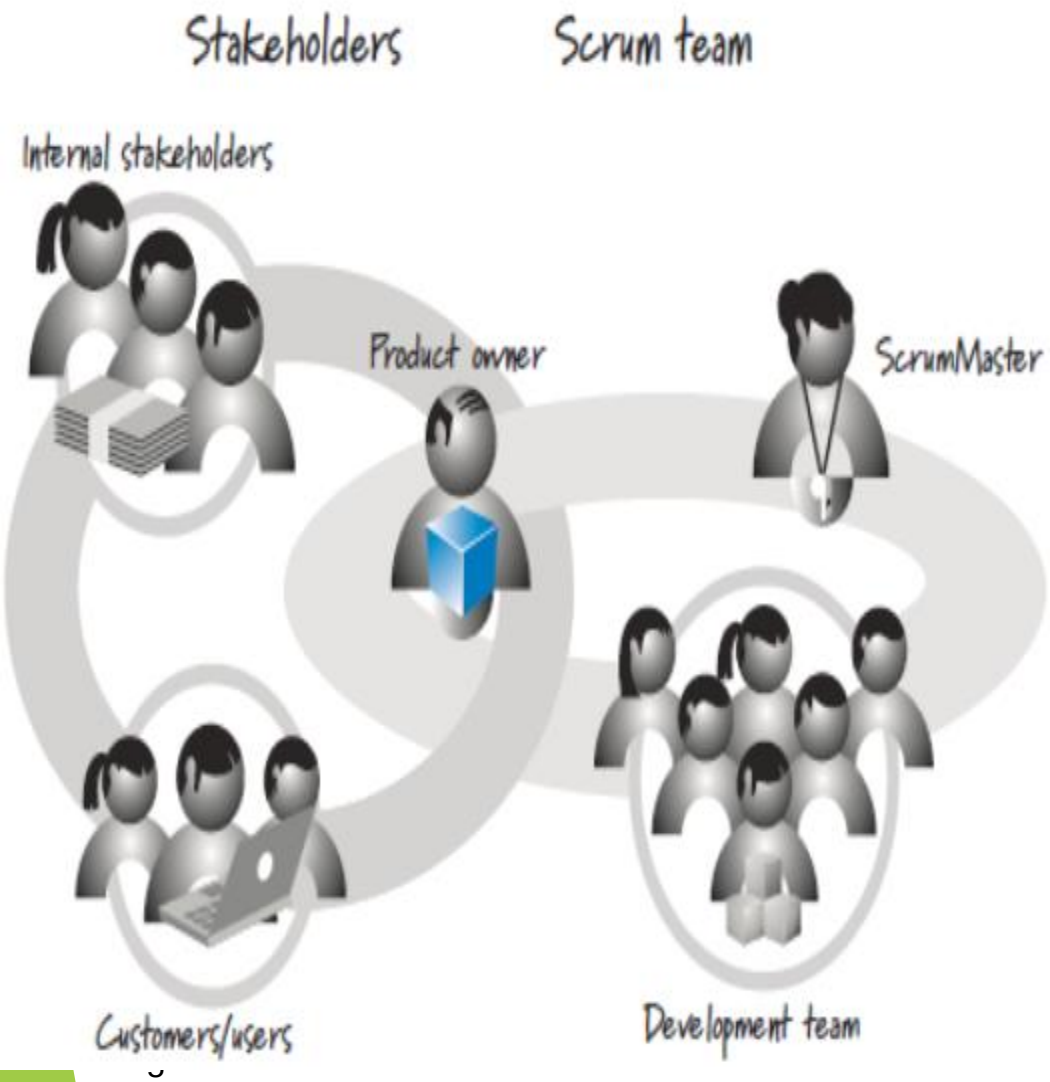


Product Owner:

- The product owner is the empowered central point of product leadership.
- It is one of the three collaborating roles that constitute every Scrum team.
- The others being the Scrum Master and the development team.

Modern approaches: Agile (scrum--Roles)

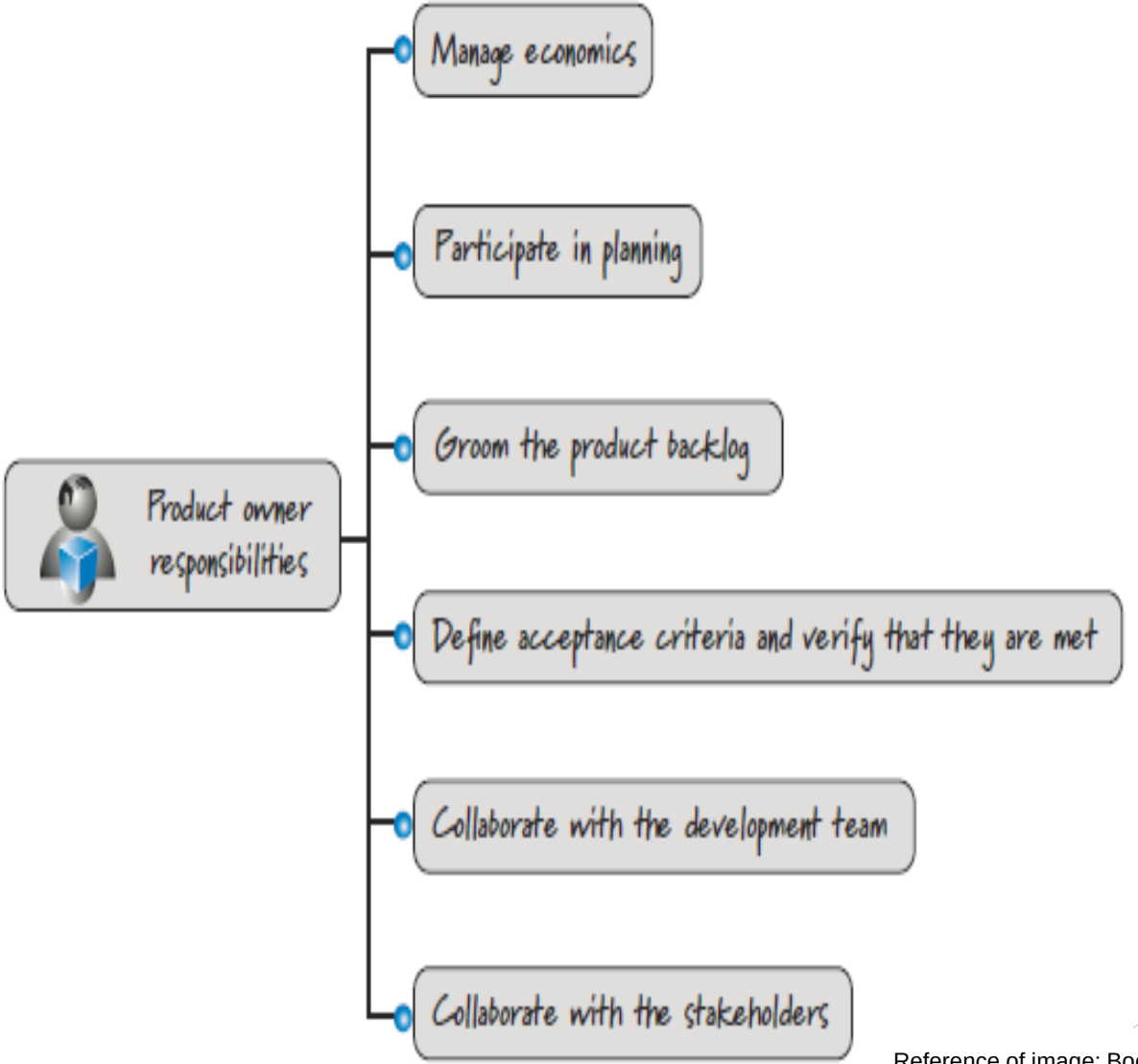


Product Owner (two directions):

- the product owner must understand the needs and priorities of the organizational stakeholders, the customers, and the users well enough to act as their voice.
- The product owner must communicate to the development team what to build and the order in which to build it.
- The product owner must also ensure that the criteria for accepting features are specified and the tests that verify those criteria are later run to determine whether the features are complete.

Reference of image: Book-- **Essential Scrum—Kenneth S. Rubin**

Modern approaches: Agile (scrum--Roles)



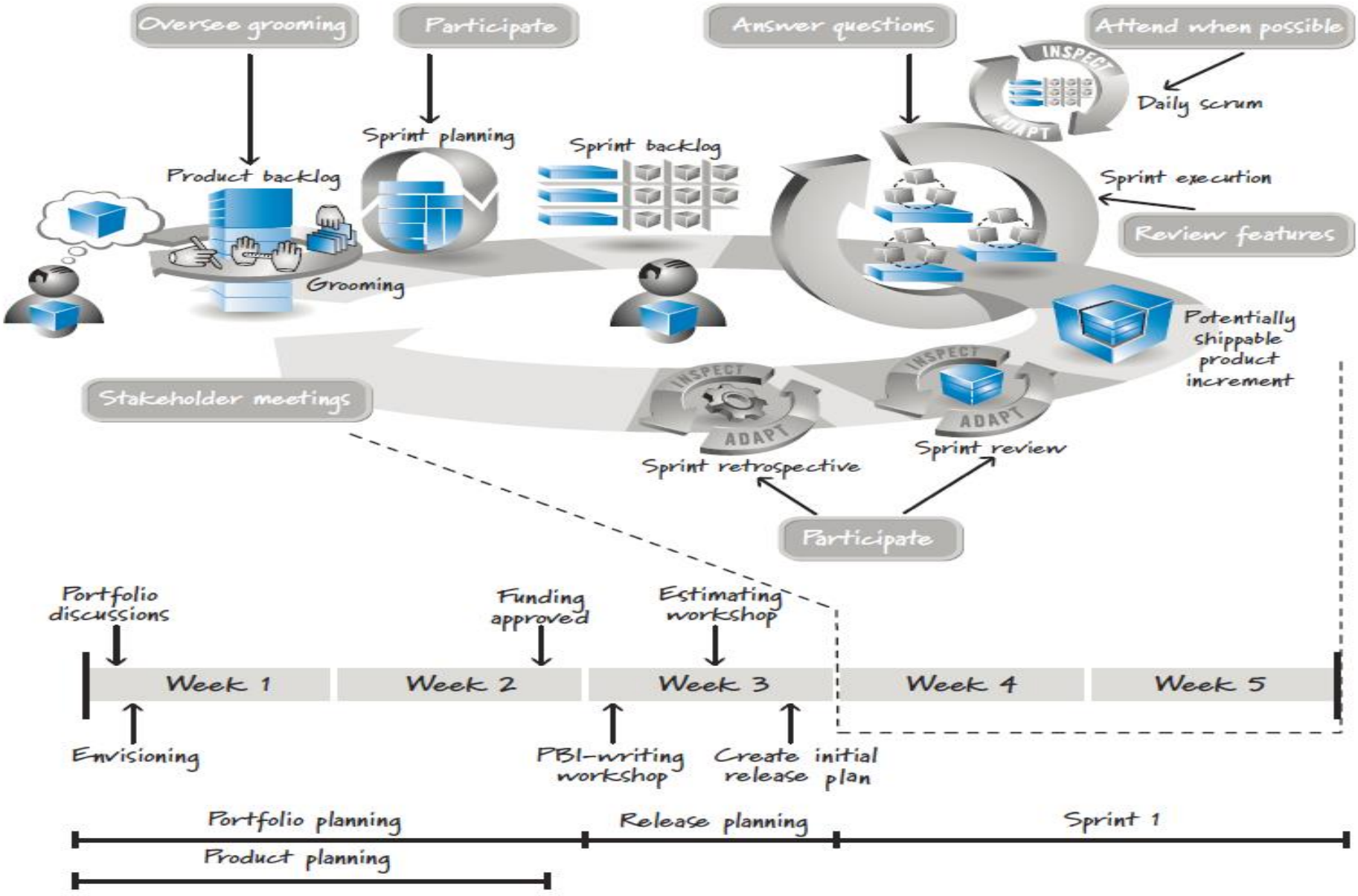
Reference of image: Book-- **Essential Scrum—Kenneth S. Rubin**

Product Owner (two directions):

- The product owner also manages sprint-level economics, ensuring that a good return on investment (ROI) is delivered from each sprint.
- At the release level the product owner continuously makes trade-offs in scope, date, budget, and quality as a stream of economically important information arrives dur-ing product development.
- The product owner is responsible for prioritizing the product backlog.
- When economic conditions change, the priorities in the product backlog will likely change as well.

Product owner's everyday life

Reference of image: Book-- **Essential Scrum—Kenneth S. Rubin**



Scrum—Roles: Scrum master

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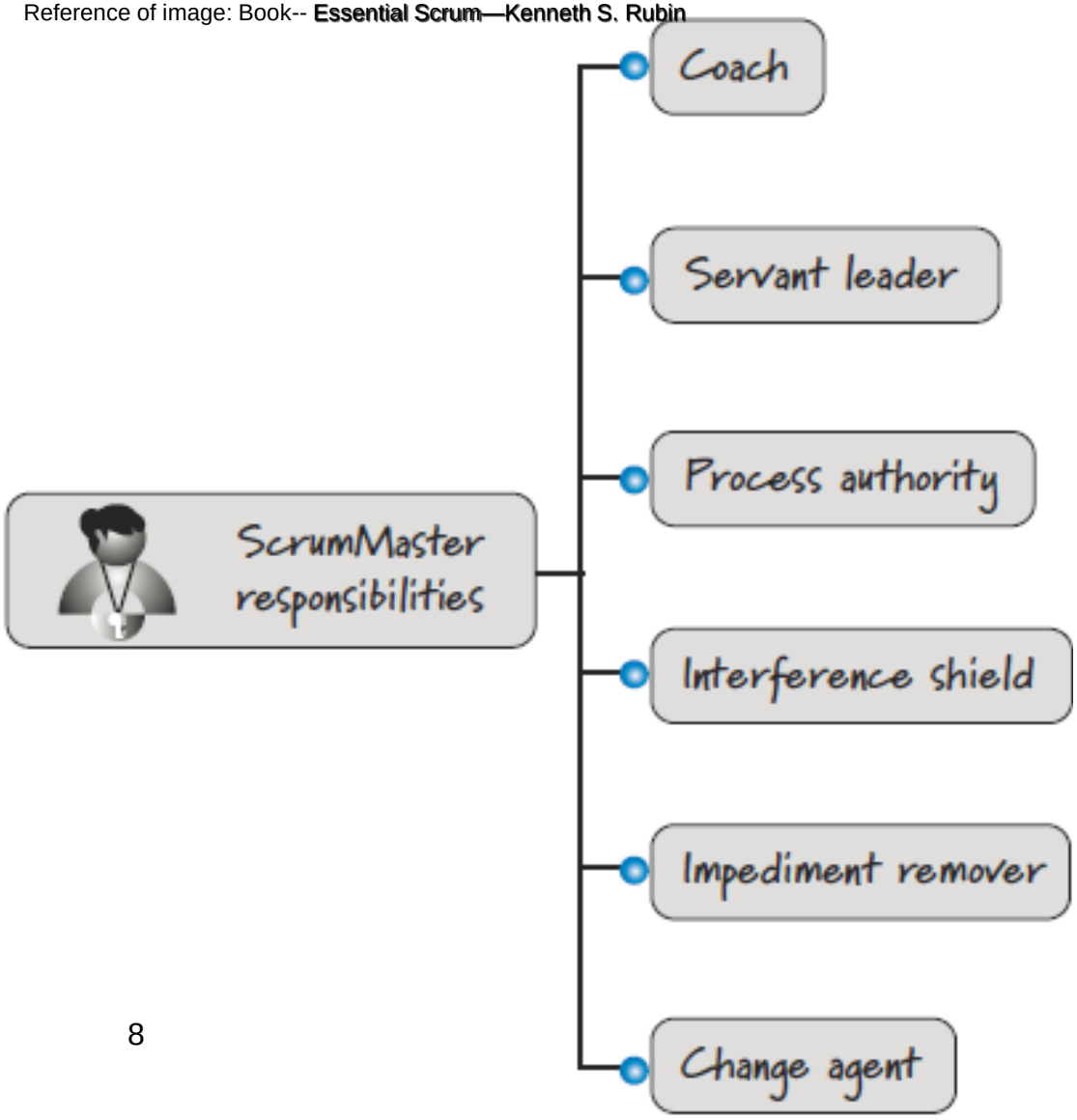
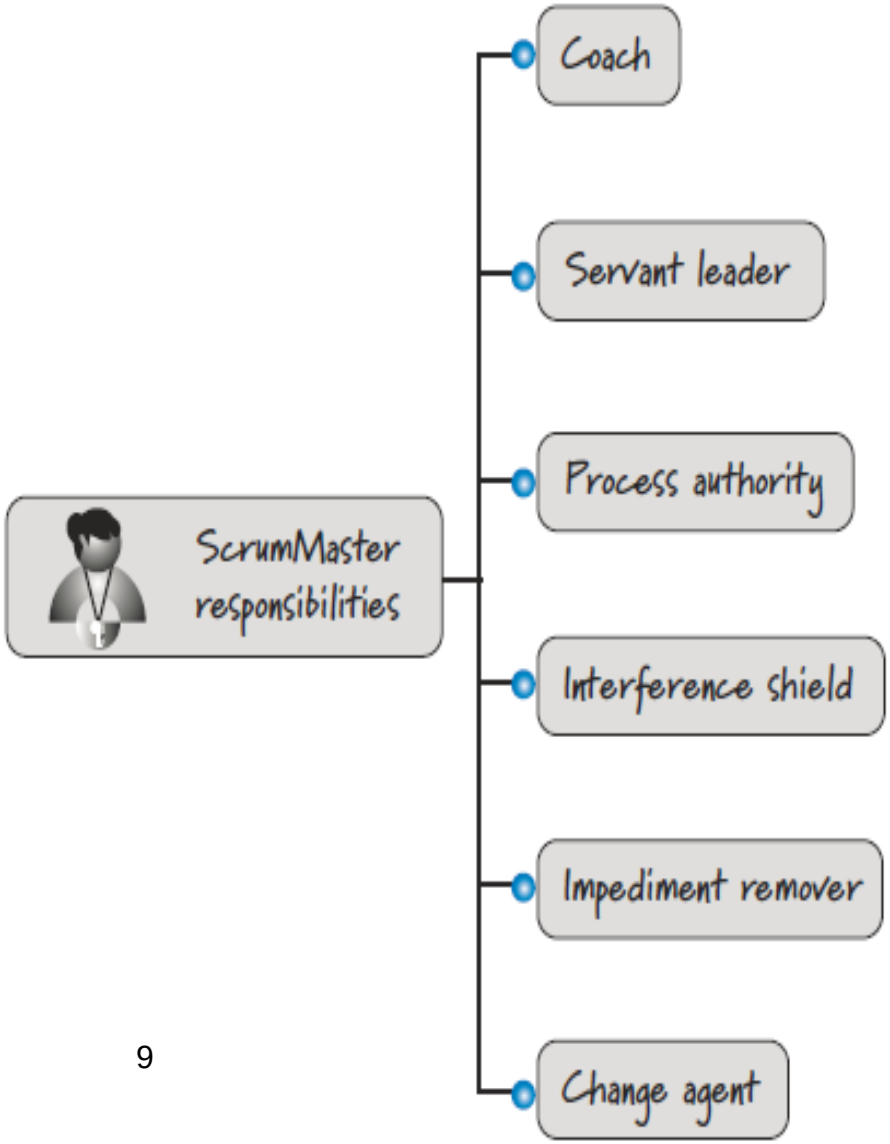


Scrum master:

- Coach: The Scrum Master observes how the team is using Scrum and does anything possible to help it get to the next level of performance.
- Servant Leader: The Scrum Master is first and foremost a servant to the Scrum team, ensuring that its highest-priority needs are being met
- Process authority: the Scrum-Master is empowered to ensure that the Scrum team enacts and adheres to the Scrum values, principles, and practices along with the Scrum team's specific approaches.



Scrum master:

- Interference Shield: The Scrum Master protects the development team from outside interference so that it can remain focused on delivering business value every sprint.
- Impediment Remover: The Scrum Master also takes responsibility for removing impediments that inhibit the team's productivity (when the team members themselves cannot reasonably remove them).
- Change agent: Scrum can be very disruptive to the status quo; the change that is required to be successful with Scrum can be difficult. The Scrum Master helps others understand the need for change,

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Scrum master Characteristics

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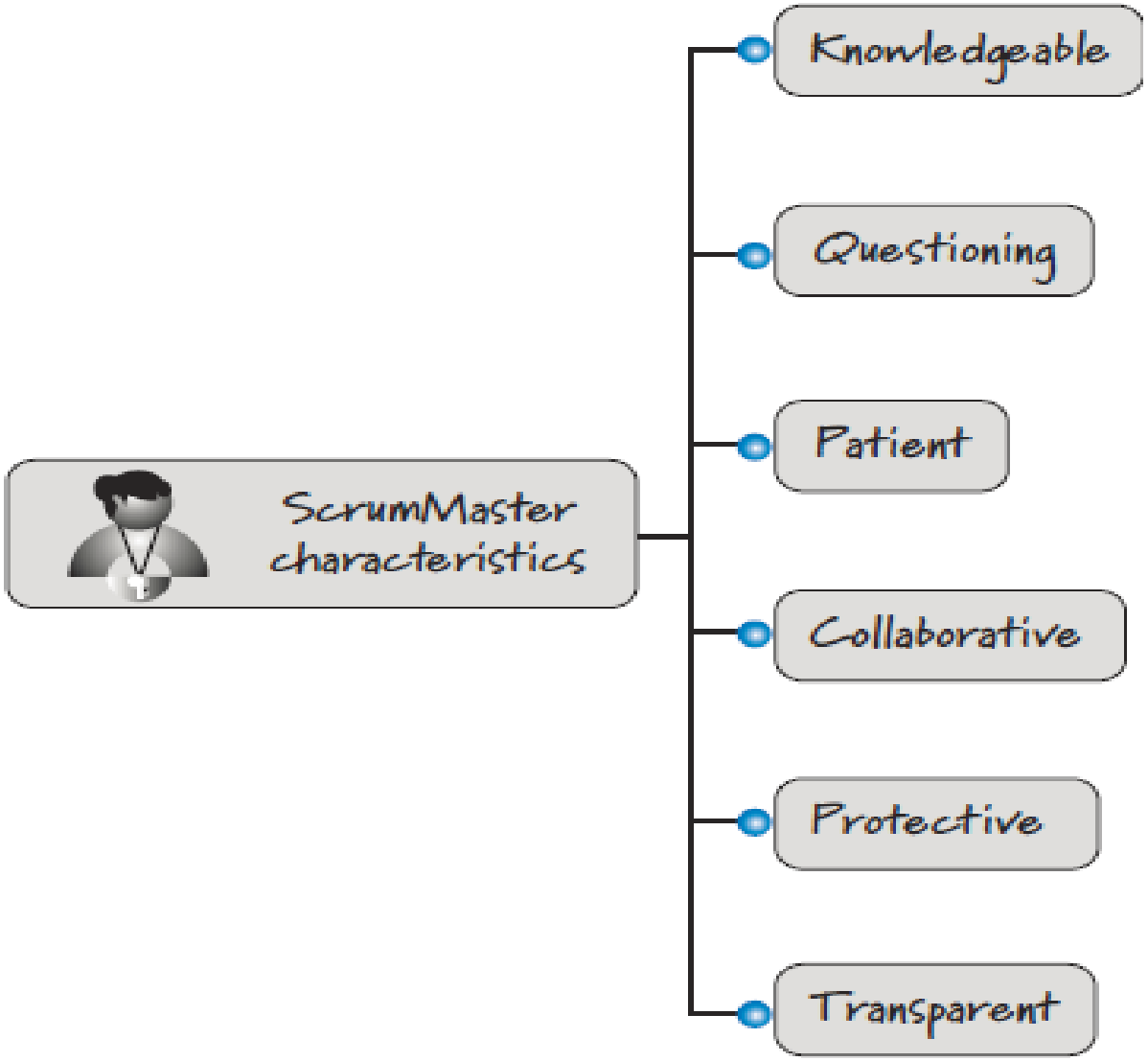

- Questioning: Scrum Masters use their coaching skills in conjunction with their process, technical, and business knowledge to ask great questions.
- Protective: The Scrum Master should be very protective of the team. The common analogy is that the Scrum Master acts like a sheepdog, guarding the flock from wolves that might try to attack.
- Transparent: When working with team members, there is no room for hidden agendas; what you see and hear from the Scrum Master must be what you get.

Multilevel planning in Scrum approaches

- *In agile scrum, planning is done in multiple levels throughout product development*

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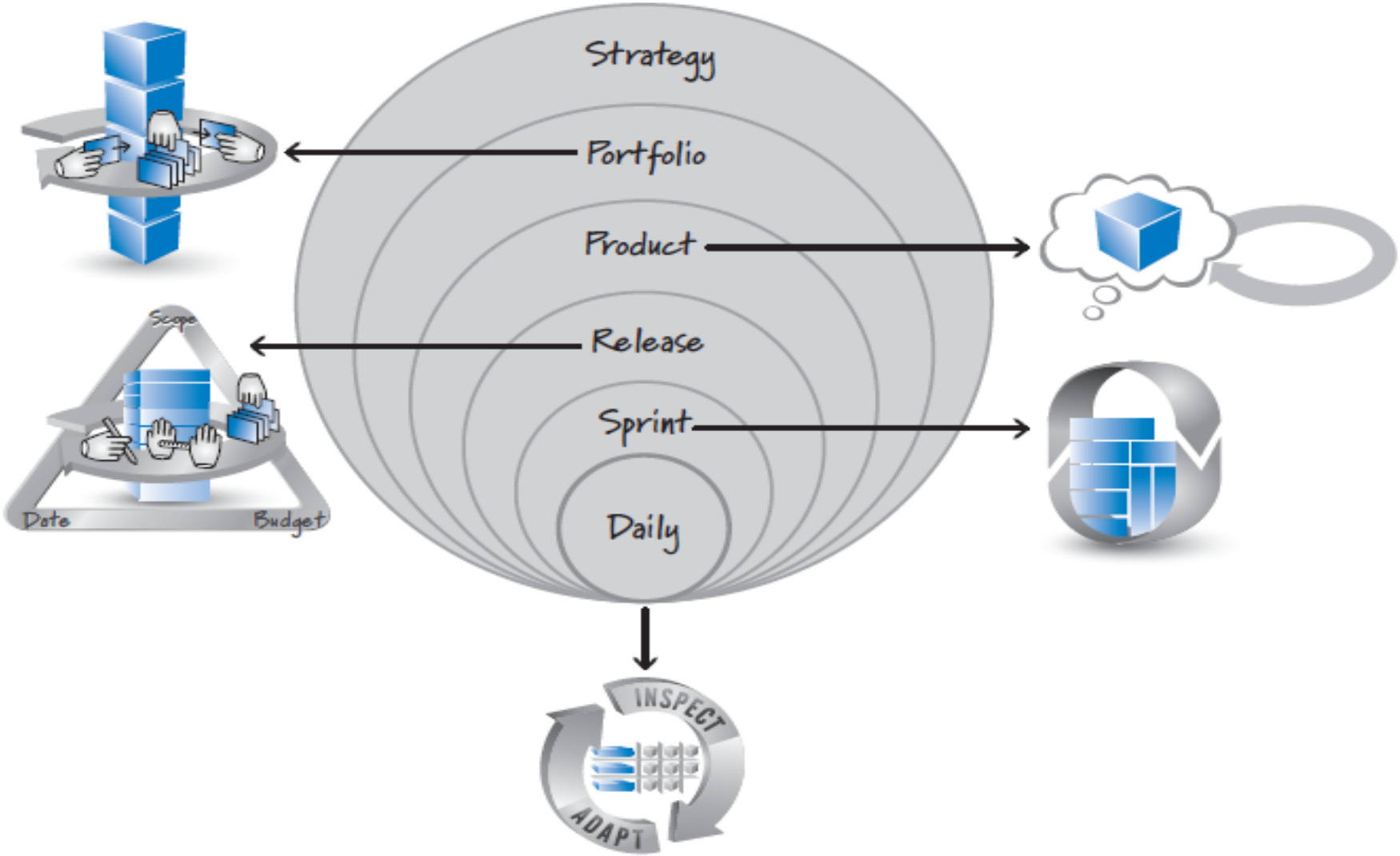
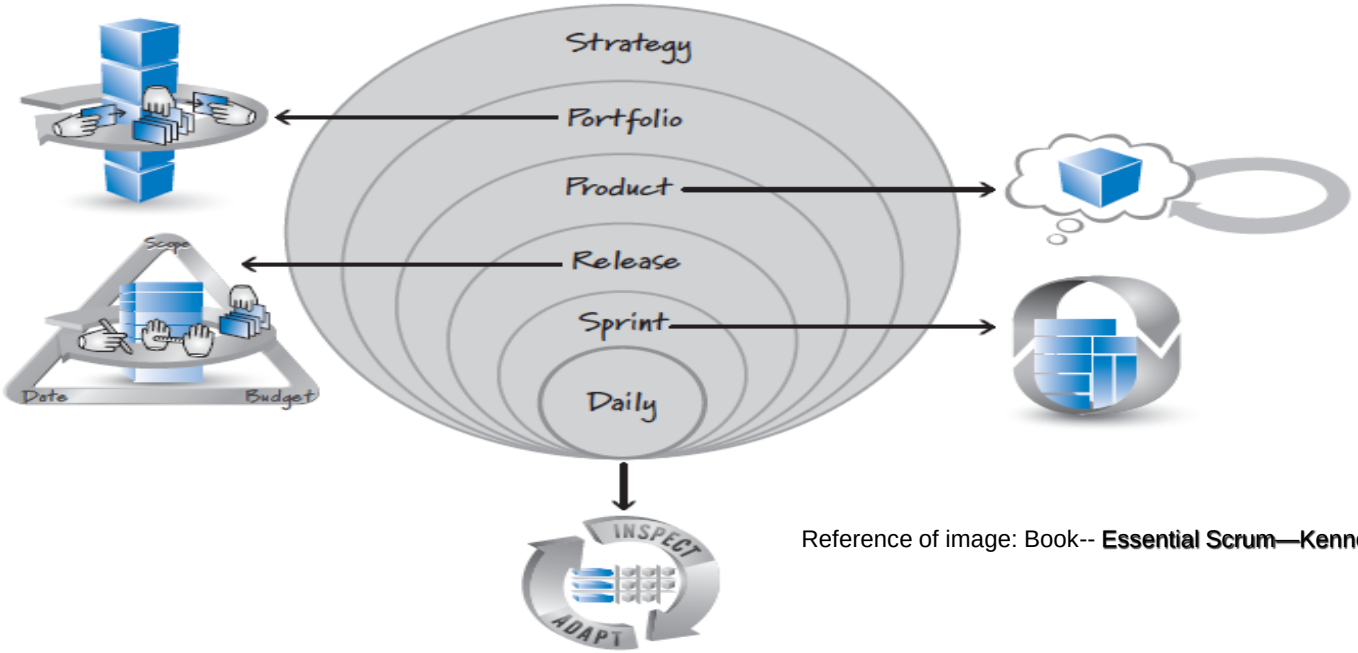


Multilevel planning in Scrum approaches

- *In agile scrum, planning is done in multiple levels throughout product development*
- *Strategic planning—*
  - This plan mainly focuses on company's information system strategy
  - Team generally analyze the existing system, business objectives and
  - Then strategic decisions are made which is at the architecture level or application level or both
  - At the technology architecture level: it can focus how the communication and network architecture will be set up for business process, which business process gets priority and their order
  - At the application architecture level: which applications will be automated , how the applications will be integrated with manual part and automatic part
  -



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Portfolio planning

- *Portfolio planning:*
- Most organizations want or need to produce more than one product at a time.
- These multiproduct organizations need a way to make economically sound choices regarding
  - how to manage their product portfolios. They also need their portfolio management
- **Portfolio planning** (or portfolio management) is an activity for determining which portfolio backlog items to work on, in which order, and for how long.
- A portfolio backlog item can be a product, a product increment (one release of a product),

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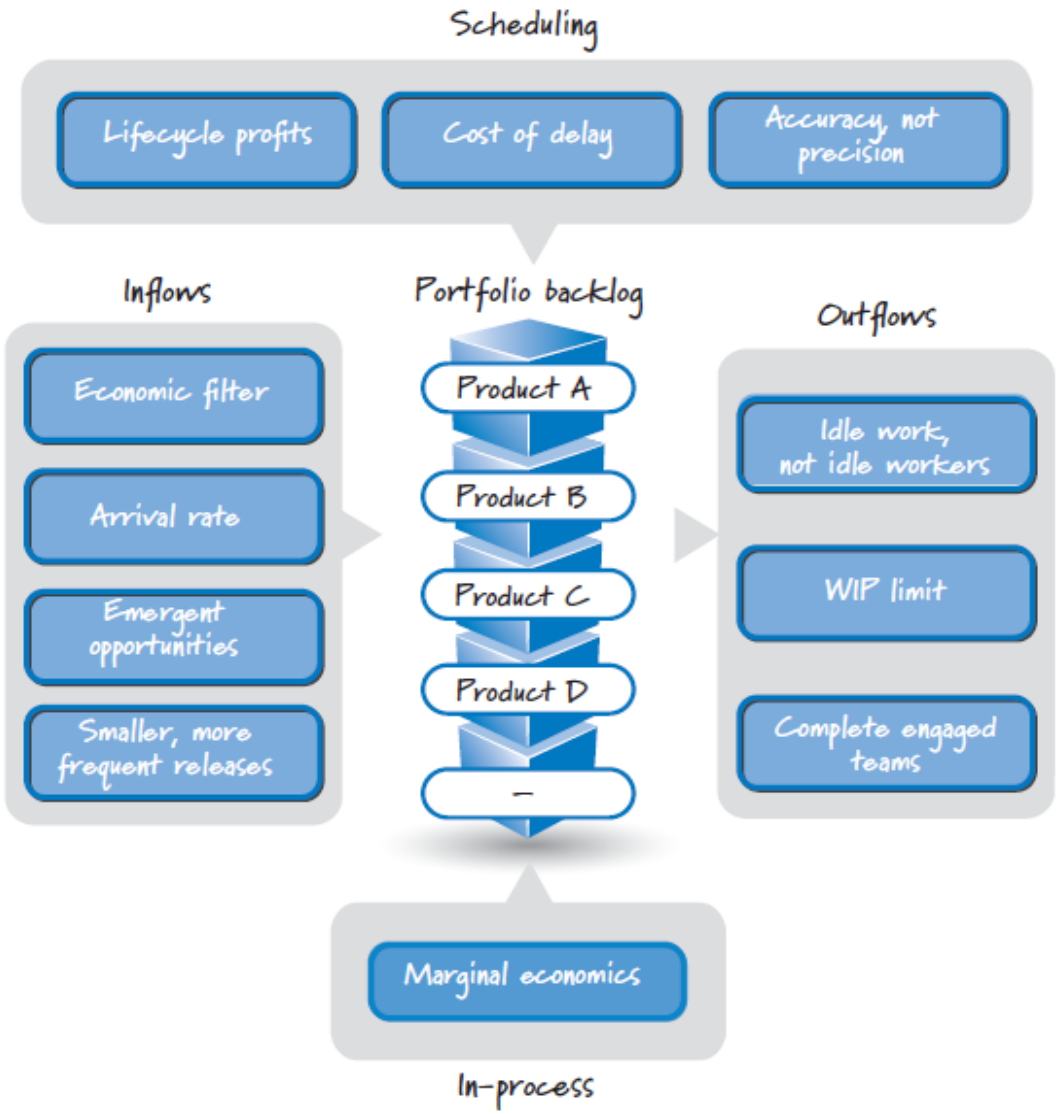

Portfolio planning

- *Portfolio planning:*

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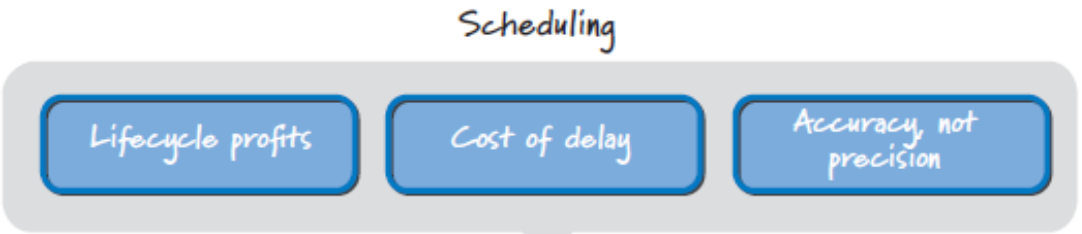
Scheduling Strategies

- Portfolio planning must allocate an organization's limited amount of resources to products in an economically sensible way
- three strategies:
  - Optimize for lifecycle profits.
  - Calculate the cost of delay.
  - Estimate for accuracy, not precision.



Optimize for Lifecycle Profits

- To optimize product ordering within the portfolio we need to decide which variable to measure so that we can determine whether our optimization efforts are working
- **For a specific product, lifecycle profits are the total profit potential for the product over its lifetime.**
- In the case of portfolio planning, we are interested in optimizing the lifecycle profits of the entire portfolio rather than a single product
- **So the goal of the strategy of optimizing for lifecycle profits is to find the sequence of portfolio backlog items that provides the greatest lifecycle profits across the entire portfolio cost.**

Cost of Delay

- **When we sequence items in the portfolio backlog, we must necessarily work on some products before we work on others.**
- **Those that we don't work on immediately have a delayed start and therefore a delayed delivery date, for which there exists a quantifiable cost**

Estimate accuracy

- **When estimating the size of portfolio backlog items, we are looking for accuracy, not precision**
- **because of the very limited data we have at the time when a first estimate is required.**

Portfolio planning

- *Inflow strategies*

Apply economic filter:

- each organization needs to define an economic filter that best matches its particular funding policies,
- a good economic filter should quickly indicate approval of any opportunity that delivers overwhelming value relative to its cost;

Arrival rate:

- we don't want to overload the portfolio backlog by inserting too many products into it at the same time

Quickly Embrace Emergent Opportunity

- Portfolio planning needs to embrace emergent opportunities.

Plan for Smaller, More Frequent Releases

- Large products require a lot of resources for a considerable amount of time.
- Those resources are now unavailable to many other smaller products that are caught in the queue behind the large product.
- And, while caught in the queue, each accrues a cost for being delayed.
- When we add up the delay costs of all of those small products, it becomes clear that large products cause significant economic damage to lifecycle profits.
- Therefore, smaller and more frequent releases are compelling

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Portfolio planning

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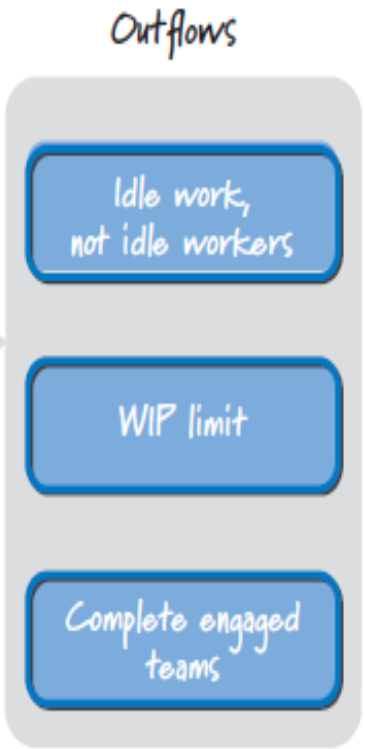
- *Outflow strategies*



Focus on Idle Work, Not Idle Workers

- focus on idle work, not idle workers
- idle work is far more wasteful and economically damaging than idle workers
- A common, but misguided, approach to releasing products for development is
  1. Pull the top product from the portfolio backlog and assign people to work on it.
  2. Are all the people 100% utilized (working at 100% capacity)? If not, repeat step 1.

Establish a Work in process (WIP) Limit

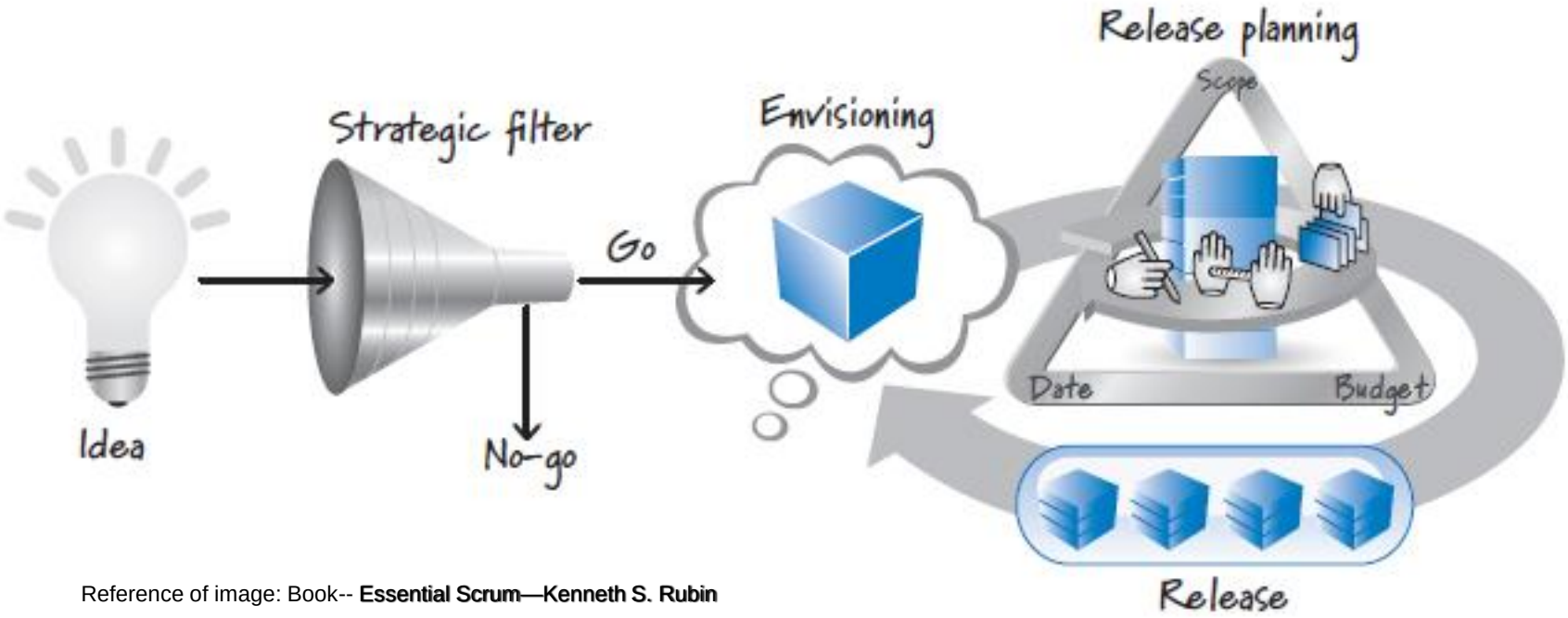
- Knowing how many Scrum teams and knowing what kinds of products they are capable of working on
- will guide us as to how many and which types of product development efforts we should pursue simultaneously

Wait for a Complete Team

- The final outflow strategy is to wait for a complete Scrum team to be available before starting to work on a product.

Multilevel planning in Scrum approaches

- *Product planning*
- This planning begins with an idea for a product that someone or some team has generated (a process often referred to as ideation).
- This idea is first passed through the organization's **strategic filter**
- to determine if it is consistent with the organization's strategic direction and therefore worthy of deeper investigation and investment.



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Product planning

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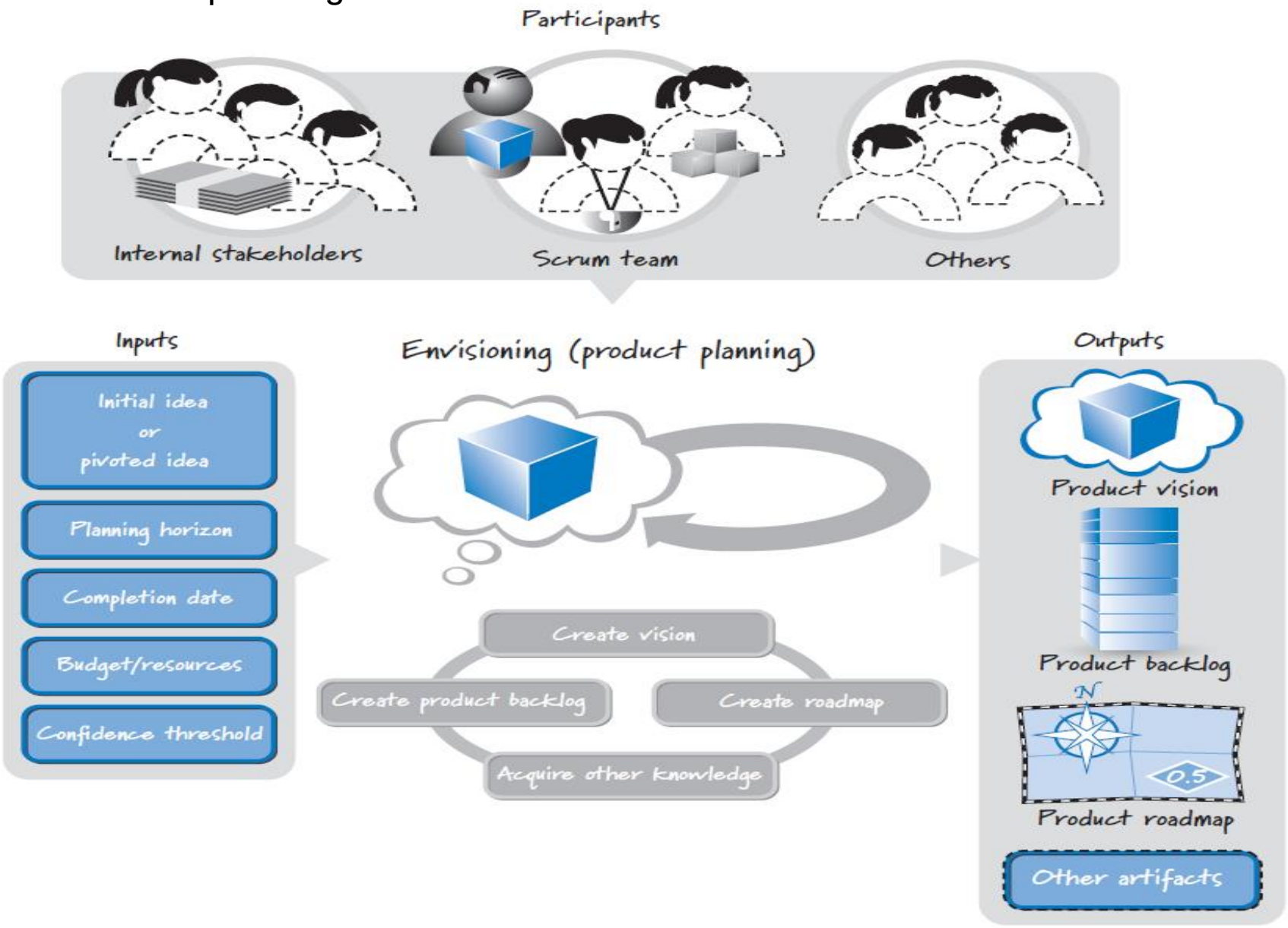


Product planning

- Main outputs:
- Product vision,
- product backlog,
- and product roadmap
- **Review of Typical vision statement : This considers following:**
  - ***For***. [target customer]
  - ***Who***. [statement of the need or opportunity]
  - ***The***. [product name]
  - ***Is***. [product category]
  - ***That***. [major capabilities, key benefit, compelling reason to buy or use]
  - ***Customer will submit order online and pay online. Customer will get attractive loyalty reward and promotional benefit, managers will be able to determine the promotion policies easily***
  - ***Unlike***. [primary competitive alternative, current system, current business process] Manual process
  - ***Our product***. [statement of primary differentiation and advantages of new product]
  - Automated business processes and report generation, faster and secure, less staff cost that could uplift the ROI
  - **vision statement example:**

For *scientists* ***who*** *need to request containers of chemicals,* ***the*** *Chemical Tracking System* ***is*** *an information system* ***that*** *will provide a single point of access to the chemical stockroom and to vendors. The system will store the location of every chemical container within the company, the quantity of material remaining in it, and the complete history of each container's locations and usage. This system will save the company 25 percent on chemical costs in the first year of use by allowing the company to fully exploit chemicals that are already available within the company, dispose of fewer partially used or expired containers, and use a standard chemical purchasing process.* ***Unlike*** *the current manual ordering processes,* ***our product*** *will generate all reports required to comply with federal and state government regulations that require the reporting of chemical usage, storage, and disposal.*

Product planning

- High level Product backlog:
- Example: Review Everything, Inc., announced today the successful launch of its new SmartReview4You (SR4U) service

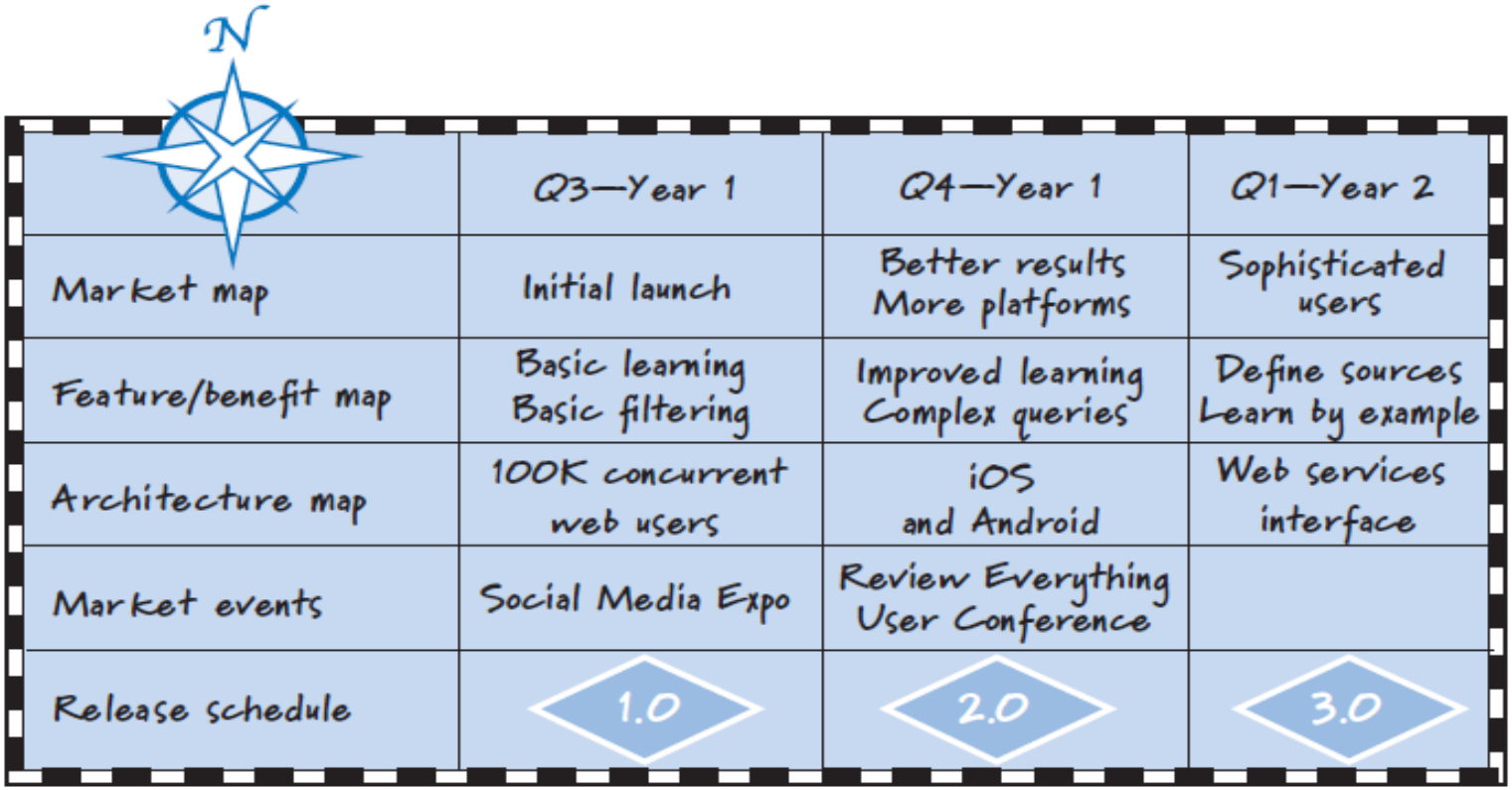
- As a typical user I want to teach SR4U what types of reviews to discard so that SR4U will know what characteristics to use when discarding reviews on my behalf.
- As a typical user I want a simple, Google-like interface for requesting a review search so that I don't have to spend much time describing what I want.
- As a typical user I want to have SR4U monitor the Internet for new reviews on products or services of interest and automatically filter and report them to me so that I don't have to keep asking SR4U to do it for me.
- As a sophisticated user I want to tell SR4U which sources to use when searching on my behalf so that I don't get back reviews from sites I don't like or trust.
- As a product vendor I want to be able to show an SR4U-branded review summary for my product on my website so that people can immediately see what the marketplace thinks of my product as determined by a trusted source like SR4U.

Product Roadmap:

- Once we have the initial vision and a high-level product backlog, we can define our initial product roadmap, a series of releases for achieving some or all of our product vision. When using Scrum, we always develop incrementally.
- It is considered that each release on a small set of **minimum releasable features** (**MRFs**) around which the stakeholder community shares a strong group consensus.
- This is also referred to a set of features as the **minimum viable product** (**MVP**) or **minimum marketable features** (**MMFs**).
- customers would not perceive enough value if we delivered any fewer
- Each release on the roadmap should have a clearly defined release goal that communicates the purpose and desired outcome of the release.
- A release goal is created by considering many factors, including
  - 1. Market map (the target customers, business value) 2. high-level architectural issues, 3. significant marketplace events, 4. Main feature/benefit map.

Product planning

- Product Roadmap:
- Market map:
  - When creating a product roadmap, we should consider the customers and how they might be segmented into different markets.
  - The roadmap should express how and when to address these different customer segments.
- Architecture map: we also should consider high-level architectural or technology issues.
- Market event: we also need to allow for any significant market events that could influence the timing of our feature deliveries



Readings and references

Thanks to Sparx Systems to allow us to use EA for free.

Essential Scrum—Kenneth S. Rubin

The agile age-Managing projects effectively using agile scrum---Brian vanderjack

R. S. Pressman and D. Lowe: *Web Engineering, A Practitioner's Approach,* McGraw-Hill, 2009.