SCRUM ALLIANCE®
PATH TO CSP℠
Learning Objectives Examples

January 2022
The examples are added as an appendix to the corresponding Learning Objective documents.

A note about the examples used in the following Learning Objectives:

The following collection of examples is provided to clarify the intent of the Path to CSP Learning Objectives. When developing content, Guides can use the provided examples, their own examples that still meet the objective, or a mix of both. The examples provided do not imply that they are the only options, nor that they constitute an exhaustive list.

Scrum Foundations®

General Considerations

Wherever possible, references are to the Scrum Guide 2020 edition. The Bloom's taxonomy staircase will help inform the selection of appropriate instructional strategies.

Entirety If Scrum events are just ceremonies, adaptations of product and process might not happen. Explain why realizing Scrum's benefits require that it is practiced with discipline and dedication.

Scrum Theory

1.1 **Example:** "Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems". *[Scrum Guide 2020]*.

1.2 **Example:** "Commitment, Focus, Openness, Respect, and Courage" *[Scrum Guide 2020]*.

1.3 **Example:** "Empiricism asserts that knowledge comes from experience and making decisions based on what is observed." or "Empiricism, often used by natural scientists, says that "knowledge is based on experience" and that "knowledge is tentative and probabilistic, subject to continued revision and falsification." "Empirical research, including experiments and validated measurement tools, guides the scientific method." *[Wikipedia]*

1.4 **Example:** "...the empirical Scrum pillars of transparency, inspection, and adaptation" *[Scrum Guide 2020]*.

1.5 **Example:** "cohesive unit of professionals", "focused on one objective at a time", "all skills necessary to create value", "internally decide who does what, when, and how", "nimble", "productive", "empowered", "responsible", "accountable for creating a valuable, useful Increment".

Benefits could also be risk reduction, faster feedback cycles, better stakeholder engagement, learning by doing, early value creation.

1.6 Example: "Scrum exists only in its entirety and functions well as a container".

Other possible disadvantages of a partial Scrum implementation could cause lack of learning, reduced communication, worse results. More or less the negation of 1.5's benefits.

1.7 Example: Reference: agilemanifesto.org. One way to approach this is to map the values and principles of the Manifesto to Scrum values, theory, accountabilities, events, and artifacts. A shorter description is sufficient, for instance: "Scrum fully implements all of the values and principles of the Manifesto for Agile Software Development".

The Scrum Team

2.1 Example: State the core accountabilities and their contribution to the Sprint increment.

2.2 Examples of possible benefits are: "has all the skills necessary to create a product Increment, chooses how best to accomplish their work rather than being directed by others outside the team."

Scrum Events and Activities

3.1 Example: Benefits of using a timebox could include better focus, early completion, clear goal-setting.

3.2 Example: "Sprints are the heartbeat of Scrum, where ideas are turned into value.";"They [Sprints] are fixed length events of one month or less to create consistency".

3.3 Example: Take into consideration: frequency of events, stakeholder availability, complexity of product and technology, maturity of the team, inspection and adaption.

3.4 Example: See the events section of the *Scrum Guide*; the definition could be provided as a table, prepared by participants, read from the *Scrum Guide*, and/or validated with a questionnaire.

3.5 Example: "Product Backlog refinement is the act of breaking down and further defining Product Backlog items into smaller more precise items. This is an ongoing activity to add details, such as a description, order, and size. Attributes often vary with the domain of work."

3.6 Example: "[Refinement] increases understanding and confidence".

Scrum Artifacts and Commitments

4.1 Examples of possible purpose might be: See the *Scrum Artifacts* section of the *Scrum Guide*; the definition could be provided as a table, prepared by participants, read from the *Scrum Guide*, and/or validated with a questionnaire.

4.2 Example: "Helping establish empirical product planning for a complex environment"; "The purpose of the Sprint Review is to inspect the outcome of the Sprint and determine future adaptations.[...] Based on this information, attendees collaborate on what to do next. The Product Backlog may also be adjusted to meet new opportunities".

4.3 Example: See Example for 3.5; description, order, size.

4.4 Example: See sections about Sprint Backlog and Daily Scrum.

4.5 Example: "An Increment is a concrete stepping stone toward the Product Goal. Each Increment is additive to all prior Increments and thoroughly verified, ensuring that all Increments work together. In order to provide value, the Increment must be usable. Multiple Increments may be created within a Sprint". Essentially, the participants need to understand that each Increment needs to fulfil the Definition of Done.

4.6 Example: See artifacts section of the *Scrum Guide*.

4.7 **Example:** "The Sprint Goal is the single objective for the Sprint. [...] The Sprint Goal also creates coherence and focus, encouraging the Scrum Team to work together rather than on separate initiatives."

4.8 **Example:** Not directly mentioned in *Scrum Guide*, possible reasons could be Retrospective findings or new organizational standards; possible opportunities to adjust the Definition of Done could be during any Scrum Event.

4.9 **Example:** Comply to a shared standard, ensure they can integrate their Increments. Source: "If Scrum Teams become too large, they should consider reorganizing into multiple cohesive Scrum Teams, each focused on the same product. Therefore, they should share the same Product Goal, Product Backlog, and Product Owner".

CSM®

General Considerations

The following quotes from the *Scrum Guide* illustrate the respective Learning Objective. Guides should choose an appropriate delivery method and validation according to the Learning Objective verb.

Scrum

1.1 **Examples for the Scrum Team:** "The Scrum Team is responsible for all product-related activities from stakeholder collaboration, verification, maintenance, operation, experimentation, research and development, and anything else that might be required. They are structured and empowered by the organization to manage their own work. Working in Sprints at a sustainable pace improves the Scrum Team's focus and consistency. The entire Scrum Team is accountable for creating a valuable, useful Increment every Sprint".

1.2 **Examples for the Scrum Master:** "The Scrum Master is accountable for establishing Scrum as defined in the Scrum Guide". "The Scrum Master is accountable for the Scrum Team's effectiveness". "The Scrum Master serves the Scrum Team, Product Owner and Organization".

1.3 **Examples for the Developers:** "The Developers are always accountable for: creating a plan for the Sprint; the Sprint Backlog; instilling quality by adhering to a Definition of Done; adapting their plan each day toward the Sprint Goal; and, holding each other accountable as professionals".

1.4 **Examples for the Product Owner:** "The Product Owner is accountable for maximizing the value of the product resulting from the work of the Scrum Team. [...] The Product Owner is also accountable for effective Product Backlog management".

1.5 **Example:** There is no explicitly mentioned reason why the Product Owner should be a single person in the *Scrum Guide*. One way to approach this topic is to discuss the advantages and disadvantages of having a single Product Owner.

1.6 **Example:** Gather ideas and input, receive feedback, maintain contents and order of the Product Backlog, decide when to release and when to stop developing.

1.7 **Examples:**
Sprint Planning: "Through discussion with the Product Owner, the Developers select items from the Product Backlog to include in the current Sprint. The Scrum Team may refine these items during this process, which increases understanding and confidence".
Daily Scrum: "...[The] Daily Scrum focuses on progress toward the Sprint Goal and produces an actionable plan for the next day of work.;
Sprint Review: "inspect the outcome of the Sprint and determine future adaptations".
Sprint Retrospective: "The Scrum Team identifies the most helpful changes to improve its effectiveness".

1.8 **Example:** A Sprint Planning could be demonstrated, simulated. Another valid approach would be an experience report about an actual Sprint Planning the students conducted.

1.9 **Example:** A Sprint Review could be demonstrated, simulated. Another valid approach would be an experience report about an actual Sprint Review the students conducted.

1.10 **Example:** A Sprint Retrospective could be demonstrated, simulated. Another valid approach would be an experience report about an actual Sprint Retrospective the students conducted.

1.11 **Examples:** "Quality and effectiveness" would not improve, or decline. "Assumptions that led them astray" would not be identified or challenged. "Helpful improvements"would not be planned, keeping the team at its current level of effectiveness or worse.

1.12 **Examples:** The emphasis of this Learning Objective is on the responsibility of the Developers for conducting the retrospective. Of course it is possible to deliver more than this basic expectation, for instance, simulate a Daily Scrum and discuss the self-management of the Developers afterwards.

1.13 **Examples:** "If the Product Owner or Scrum Master is actively working on items in the Sprint Backlog, they participate as Developers"; "The Developers can select whatever structure and techniques they want"; "[The] Daily Scrum focuses on progress toward the Sprint Goal and produces an actionable plan for the next day of work".

1.14 **Example:** The participants explain in their own words, "A Sprint could be cancelled if the Sprint Goal becomes obsolete. Only the Product Owner has the authority to cancel the Sprint".

1.15 **Examples:** The participants explain in their own words that a strong Definition of Done, "meets the quality measures required for the product", "creates transparency by providing everyone a shared understanding of what work was completed as part of the Increment", and/or that "the Developers are required to conform to the Definition of Done".

1.16 **Example:** This is more or less a freestyle Learning Objective. Ways to create a Definition of Done could be a facilitated session, copying an existing DoD from another team or the organization, or any combination of these. A structure could be a list of all activities required to get something to "Done."

Scrum Master Core Competencies

2.1 **Examples for ways the Scrum Master could facilitate for the Scrum Team:** Through supporting the decision making process in planning events; through leveraging creative techniques in Product Backlog refinement; through helping the team pick possible improvements in a Sprint Retrospective.

2.2 **Examples of techniques for facilitating group discussions include:** Dot voting; fist of five; thumb voting.

2.3 **Examples for restating the distinction:** This is intentionally open. One possible distinction is described in the ACI Coaching Competencies Framework.

Service to the Scrum Team, Product Owner, and Organization

3.1 **Example:** The students can come up with their own scenarios or evaluate prepared ones, where the Scrum Master provides leadership and guidance through coaching, facilitation, and fostering a collaborative environment, creating structures or any other possible way.

3.2 **Examples of the impact from having technical debt include:** technical debt impacts the capacity of the team over time; the increase of cost in addressing technical debt too late.

3.3 **Examples of how development practices impact delivery might be:** Continuous integration helps to detect integration errors earlier and speed up releasing; Refactoring improves product quality and thus minimizes adjustments for new features; and, Collective code ownership reduces island knowledge and bottlenecks due to unnecessary specialization.

3.4 **Examples of ways the Scrum Master supports the Product Owner are:** Ensuring that goals, scope, and product domain are understood as well as possible by everyone on the Scrum Team; finding techniques for effective Product Backlog management; helping the Scrum Team understand the need for clear and concise Product Backlog items; understanding product planning in an empirical environment; ensuring the Product Owner knows how to arrange the Product Backlog to maximize value; understanding and

practicing agility; facilitating Scrum events as requested or needed.

3.5 **Examples of organizational impediments:** insufficient information; not-suitable infrastructure; lack of learning and training capabilities; a reward system that favors individual success over team collaboration [recommended reading: *Richard Hackman, Leading Teams*]; geographical distribution; people in multiple project teams; incentives and HR policies; and, no constructive safe-to-fail culture.

3.6 **Examples of how the Scrum Master can assist the Scrum Team with impediments:** making impediments visible; working with the Scrum Team to resolve impediments.

3.7 **Examples of impediment removal techniques:** This could be a Retrospective activity, a liberating structure like What, So What, Now What, an analysis technique like 5 Whys.

3.8 **Examples of major organizational changes are:** elimination of single-function groups; traditional career paths, or annual appraisals. Introduction of product-over-project thinking, and stable long-term teams.

3.9 **Examples:** Scrum Teams are self-managing, different approaches for complex work, project management responsibilities are distributed among the Scrum Team.

A-CSM®

General Considerations

Unlike the basic certifications, the Advanced level requires a lot of additional research and experience. We hint at useful sources of information where we can. However, the examples given are just that: examples to illustrate the purpose and objectives of the Learning Objectives.

Lean, Agile, and Scrum

1.1 **An example of how the Agile Manifesto alignment with Scrum might be demonstrated:** Students map frequent inspection and adaptation to the activities in Sprint Review, Sprint Retrospective, and Daily Scrum. Some level of detail is important here.

1.2 **Examples of this outline:** A list of events leading to the development of Scrum in chronological order, or a diagram showing the relationships between Scrum and its predecessors.

1.3 **Examples of other Lean/Agile approaches are:** The approaches should belong to the Lean family in general. Lean Software Development, Kanban, and SAFe can be considered Lean, eXtreme Programming, Crystal Clear, Feature Driven Development, and of course, Scrum would be "Agile" in this context.

1.4 **Examples of personality traits:** There is no right or wrong. A possible collection of personality traits for a Scrum Master could be: Flexibility, creativity, passion, empathy, trustworthiness, sense of humor [adopted from https://www.socialworker.com/extras/social-work-month-2015/7-characteristics-every-social-worker-needs/]; adjectives: proactive, curious, humble, improving, learning, responsible, committed.

Scrum Master Core Competencies

2.1 **Examples:** The most referred-to standard on group facilitation is [Sam Kaner: *Facilitator's Guide to Participatory Decision Making*]. Examples for "divergent thinking" would be: generating a list of ideas, free flowing open discussion, seeking diverse points of view, and suspending judgement. Indicators for "convergent thinking" would be: sorting ideas into categories, summarizing key points, coming to agreement, and exercising judgement.

2.2 **Example challenges of integrating multiple perspectives:** People thinking out loud, realization of consequences of rejection, different emotional setups, discomfort, and risk of escalation. Free-flowing challenges might be: the *"Groan Zone"* (see Sam Kaner: *Facilitator's Guide to Participatory Decision Making*), lacking in one or more of the *"Seven Cs of Communication" (Cutlip and Center)*.

2.3 **Examples of facilitative listening techniques:** Paraphrasing, mirroring, making space, stacking *[Kaner]*.

2.4 **Examples of alternatives to open discussion:** Structured go-arounds, individual writing, listing ideas, dialogue in pairs or small groups.

2.5 **Examples** when the Scrum Master should not act as the facilitator include situations where the Scrum Master cannot hold a neutral, positive, resourceful facilitator stance. The situations can be provided by the students or Educator.

2.6 **Examples:** The collaborative events can be Scrum Events. In order to fulfil this Learning Objective, we would expect some practical demonstration or evidence from the student's practice.

2.7 **Example obstacles to clear communication**: repetition, boredom, emotional response, unrelatedness, distraction. Strategies to resolve: participatory listening techniques *[Kaner]* like paraphrasing, calling somebody out, validating, linking, acknowledging emotions.

2.8 **Example of a working agreement:** a collection of behavioral rules created by a team, e.g., "Start and end meetings on time."

2.9 **Example coaching stance:** Neutrality, non-judgmentalism, self-awareness, holding the client agenda, non-colluding. References: *[Agile Coaching Institute], [International Coaching Federation]*

2.10 **Example coaching techniques:** active listening, powerful questions, reflection, feedback, GROW model.

2.11 **Example:** The examined coaching session / intervention / measure can be a role-play in a class, or taken from the student's or trainer's own experience.

2.12 **An example** explanation can be found in "*Agile Product Ownership in a Nutshell*," by Henrik Kniberg.

Service to the Scrum Team

3.1 **Example**: "Effective self-managing teams are responsible for their own work, accountable for their progress, deliver to the satisfaction of their customers, are capable of improving their performance, provide space for individual learning." [*Richard Hackman: Leading Teams*].

3.2 **Example:** This Learning Objective is not about removing impediments. Self-management requires the team to take responsibility for their own performance processes [*Hackman*]. a) A technique that supports the team to manage their own work; for instance, conducting the Daily Scrum on their own. b) A technique that supports the team to improve their performance strategy; for instance reflection in a Retrospective c) A technique that fosters learning within the team; for instance establish brown bag sessions.

3.3 **Examples of how working groups and teams differ:** teams demonstrate on-demand leadership, ability to deal with conflicts, equal voice, well-known and practiced norms, shared goals, mutual accountability, long-term composition, full dedication.

3.4 **Examples of a multi-staged model for team formation:** Forming/Storming/Norming/Performing [Tuckman], *Five dysfunctions of a Team [Lencioni], Team Performance Curve [Katzenbach/Smith]*

3.5 **Example:** This requires an actual demonstration or experience report of a facilitated session. Alternatively, the student could combine their experience with facilitating something different with the special content required for a Definition of Done - "The Definition of Done is a formal description of the state of the Increment when it meets the quality measures required for the product". [*Scrum Guide 2020*]

3.6 **Example contexts for a definition of "Done" for a non-software product:** insurance tariff; hardware product; event planning.

3.7 **Examples of how development practices can help a Development Team are:** Continuous integration helps to detect integration errors earlier and speed up releasing; Refactoring improves product quality and thus minimizes adjustments for new features; Collective ownership of designs and implementations reduces island knowledge and bottlenecks due to unnecessary specialization.

3.8 **Example reasons why dev practices are beneficial for multiple teams:** provide earlier feedback; simplify integration; reduce defects; enable new team members to get up to speed.

Service to the Product Owner

4.1 **Example:** The newly introduced "Product Goal" could be seen as a synonym for "Product Vision." However, the student should be able to distinguish between both terms. "The Product Goal is the long-term objective for the Scrum Team. They must fulfill (or abandon) one objective before taking on the next." *[Scrum Guide]* indicates that there can be a sequence of Product Goals for a given product. A vision is typically more loosely described than a goal.

4.2 **Examples of techniques to create or refine a product goal are:** product vision board; business model or Lean canvas; customer journey; impact mapping; user story mapping.

4.3 **Examples of creating a Product Backlog that supports achievement of a Product Goal:** story mapping; roadmapping; ordering features or epics followed by decomposition and refinement of Product Backlog items.

4.4 **Examples of approaches to refine the Product Backlog items are:** PBI splitting; BDD; Specification by Example; estimating; user story workshop.

Service to the Organization

5.1 **Examples of resolution methods:** Root cause analysis; 5 Whys; Causal Loop Diagrams; Speedboat retrospective.

5.2 **Example questions regarding the impacts of new Scrum Guide adoption:** Based on the Scrum Guide 2020, what are some differences between their current adoption and the way Scrum is described? Would it help to change the current practices?

5.3 **Examples of approaches are** LeSS, SAFe, Scrum at Scale, Enterprise Scrum, Spotify, Nexus. We are aware that some of these approaches are actually not scaling Scrum but embedding Scrum-like work processes into a different structure. Students should be able to recognize these approaches by having indicators; for instance, having a single Product Owner for multiple teams points to a LeSS-like adoption; having a Nexus team is pointing to Nexus, etc.

5.4 **Examples for reasons why not to scale:** learning curves; adaptivity and agility; information loss; communication clutter.

5.5 **Examples:** This Learning Objective can be fulfilled with any technique from any scaling approach. Example: Refinement with multiple team representatives; Scrum of Scrums; Kanban; Overall Retrospectives.

5.6 **Examples for benefits of feature teams:** Product Backlog can contain actual user requirements or stories; less dependencies between teams; planning is sped up because of team capabilities.
Examples for benefits of component teams: compatible with existing structures; consistency within components; knowledge transfer about technologies easier.

5.7 **Examples for the nature of complex systems:** large numbers of interacting elements; the system is dynamic; elements evolve with one another and with the environment; unpredictability.
[David Snowden: A Leader's Framework for Decision Making/Cynefin]

5.8 **Examples for organizational change frameworks:** Lewin's change management model; The McKinsey 7-S model; Kotter's theory; Nudge theory; ADKAR; Bridges' transition model; Kübler-Ross' change curve; The Satir change management model.

Scrum Mastery

6.1 **Examples** of how to evaluate personal fulfilment might include using a radar chart or other scale. A

journal is also possible.

6.2 Examples of detecting a destructive conflict are: emotionality; tone of voice; low interest in finding a solution.

6.3 Examples of responding to conflict include: denial; consensus; giving in; overpowering; withdrawal.

6.4 Examples of effective leadership: There are many sources for this. Most of them include self-awareness, a focus on developing others, good communication skills, inclusiveness, decisiveness, encouraging behavior.

6.5 Examples of how leadership attributes can be demonstrated: experience report, role-play in class.

CSP®-SM

Lean, Agile, and Scrum

1.1 Examples of the origins of Lean Thinking are: Total Quality Management; Toyota Production System. *[Liker: The Toyota Production System]*

1.2 Example core concepts of Lean Thinking include: Lean values of respect for people and continuous improvement; lean concepts of value; value stream; flow; pull and perfection. *[Womack: Lean] [Larman: Lean Primer]*

1.3 Examples of wastes in product development are: extra features; partially done work; extra processes; handoffs; defects; delays; task switching. *[Poppendieck: Lean Software Development]*

1.4 Example agile practices that relate to Lean practices are: continuous integration; test-driven development; simple design; retrospectives; collective code ownership - or any development practices in the context of the learner.

Scrum Master Core Competencies

2.1 Examples of the alternatives to group discussion: structured go-arounds; individual writing; listing ideas; dialogue in pairs or small groups. *[Kaner: Facilitators Guide to Participatory Decision Making]*

2.2 Example facilitator actions: "Applying inclusive principles, creative reframing, strengthening good ideas" *[Kaner]*.

2.3 Examples of visual facilitation techniques: card question; clustering; dot voting; visual note-taking. Advanced examples are: Systems thinking; Wardley Mapping; Value Stream Mapping.

2.4 Example practices for facilitating remote meetings are: turn-taking between face-to-face and remote participants; establishing a communication protocol; shared note-taking; breakout-sessions; use of visual indicators (raising hands, emoji feedback).

2.5 Example elements of a coaching agreement: role of the coach; duration; expectations; feedback; responsibilities [=> ICF Core Competencies].

2.6 Example coaching assumptions: The solution is within the client; Coaching is based on a relationship; Coaching changes the coach as well; Coaching has a goal; Coaching has a time limit.

2.7 Examples of fundamental psychological concepts: Disclaimer: The CSP-SM is no replacement for a psychological or therapeutical education. We expect some awareness and knowledge of basics: EQ/ emotional intelligence; Responsibility Process; ORSC; DiSC; transactional analysis; mindset; empathy; DRIVE.

Service to the Scrum Team

3.1 Examples: Models for team development are mentioned in A-CSM examples. This Learning Objective raises the bar by letting the student appraise the different models. Aspects could be the difficulty of the model, effectiveness of the application, scientific background.

3.2 **Example** techniques that improve team effectiveness include building trust; encouraging healthy conflict; fostering mutual accountability; physical team-building exercise; trust-building conversation models.

3.3 **Examples of Product Owner/stakeholder responsibilities for a new Scrum Team are:** communicate vision, purpose, and customer needs; clarify constraints, context, and stakeholder expectations. Examples of the Developer responsibilities are: get to know each other; create transparency about capabilities; create ground rules and working agreements.

3.4 **Example:** This would require a simulation or an experience report.

3.5 **Example strategies to fill in missing skills are:** learning budget; pairing; include externals

3.6 **Example of software craftsmanship elements:** SOLID or CUPID principles; Boy Scout Rule.

Service to the Product Owner

4.1 **Example techniques to move from Product Goal to Product Backlog are:** innovation games; user story mapping; user story workshop; brainstorming.

4.2 **Examples of criteria that can be used:** structure by feature area, and by the responsible team.

Service to the Organization

5.1 **Example systemic methods to improve a Scrum adoption:** Value Stream Mapping; Causal Loop Diagrams; Wardley Mapping

5.2 **Example:** This Learning Objective is based on the individual experience of the student or trainer. The analysis should contain the situation, the underlying root cause(s); a list of measures/experiments, and results.

5.3 **Example:** This Learning Objective is based on the individual experience of the student or trainer.

5.4 **Example:** Based on the Scrum Guide 2020, the students need to prepare an evaluation of actual measures.

5.5 **Example patterns to scale the Product Owner role include:** shifting clarification responsibility to the Development Team; defining feature areas or different sub-products; having a PO team; having a Chief Product Owner.

5.6 **Examples of techniques to improve inter-team collaboration are:** Scrum of Scrums meeting; Open Space; shared planning sessions; colocation; cross-visits during Daily Scrum meetings; Open Space; World Cafe; Liberating Structures 1-2-4-all; Sprint Review Bazaar.

5.7 **Example benefits:** This Learning Objective requires a demonstration or evidence of an actual experience of the student.

CSPO®

Product Owner Core Competencies

1.1 **Examples of possible organizational designs are:** The Product Owner is viewed as simply an order taker; focusing only on strategy and handing details off to the delivery team; leaving everything ambiguous, letting the team figure it out with no input; telling the team how to do their job; the organization assigns “proxy Product Owners” that don’t have authority to reorder; the organization has technical Product Owners for customer-facing products; a “part-time Product Owner” who is attempting to fill the role while doing another job. Other: A Product Owner has complete ownership of target customer, problem, and solution; a Product Owner owns the delivery of someone else’s idea or initiative; a Product Owner delivers a shared service to other teams in the organization; a Product Owner works on short-term projects for which they own the outcome.

1.2 **Examples of how to provide transparency to stakeholders are:** release burn-up chart, roadmap, Sprint Reviews.

1.3 **Examples of techniques that engage stakeholders include:** collaborative vision workshops, Sprint Reviews, questionnaires, prototypes, interviews. *[Marty Cagan: Inspired]*

1.4 **Examples of the interaction:** "Product Owner ensures that attendees *[of the Sprint Planning]* are prepared."
During Sprint Planning: "The Product Owner proposes how the product could increase its value and utility in the current Sprint," "...collaborates to define a Sprint Goal," "[inform the Developers to] select items from the Product Backlog to include in the current Sprint," "refine [...] items."
During Sprint Review: "Review what was accomplished [...]. Based on this information, attendees collaborate on what to do next. The Product Backlog may also be adjusted to meet new opportunities."
During Sprint Retrospective: "The Scrum Team discusses what went well during the Sprint, what problems it encountered, and how those problems were (or were not) solved." *[Scrum Guide 2020]*

1.5 **Examples of how to overcome the challenges of being a PO for multiple teams:** See *[Larman, Vodde: Large Scale Scrum]*: Focus on prioritization rather than clarification, let teams work directly with stakeholders, provide one shared Product Goal and Backlog - "If Scrum Teams become too large, they should consider reorganizing into multiple cohesive Scrum Teams, each focused on the same product. Therefore, they should share the same Product Goal, Product Backlog, and Product Owner."

1.6 **Examples of why the Product Owner is a single person:** The *Scrum Guide* just states this, so the reasons might be taken from other sources. Avoid "Design by Committee." Ensure responsibility and accountability for the product. Shorten the feedback cycle.

1.7 **Example points for the discussion:** How: Let anybody propose changes to the Product Backlog but keep the authority, provide transparency about the current plan and progress, collaborate on finding criteria for prioritization, let the Developers refine items but reserve the decision if and where to place the refined items in the Product Backlog. Why: a single source of truth; avoid conflicting priorities within the Scrum Team; foster focus on the most important stuff.

Goal Setting and Planning

2.1 **Example:** The newly introduced "Product Goal" could be seen as a synonym for "Product Vision." However, the student should be able to distinguish between both terms. "The Product Goal is the long-term objective for the Scrum Team. They must fulfill (or abandon) one objective before taking on the next." *[Scrum Guide]* indicates that there can be a sequence of Product Goals for a given product. A vision is typically more loosely described than a goal.

2.2 **Examples of techniques to create or refine a product goal are:** a product vision board, business model or Lean canvas; customer journey; impact mapping; user story mapping.

2.3 **Example:** This Learning Objective requires a demonstration of the capability or an experience report.

2.4 **Example components of a product plan or forecast could be:** objective or product goal, target customers, possible high-level features, next steps or next objectives, delivery dates, expected budget, possible risks, reasons for pivots and changes. The product plan or roadmap presents a high-level view on the progress and decisions over time and acts as a strategical planning tool.

2.5 **Example techniques to plan a product release include:** ordered Product Backlog; creating a prioritized product roadmap with stakeholders; opportunity backlog; incremental release plan; story map; impact mapping.

2.6 **Example approaches to identify increments:** (Real) User Stories, functionality for a target group; functionality that fulfills a business case (which could be a Sprint Goal).

Understanding Customers and Users

3.1 Examples of how to include product discovery and validation:
Discovery: Run experiments or design Sprints, work with reference customers, use user personae to link product discovery and development.
Validation: Include user behavior data in the Sprint Review, test product assumptions, inspect and adapt based on experiment results.

3.2 Examples of approaches to segmenting customers/users are: customer types; geography; regulatory bodies.

3.3 Examples of how to deal with conflicting needs: Look for an inclusive solution; evaluate the different return on investment; facilitate the prioritization discussion.

3.4 Examples of the aspects of product discovery are: user research, customer experience design; interaction design; usability engineering; visual design. Address the main risks of 1. Addressing the wrong problem, 2. Offering the wrong solution, 3. Not being able to deliver, 4. Having no ROI by continuously providing transparency, inspecting and adapting. *[Cagan]*

3.5 Examples of ways to connect the Developers to customers/users are: Sprint Review; job shadowing; customer interviews; customer observation; collaborative customer games; usability testing; or simulating customer experience.

Validating Product Assumptions

4.1 An example of how Scrum supports validating product assumptions is by: using each Sprint to experiment and learn about the product, specific process adaptations, and following the plan.

4.2 Example approaches to validate product assumptions include: quantitative marketing research; interviews; demonstration of the Increment in Sprint Review; prototypes.

Working with the Product Backlog

5.1 An example of how to describe the difference between outcome and output might look like: Output is a measure of what was built; the outcome is how that output impacts users and customers and the resulting business value that this provides.

5.2 Examples to maximize outcome and minimize output: Apply YAGNI - You Ain't Gonna Need It - to the product prioritization; focus on the most important features, learn to say NO.

5.3 Example terms that relate to product economics include: cost of delay; net present value; total cost of ownership; time value of money; margin; opportunity costs.

5.4 Examples of value are: modeled or assumed value; actual value to customer; return on investment maximizing learning; risk/de-risk; acquiring new customers.

5.5 Examples of techniques to measure value include: usage metrics; net promoter score; customer and user interviews; social media sentiment; direct observation; ROI; profitability of the product; inbound customer feedback.

5.6 Examples of creating a Product Backlog that supports achievement of a Product Goal: story mapping, roadmapping, ordering features or epics followed by decomposition and refinement of Product Backlog items.

5.7 Examples of desired Product Backlog Item formats that include the description of desired outcome and value are: user stories and acceptance criteria; acceptance tests; use cases; hypotheses; BDD; system qualities; spikes.

5.8 Example approaches to Product Backlog refinement are: user story brainstorming; customer interviews; open planning meetings; collaborative games.

A-CSPO®

Product Owner Core Competencies

1.1 Examples why Product Ownership is important and how Product Ownership contributes to the success of a product, seen from a positive perspective: clarity of vision; competitive advantage; better alignment of stakeholders and Developers; incorporate product management and product development [Cagan]; improve accountability; better adaptivity; being able to set a compelling direction for effective teamwork; foster alignment; represent the business focus.

1.2. Examples of the mindset of a successful Product Owner: collaborative; competitive; empathetic; business focused; adaptive; visionary.
Examples of the actions of a successful Product Owner: Delivers product solutions that delight customers and users; integrates aspects and constraints of technical feasibility; considers organizational context and regulatory requirements; collaborates as a member of the Scrum Team.

1.3 Example impacts: The reasoning behind this Learning Objective is that A-CSPOs are aware of the development of Scrum and how they could benefit from adopting the latest concepts. Naturally, a result of the discussion could also be to stick with the current adoption.

1.4 Example techniques include: Product Backlog refinement; roadmapping; release planning; qualitative market research; Sprint Reviews; observe Daily Scrums. This Learning Objective requires a demonstration in class or some reflection about a practice experience of the student.

1.5 Examples for why a Product Owner might not want to act as a facilitator include: emotional conflict; impediment to creativity; lack of facilitation skills; too invested in the outcome of the discussion to be impartial.

1.6 Examples of facilitative listening techniques include: paraphrasing; mirroring; making space; stacking. [Sam Kaner: Facilitator's Guide to Participatory Decision Making]

1.7 Example alternatives might look like: structured go-arounds; individual writing; listing ideas; dialogue in pairs or small groups. *[Kaner]*

1.8 Examples for how to help stakeholders reach their final decision might be: fist of five; decider protocol; majority vote.

1.9 Examples of why the Product Owner should be cautious about technical debt include: Technical debt impacts the capacity of the team over time; there is an increase of cost for addressing technical debt too late; a design strategy is adopted that isn't sustainable in the long term [reference the *"Debt Quadrant", by Martin Fowler*].

1.10 Example development practices might include: From eXtreme programming - test-driven development, pair programming, continuous integration, collective code ownership, refactoring.

1.11 Example situations: Discussion of the flow within a Sprint; decision to swarm on a single item rather than starting all select items at the same time; reduction of the Sprint length to support faster feedback; more opportunities to adapt to new insights and market events; clarification of a Definition of Done to produce higher quality increments and reduce defects and rejected Product Backlog items.

1.12 Examples of approaches are LeSS, DAD, Enterprise Scrum, Scrum at Scale. We know that these approaches could also be modifications of Scrum. The reasoning behind the Learning Objective is to raise awareness about the different options for scaled product development.

1.13 Examples of techniques: The student can pick anything from the catalogue of LeSS *[Vodde/Larman: Large Scale Scrum]* experiments or any other scaling approach, including Kanban.

1.14 Examples for benefits of feature teams: Product Backlog can contain actual user requirements or stories, less dependencies between teams, planning is sped up because of team capabilities.
Examples for benefits of component teams: Compatible with existing structures, consistency within

components, knowledge transfer about technologies easier.

Advanced Goal Setting and Planning

2.1 **Example:** There are numerous real world examples, for instance: Zappo's, Spotify, Salesforce, AirBnB.

2.2 **Example approaches to identify purpose and define strategy include:** co-creating; collaborating; product or vision box; cover story; selling; telling. [Recommended: https://en.wikipedia.org/wiki/Product_strategy]

2.3 **Examples for creating a product plan or forecast are:** ordered Product Backlog, create a prioritized product roadmap with stakeholders; opportunity backlog; incremental release plan; story map; impact mapping.

2.4 **Examples of techniques to visualize and communicate might look like:** business model canvas; customer journey map; user story map; user scenario; design comic.

Empathizing with Customers and Users

3.1 **Examples of techniques that connect teams to customers include:** job shadowing; customer interviews; customer observation; collaborative customer games; usability testing; simulating customer experience. *[Cagan]*

3.2 **Example techniques for product discovery are:** user research; customer experience design; interaction design; usability engineering; visual design.

Advanced Product Assumption Validation

4.1 **Examples of cognitive biases include:** anchoring (on prior opinion or desired total effort); priming based on assumptions; confirmation bias; framing bias; self-serving bias; fundamental attribution error. *[David Kahneman: Thinking Fast and Slow]*

4.2 **Example appraisal:** Based on an own or presented recording or outline of a Sprint Review, the student should be able to evaluate the effectiveness of the event regarding the inspection and adaptation of the Increment and Product Backlog.

4.3 **Example approaches to validate assumptions might include:** product creation; customer interviews; ethnographic research; direct user observation; A/B tests; collaborative games; concierge/Wizard of Oz MVPs; paper prototypes; functional prototypes.

4.4 **Examples of how to incorporate validation assumptions are:** Validation is completed prior to starting Sprints; the Product Owner validates assumptions a Sprint or two ahead of the Development Team and the Scrum Team uses the Sprint Goal to deliver results to test assumptions.

4.5 **Example hypotheses might look like:** "I believe [target market] will [do this action/use this solution] for [this reason]"; "The signal to detect whether the hypothesis is true or false is…"; "We believe that if we do X, then the result will be Y"; "By adding this capability, we expect click-through rates to increase by 20% in the next three months."

4.6 **Example tests for hypothesis:** The student is required to create or present an existing plan to test a hypothesis for a product. The plan should contain at least the hypothesis, planned measures and Product Backlog Items, expectations, and a time frame.

Advanced Techniques for Working with the Product Backlog

5.1 **Example techniques to measure value might be:** usage metrics; net promoter score; customer and user interviews; social media sentiment; direct observation; ROI; profitability of the product; inbound customer feedback.

5.2 **Example techniques that help support a Product Goal:** Impact Mapping; Theme Screening; Theme Scoring; Relative Weighting *[Mike Cohn: Agile Estimating and Planning]*.

5.3 Example measures to ensure enough "ready" items: Let the team refine; perform frequent sessions with stakeholders and/or Developers; ensure proper acceptance criteria for each item.

5.4 Example on how to integrate feedback: Demonstrate in the class or by providing suitable evidence that the students were able to leverage customer feedback, stakeholder intentions and Developer contributions. Other possible sources could include marketing data, legal developments, sustainability audits, etc.

5.5 Example on how to improve refinement: Discuss refinement measures in the Retrospective; use more frequent, shorter refinement sessions; integrate stakeholder feedback; clarify the value of each item by linking it to the Product Goal; use specific techniques like User Stories *[Mike Cohn: User Stories Applied]* or Use Cases *[Cockburn: Use Cases]*.

CSP®-PO

1.1 Examples of organizational designs are: a Product Owner who has complete ownership of target customer, problem, and solution; a Product Owner who owns the delivery of someone else's idea or initiative; a Product Owner who delivers a shared service to other teams in the organization; a Product Owner who works on short term projects for which they own the outcome.

1.2 Examples for how to improve a session include: having an external facilitator; using visual management and facilitation methods; establishing ground rules at the beginning of the session.

1.3 Example techniques include: collaborative customer games; customer interviews; customer observations; Kano method; customer surveys (in-person or online).

1.4 Example benefits: This Learning Objective has an open outcome. It is important that the students are aware of the latest developments in the Scrum Guide and how to potentially leverage them.

1.5 Example reasons include: level of collaboration; lack of experience in agile environments; importance of shared understanding.

1.6 Example: The Product Owner contributes to the effectiveness of the Scrum Team by setting the compelling direction and helping establish enabling structures. *[Richard Hackman: Leading Teams]*.

1.7 Example: We expect the demonstration of planning capabilities by either doing it under supervision or presenting one's own plan created to launch a new Scrum Team.

1.8 Example techniques are: Kanban flight levels; multi-team-boards; Product Backlog management tools

1.9 Example patterns for scaling the PO role: shifting clarification responsibility to the Development Team; defining feature areas or different sub-products; having a PO team; having a Chief Product Owner.

1.10 Example: We are aware that not every CSP-PO is trying to climb to Guide level. However, at this expert level, the student should be able to instruct others about Scrum, Product Ownership, various techniques and methods. The selected topic is open, the teaching needs to be demonstrated or validated otherwise.

Implementing Goal Setting and Planning

2.1 Examples of business models are: time-based access (perpetual, annual, subscription); transaction; meter; service. Other examples by category include: payment (subscription, freemium); go-to market (reseller, affiliate, direct); contribution to organization (franchise opportunity, auction).

2.2 An example way to develop a business model is: business model canvas; value proposition design; business-model generation, Lean Canvas.

2.3 Example for a competitive analysis: A research of major competitors that provides insight into their products, sales and marketing approach in order to strengthen their own position in the market.

2.4 **Example techniques are:** user story map; two-dimensional roadmap; timeline; create a vision; prioritize features; identify dependencies; macro-level estimation; alignment to marketing plan or organizational events.

2.5 **Example release strategies:** Release incrementally to different market segments; release new versions continuously; big bang release; release limited version first.

2.6 **Example product launch goals are:** increase new customers; repeat purchases; new market; new partnerships; increase subscribers.

2.7 **Example elements are:** preparing internal stakeholders or groups; preparing customers; collaborating to create communications; transition or migration plan; distribution plan.

2.8 **Example methods are:** calculate margin, total cost of ownership (TCO); cash flow.

2.9 **Examples:** The product release can be real or fictious. A method to calculate the outcome can be derived from launch data: leads generated; website traffic; news coverage, or product adoption: trials; usage; user retention; market impact; revenue; market share; competitive win rate; qualitative internal or external feedback.

2.10 **Example:** This Learning Objective is very open. One approach could be to use marketing funnels, where each level's revenues fuel the marketing of the next level. Another angle could be an incremental product rollout for different markets.

2.11 **Examples of ways to improve ROI include:** Remove less important features; reduce time to market; apply prioritization and estimation methods that help determine the most valuable product features for the least investment.

2.12 **An example** way to calculate the cost of delay is to determine potential losses and other risks. *[See Reinertsen: Flow for an excessive coverage of cost of delay.]*

2.13 **Example approaches are:** time and materials with variable scope; short prototype projects; cost ceiling.

Advanced Interactions with Customers and Users

3.1 **Examples of plans might include:** customer discovery; customer validation; customer creation; company building. The student needs to actually create a plan or demonstrate their capability by presenting their own existing plan.

3.2 **Examples of customer research techniques are:** storyboards to communicate context; user flows; interactions. Examples of product discovery include: vision creation; generating new product ideas; roadmapping; opportunity mapping; prioritization; market research.

Complex Product Assumption Validation

4.1 **Examples:** As an extension of the A-CSPO Learning Objective, this Learning Objective is about the capability to distinguish between different kinds of experiments and selecting an appropriate one for a given challenge or hypothesis. This would typically require treating how experiments can be compared.

4.2 **Examples of analysis items might be:** how it increases shared understanding; how it provides focus on small increments of value delivery; level of Development Team involvement in creation and refinement.

Advanced Product Backlog Management

5.1 **Example:** One way to tackle this Learning Objective is to examine various Scrum organizations and their focus on outcomes. They might be using OKRs, a Goal #1, or any kind of other approach to emphasize the outcome.