

Course: Software Project Management

Week 14: Software Project Management Best Practices

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- Ways to Have a Software
- Choosing Methodologies and Technologies
- Project Management Certifications
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Learning Outcomes

After completing this lesson, you will be able to:

- Describe key industry best practices
- Describe software solution acquisition ways, methodologies and tools
- Identify globally recognized certifications and exam tips
- Apply best practices for software project success

Introduction



Software Project Management ensures the successful delivery of software projects by applying

- Systematic approaches to project execution
- Platforms for team communication and coordination
- Proven methods for achieving project excellence



Structured methodologies



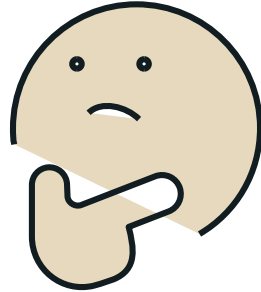
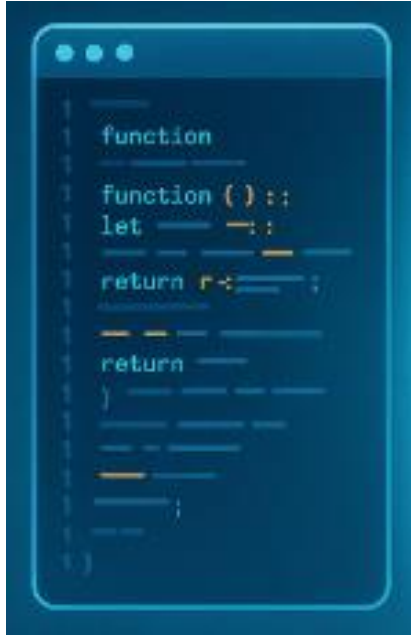
Collaboration tools



Industry best practices

Ways to Have a Software Solution

Build or Buy?



Build or Buy?

- Software development involves two key perspectives (Bob Hughes, 2011):
 - **Developers** and **clients/users**.
- In **in-house** development
 - both groups belong to the same organization.
- In **outsourced** development
 - developers and users work for different organizations.

Build or Buy?

- With global development,
 - these organizations may be located on different continents.
- These distinctions influence how a development project is structured and managed.

Off-the-Shelf Software

- Common Alternative to In-House/Outsourced Development (Bob Hughes, 2011):
 - **Licensing off-the-shelf software**
- **Advantages:**
 - Lower cost per customer due to shared development expenses
 - Immediate availability
 - can be previewed, tested, and used without delay
 - Greater reliability from widespread use and bug fixing

Off-the-Shelf Software

- **Disadvantages:**

- No unique competitive edge:
 - everyone uses the same solution
- Limited customization:
 - may require adjusting internal processes
- Lack of code ownership:
 - restricts future modifications
- Vendor lock-in:
 - Dependence may lead to high renewal or upgrade fees

Choosing Methodologies & Technologies

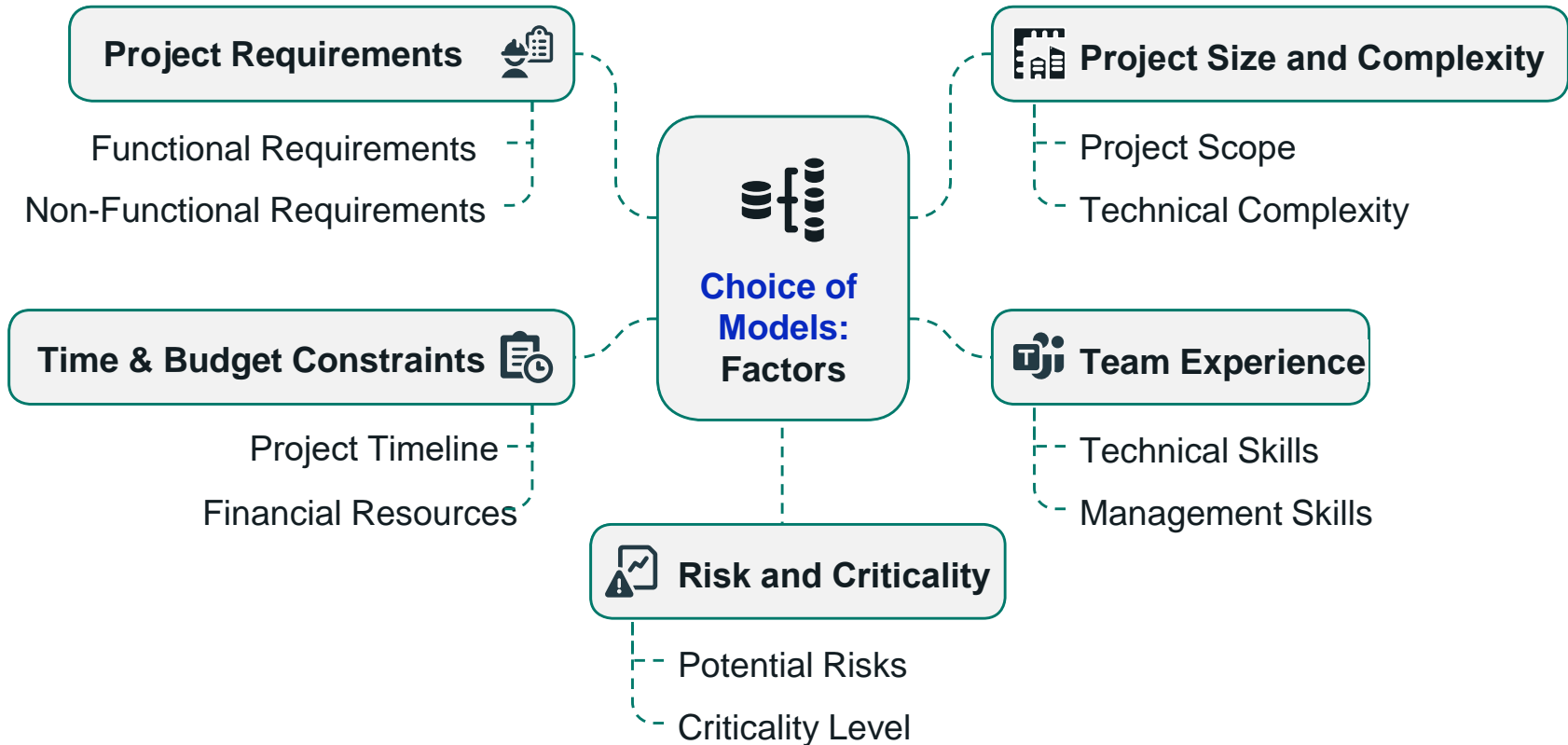
- Project analysis helps define:
 - **Methodologies**: e.g., USDP, SSADM, Human-Centred Design
 - **Technologies**: development tools, testing environments
- Analysis also identifies:
 - Specific **methods** within the chosen methodology
 - Appropriate **tools** and environments

Choosing Methodologies & Technologies



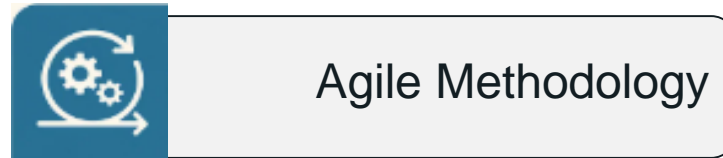
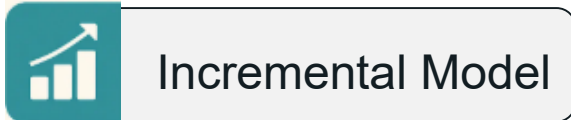
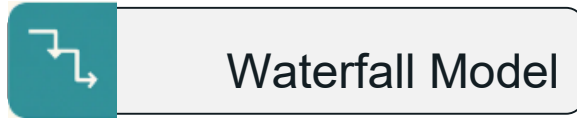
**Choice of process
models**

Choosing Methodologies & Technologies



Choosing Methodologies & Technologies

Choice of process models: The Process Models



Choosing Methodologies & Technologies

Impact of choices



**Developer
Training**



**Staff
Recruitment**



**Infrastructure
Needs**



**Maintenance
Planning**

Project Management Certifications



Project management certifications are credentials that validate your knowledge, skills, and experience in managing projects efficiently and effectively (WanHow, 2023).



Why certification matters?

- **Recognition**
 - Industry acknowledgment of your expertise
- **Skill Validation**
 - Proof that you meet professional standards
- **Career Progression**
 - Opens doors to promotions, higher salaries, and new roles

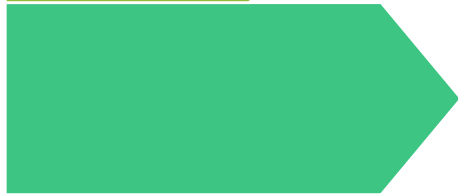
Key Certification Overview

Certification Levels



Advanced Level

Specialized project management expertise



Intermediate Level

Enhanced project management techniques



Entry Level

Basic project management skills

Entry-Level Certifications

- **Certified Associate in Project Management - CAPM** (PMI, n.d.)
 - **Focus:** PMBOK-aligned project management basics
 - **Best for:** Beginners in project/software management
 - **Requirements:** High school diploma + 23 hours of PM education



Entry-Level Certifications

- **Scrum Master Certified (SMC) / Certified ScrumMaster (CSM)**
 - **Providers:** Scrum Study / Scrum Alliance
 - **Focus:** Core Agile and Scrum principles
 - **Best for:** Entry-level Agile/Scrum roles
 - **Requirements:** None or basic training course



Scrum Master Certified

Intermediate-Level Certifications

- **Project Management Professional (PMP)**
(PMI, n.d.)
 - **Focus:** Predictive, Agile, and hybrid project management
 - **Best for:** Experienced project managers
 - **Requirements:** 3+ years experience + 35 hours PM education or CAPM



Intermediate-Level Certifications

- **Professional Scrum Master (PSM)**
 - **Provider:** Scrum.org
 - **Focus:** Progressive mastery of the Scrum framework
 - **Best for:** Agile PMs, Scrum Masters



Intermediate-Level Certifications

- **PRINCE2 Practitioner**
 - **Provider:** AXELOS
 - **Focus:** Structured, process-driven project management
 - **Best for:** UK-based professionals or PRINCE2-focused organizations



Advanced-Level Certifications

- **Agile Certified Practitioner (PMI-ACP)**
(PMI, n.d.)
 - **Focus:** Multi-framework Agile expertise (Scrum, Kanban, XP)
 - **Best for:** Agile-experienced PMs in software development



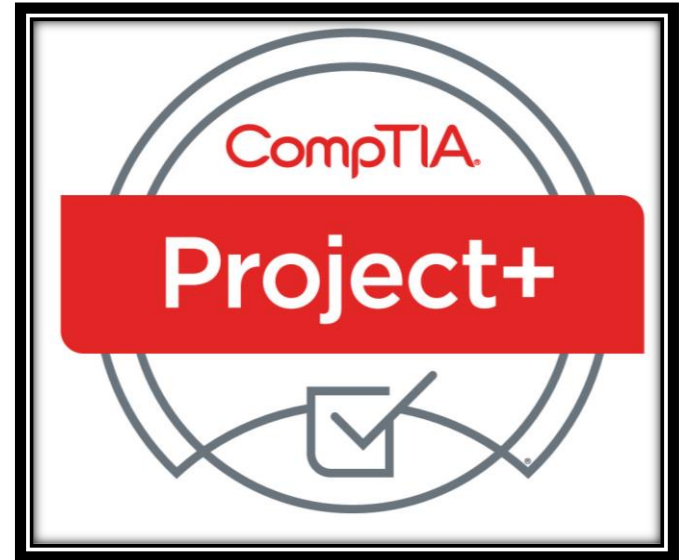
Advanced-Level Certifications

- **Certified SAFe® Agilist**
 - **Provider:** Scaled Agile
 - **Focus:** Managing Agile at scale (SAFe framework)
 - **Best for:** PMs in large, enterprise-level software environments



Advanced-Level Certifications

- **CompTIA Project+**
 - **Provider:** CompTIA
 - **Focus:** IT and software project management fundamentals
 - **Best for:** Tech professionals handling small to mid-sized projects



Which one should you choose?

Goal	Recommended Cert
Start in project management →	CAPM, CSM, PSM I
Lead software teams →	PMP, PMI-ACP, PSM II
Work in Agile/SAFe environments →	PMI-ACP, SAFe Agilist, CSM
Work in the UK/government →	PRINCE2 Practitioner
IT/software infrastructure →	CompTIA Project+

Certification Tips

Use Simulators & Mock Tests

- Practice under real exam conditions
- Identify weak areas early

Follow a Study Plan (2–3 Months)

- Break content into manageable weekly goals
- Balance theory, practice, and review time

Join Study Groups & Practice Together

- Learn from peers
- Stay motivated and accountable

Best Practices

- ✓ Clear Scope & Requirements Definition
 - ✓ Avoid scope creep by aligning early with stakeholders
- ✓ Use of Proven Methodologies & Tools
 - ✓ Choose tools and techniques that suit the project's scale and nature
 - ✓ Choose proven collaboration tools to be successful.
- ✓ Iterative Development & Feedback Loops
 - ✓ Embrace Agile or hybrid methods for continuous improvement

Best Practices

- ✓ Risk Management Planning
 - ✓ Identify, assess, and mitigate risks early in the project lifecycle
- ✓ Effective Communication Channels
 - ✓ Use collaboration platforms and set clear reporting structures
- ✓ Realistic Scheduling & Resource Allocation
 - ✓ Base plans on data, not assumptions; monitor progress regularly

Success Factors as Best Practices

- Clear Project Scope & Objectives
- Strong Leadership & Governance
- Effective Communication & Collaboration
- Agile & Adaptive Planning
- Stakeholder Engagement
- Risk & Quality Management
- Lessons Learned & Continuous Improvement

Case Study



Case Study

- **Project:** Online Learning Management System (OLMS)
- **Organization:** University X.
- **Team Size:** 25
- **Duration:** 12 months
- **Goal:** Replace outdated OLMS with a modern, mobile-friendly platform using cloud & microservices

Case Study

● Project Challenges

- **Scope Creep:** AI tutor, multilingual support, analytics dashboard
- **Agile in Name Only:** No real sprints, retros, or velocity tracking
- **Communication Gaps:** Dispersed teams, misaligned timelines
- **Lack of Risk Planning:** Ignored early warnings about cloud scalability
- **Stakeholder Confusion:** Progress reports didn't reflect actual code status

Case Study

- Best Practices

Problem	Best Practice
Scope creep	Lock core scope early, manage backlog
Fake Agile	Train & implement true Agile ceremonies
Poor communication	Time zone-friendly stand-ups, clear ownership
Testing too late	Early & automated testing (load, regression)
Stakeholder misalignment	Frequent demos + live dashboards

Strategic Takeaways

- ✓ Match Frameworks to Project Context
 - ✓ Choose Agile, Waterfall, or hybrid based on project needs and team maturity
- ✓ Adaptability Over Rigidity
 - ✓ Flexibility is essential; frameworks should support—not constrain—your team
- ✓ Certifications Enhance Competence & Credibility
 - ✓ Recognized credentials (PMP, PMI-ACP, CSM) validate expertise

Strategic Takeaways

- ✓ Continuous Learning Culture
 - ✓ Encourage ongoing education to keep up with evolving practices
- ✓ Tools & Training Go Hand-in-Hand
 - ✓ New methods require upskilling; training supports effective implementation
- ✓ Professional Growth = Organizational Strength
 - ✓ Investing in team certification and development strengthens long-term performance

Summary

- Best Practices & Tools Drive Efficiency
 - The right methodologies and technologies streamline development
- Match Frameworks to Project Context
 - No one-size-fits-all: choose what fits your team, goals, and environment
- Certifications Strengthen Competence
 - Build credibility, validate skills, and support career growth

References

1. *Bob Hughes, M. C. (2011). Software Project Management (5th ed.). McGraw-Hill.*
2. *WanHow. (2023, April 5). Which Project Management Certification is Best? Retrieved June 2, 2025, from wanhow.com: <https://www.wanhow.com/projectmanagercoach/which-project-management-certification-is-best/>*
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