Unit 3: Estimating, Planning and Risk

1. **Select and utilise an appropriate tool for planning**

According to Stellman & Greene (2008), a project plan defines the work and who will do it. It includes a statement of work, resource list, work breakdown structure, project schedule, and risk plan. The statement of work (SOW) is a detailed list of work products and who is responsible. The plan should include a list of resources with a description and availability. The schedule is created by defining a *work breakdown structure* (WBS), estimating effort, and assigning resources. A risk plan is a list of potential risks and mitigation plans. Risks should be specific, prioritised, and mitigated by altering the plan or adding tasks.

Project planning, as the Knowledge Academy (N.D.) underscores, is not merely a process in project management; it's the very foundation that steers a project from its inception to its culmination. It's a pivotal and non-negotiable step that paves the way for a project's triumph. Effective project planning entails delineating a precise scope, well-defined objectives, and specific tasks, and allocating optimal resources to minimize uncertainty and maximize performance. It also involves managing time, budget, and quality with meticulousness and responsibility.

Project planning is essential for business success, and having the right tools is critical to enhancing the process. Let's break down these tools into categories for easier understanding. First, we have project management software like Microsoft Project, Asana, Trello, or Jira. These tools help create schedules, track progress, manage tasks, and collaborate efficiently. Then, we have communication tools like Slack, Microsoft Teams, or Basecamp, which facilitate real-time communication among team members. Next, we have risk management software to identify, assess, and manage

project risks and resource management software to allocate resources efficiently. Financial and budgeting software comes in handy to create project budgets, track expenses, and manage financial resources. Document management systems facilitate document storage, version control, and collaborative editing. Risk analysis software helps model and simulate scenarios to assess potential risks and their impact on the project. Reporting and analytics tools like Tableau or Power BI enable performance dashboards and reports, while time-tracking software helps monitor time spent on project tasks and activities. Finally, integration platforms like Zapier or Integromat automate data transfer and reduce manual data entry between project management tools. Creating an effective project plan requires defining clear objectives and scope, creating a detailed WBS, setting realistic timelines, allocating resources effectively, monitoring progress and adjusting as needed (Knowledge Academy, N.D.).

2. Select and utilise an appropriate tool for estimating

Project cost estimation plays a pivotal role in project management success. It's not just about creating a budget but about creating a budget that meets financial commitments. This process involves calculating direct and indirect costs using a cost breakdown structure, and tools like Project Manager can simplify this process, enabling real-time tracking of estimated expenses and budgets (Schwartz, 2023).

Vasconcellos (2023) notes that estimating tools are vital for any project's success. They generate precise labour and materials cost estimates, effectively manage project finances, and optimise worksite operations. These tools offer numerous benefits, including faster bids, accurate calculations, and real-time data. Factors such as company size, employee access, and software hosting determine these tools' costs.

Cloud-hosted or on-premises services may have varying fees, while on-premises software typically has a fixed price.

Project managers use various tools and techniques to develop accurate cost estimates. Expert judgment, analogous estimating, parametric estimating, bottom-up estimating, three-point estimates, reserve analysis, cost of quality, and project management estimating software are some methods used (Martinez, 2010). For instance, expert judgment considers unique factors specific to the project, while analogous estimating uses historical data from similar projects. Parametric estimating uses statistical modelling to calculate cost estimates for different parameters. Bottom-up estimating summarises individual work packages, while three-point estimates use the Program Evaluation and Review Technique (PERT). Reserve analysis determines contingency reserve allocation to account for cost uncertainty. Project management estimating software includes cost-estimating applications, spreadsheets, simulation applications, and statistical tools. Vendor bid analysis compares bids submitted by multiple vendors to estimate project costs.

3. Select and utilise an appropriate tool for risk assessment.

Project managers must take full responsibility for conducting a risk analysis, identifying potential risks and determining which ones require close monitoring. Risk analysis involves using various tools and techniques to evaluate the likelihood and impact of identified risks, enabling project managers to understand the uncertainty surrounding potential risks and their impact on schedule, quality, and costs. Project management software can track real-time risks, with risk probability, impact, and exposure being the three crucial factors to consider. Whether using qualitative risk analysis, which involves expert opinions and non-statistical means, or quantitative risk analysis, which involves

statistical methods like linear regression models and Monte Carlo simulations, project managers must ensure that every risk is thoroughly analysed and managed.

Risk management tools are crucial for project development and implementation (Bridges, 2023). These tools include time-tracking software, risk data quality assessment, risk register, resource management, SWOT analysis, budget tracking, brainstorming, root cause analysis, probability and impact matrix, variance and trends, reserve analysis, and risk audit.

- Time-tracking software increases transparency, while risk data quality assessment helps identify potential risks.
- SWOT analysis helps identify external factors affecting project performance. Budget tracking predicts expenses and secures funding.
- Brainstorming assesses risks affecting business objectives.
- Risk assessment lists risks in one place, while variance and trends help monitor risks.
- Reserve analysis plans projects with contingency measures.
- Regular risk audits help identify potential problems and improve project efficiency.

References:

- Stellman, A. & Greene, J. (2008). *Applied software project management.* 1st ed. Sebastopol, CA: O'Reilly.
- Schwartz, B. (2023). *Cost Estimation for Projects: How to Estimate Accurately.* [online] ProjectManager.com. Available at: https://www.projectmanager.com/blog/cost-estimation-for-projects.
- Vasconcellos, E. (2023). *5 Best Construction Estimating Tools.* [online] Available at: https://www.business.com/articles/construction-estimating-tools/.
- Martinez, M. A. (2010). *Project Cost Estimating Tools and Techniques.* [online] Available at: https://www.project-management-skills.com/project-cost-estimating.html.
- The Knowledge Academy (N.D.). *Importance of Project Planning: All You Need to Know.* [online] www.theknowledgeacademy.com. Available at: https://www.theknowledgeacademy.com/blog/importance-of-project-planning/.
- Bridges, J. (2023). *How to Analyze Risks on Your Project - ProjectManager.com.* [online] ProjectManager.com. Available at: https://www.projectmanager.com/training/how-to-analyze-risks-project.