Project: complex, non-routine, one-time effort limited by time, budget, resources, perf specs designed to meet customer needs

Project characteristics: established objective, defined life span with beginning & end, requires participation across the org, typically involves doing sth never done before, has specific time, cost, perf reqs

Project life cycle:

Defining: goals, specs, tasks, responsibilities

Planning: schedules, budgets, resources, risks, staffing

Executing: status reports, changes, quality, forecasts

Closing: train customer, transfer docs, release resources, evaluation, lessons learned

Factors leading to increased use of PM: compression of product life cycle, knowledge explosion, triple bottom line (planet, people, profit), corporate downsizing, increased customer focus, small projects represent big problems

Project Manager: manages temporary, non-repetitive activities, frequently acts independently of formal org, marshals resources for project, linked directly to customer interface, provides direction, coordination & integration to the project team, responsible for performance & success of the project, must induce right people at right time to address the right issues and make right decisions

PM Technical Aspects: scope, WBS, schedules, resource allocation, baseline budgets, status reports

PM Sociocultural Aspects: leadership, problem solving, teamwork, negotiation, politics, customer expectations

Integrated management of projects: strategic alignment, portfolio management, PM, with org culture env wrapped around

Integration of projects with org strategy: use of selection criteria to ensure strategic alignment and project priorities (effective use of org resources); selection process that is systematic, open, consistent & balanced; all selected projects become part of portfolio that balances risk for org; portfolio management ensures only most valuable projects approved & managed across entire org; value of project not only ROI but also strategic fit & best use of org resources

Integrative PM approach benefits: provide senior management with overview of all PM activities, big picure of how org resources used, risk assessment of project portfolio, rough metric of org's improvement in managing projects relative to others in industry, linkages of senior management with actual project execution management

Portfolio Management Functions: oversee project selection, monitor aggregate resource levels & skills, encourage use of best practices, balance projects in portfolio in order to represent risk level appropriate to the organisation, improve communication among all stakeholders, create total ord perspective that goes beyond silo thinking, improve overall management of projects over time

Program: a series of coordinated, related, multiple projects that continue over an extended time and are intended to achieve a goal

Traditional PM: focus on thorough, upfront planning of entire project, requires high degree of predictability to be effective

Agile: relies on incremental, iterative dev cycles to complete less predictable projects, ideal for exploratory projects in which requirements need to be discovered and new tech tested (uncertain ablut how long, what is required, allows change in reqs), focus on active collaboration between project tem & customer reps

Traditional	Agile
Design up front	Continuous design
Fixed scope	Flexible
Deliverables	Features/reqs
Freeze design as early as possible	as late as possible
Low uncertainty	high
Avoid change	embrace
Low customer interaction	high
Conventional project teams	self-organised

Agile Details: use iterations to develop workable product that satisfies the customer and other key stakeholders, stakeholders & customers review progress & re-evaluate priorities to ensure alignment with customer needs & company goals, adjustments are made & a different iterative cycle begins that subsumes the work of the previous iterations & adds new capabilities to the evolving product

Agile Advantages: useful in developing critical breakthrough tech or defining essential features; continuous integration, verification & validation of the evolving product; frequent demonstration of progress to increase likelihood that end product will satisfy customer needs; early detection of defects & problems

Agile Limitations: does not satisfy top management's need for budget, scope & schedule control; self-organisation & close collaboration principles can be incompatible with corporate cultures; appears to work best on small project with 5–9 people, requires active customer involvement & cooperation

Agile Principles: focus on customer value, iterative & incremental delivery, experimentation & adaptation, self-organisation, continuous improvement

Project uncertainty dimensions: scope & tech **Scrum**: holistic (interconnected emphasis) approach for use by cross-functional team collaborating to develop new product, defines product features as deliverables & prioritises them by perceived highest value to the customer, re-evaluates priorities after each iteration/sprint to produce fulle functional features, phases: analysis, design, build, test

Scrum roles & responsibilities:

Product owner: acts on behalf of customer to represent interests, responsible for product backlog priorities & process selection

Development team: 5–9 people with cross-functional skillsets responsible for delivering product, sets own goals, organises itself, makes decisions

Scrum master: facilitates scrum process and resolves impediments at the team & org level by acting as buffer between team & outside interference

Scrum practices:

Sprint: time-controlled mini-project that implements specific portion of a system, 30 day time box with specific goals & deliverables, frozen scope defined from sprint backlog

Daily Scrum: daily meeting of all team members to report progress (15 min max), also called standup

Sprint final half-day review meeting: review & identify changes needed for following sprints

Sprint meetings: sprint planning, daily scrum, sprint review, sprint retrospective

Product backlog: customer's prioritised list of desired key features for the completed project, can only be changed by product owner

Sprint backlog: amount of work team commits to complete during the next sprint, developed & controlled by team

Scaling: using several teams to work on different features of large scale project at same time

Staging: upfront planning to manage interdependencies of the different features to develop, involves developing protocols & defining roles to coordinate efforts & assure compatibility & harmony