

eXtreme Programming **FORUM**



Selling Agile

Presented by

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Agenda

- What is “Agile”
- Understanding “XP”
- Selling “Agile”

What is “Agile”?

Definition

“We are uncovering better ways of developing software by doing it and helping others do it.”

Software development practice where we have come to value:

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

- Excerpt from The Agile Manifesto

What is “Agile”?

Principles

- Customer satisfaction through rapid, continuous delivery of useful software
- Even late changes in requirements are welcomed
- Working software is delivered frequently (weeks rather than months)
- Close, daily cooperation between business people and developers
- Projects are built around motivated individuals, who should be trusted
- Face-to-face conversation is the best form of communication
- Working software is the principal measure of progress
- Agile processes promote sustainable software development
- Continuous attention to technical excellence and good design
- Simplicity
- The best architectures, requirements and designs emerge from self-organizing teams
- Regular adaptation to changing circumstances

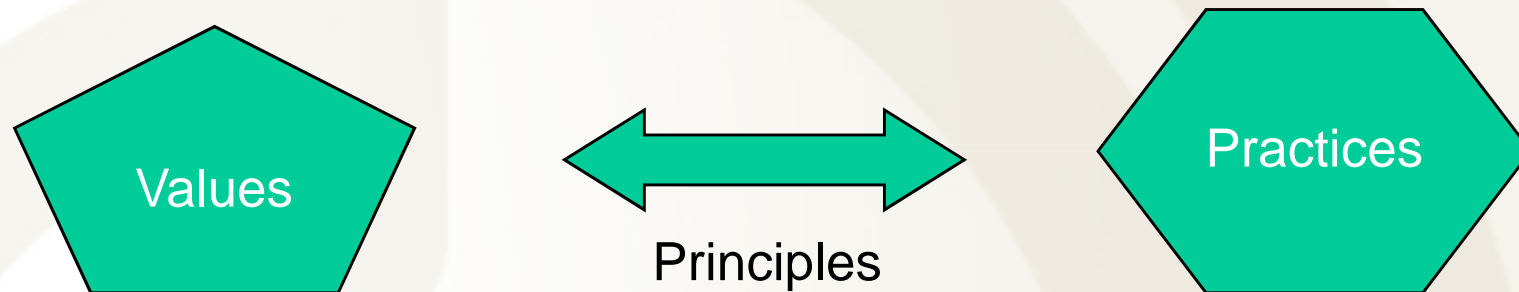
What is XP?

Definition

- XP is an agile methodology
- XP can be described as:
 - A software development discipline
 - A style of development
 - A path to improvement
 - An attempt to reconcile humanity and productivity
 - A mechanism for social change
- Good software engineering practices taken to the “extreme”
- XP aims to reduce the cost of change

What is XP?

Methodology



- XP begins with 5 core values
- Elaborated into 14 principles and again into 24 practices
- Values bring purpose to the practices
- Practices are much more concrete and bring evidence of the values
- Principles are guiding ideas and insights about a discipline

What is XP?

Values

- Communication
- Simplicity
- Feedback
- Courage
- Respect

What is XP?

Principles

- **Humanity**
 - **Economics**
 - **Mutual Benefit**
 - **Self Similarity**
 - **Improvement**
 - **Diversity**
 - **Reflection**
 - **Flow**
 - **Opportunity**
 - **Redundancy**
 - **Failure**
 - **Quality**
 - **Baby Steps**
 - **Accepted Responsibility**
- As Kent Beck puts it, "The principles give you a better idea of what the practice is intended to accomplish."

What is XP?

Primary Practices

- **Requirements Analysis and Planning**
 - Stories
 - Weekly Cycle
 - Quarterly Cycle
 - Slack
- **Design**
 - Test-First Programming
 - Incremental Design
- **Software Coding and Releasing**
 - Ten-Minute Build
 - Continuous Integration
- **Team and Human Factors**
 - Sit Together
 - Whole Team
 - Informative Workspace
 - Energized Work
 - Pair Programming

What is XP?

Corollary Practices

- **Requirements Analysis and Planning**
 - Real Customer Involvement
 - Incremental Deployment
 - Negotiated Scope Contract
 - Pay-per-use
- **Design**
 - Root Cause Analysis
- **Software Coding and Releasing**
 - Shared Code
 - Code and Tests
 - Single Code Base
 - Daily Deployment
- **Team and Human Factors**
 - Team Continuity
 - Shrinking Teams

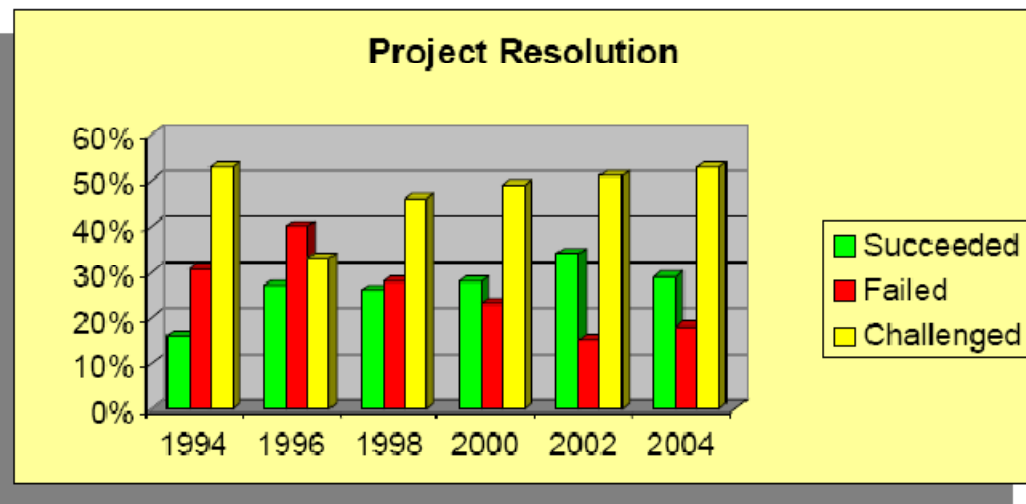
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Introduction

- Software development is inherently risky
- Continuing research, indicates very low success rates for software development projects
- Business needs to mitigate the risk of failure
- One way to do this is to hire experts and transfer the risk which may not necessarily improve the odds of success
- Contracts are typically used to define the terms of the engagement between the client and vendor

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Introduction



Standish Group

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Contracts

Traditional contract approaches create adversarial relationships



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Contracts

- Traditional contracts
 - are used to limit opportunistic behaviour
 - conventional wisdom implies that parties inevitably look out for their own interests
 - when one side wins the other side loses, **“there can be only one”**
- The “Agile” approach
 - assume the other party will act in good faith
 - transform the adversarial working relationship into a relationship of allies working toward a common goal
 - align interests and incentives
 - let the relationship limit opportunism (referred to as a relational contract)
- Contract Models
 - Fixed Price
 - Time and Materials
 - Multistage/Progressive Contracts
 - Relational Contracts
 - PS2000
 - Target-Cost

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Selecting a contract model

- All contract models create a bi-lateral monopoly
- Risk should be born by the party best able to manage it
 - Uncertainty in the domain
 - Customer
 - Uncertainty in the technology
 - Supplier

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Transaction Costs

- Selection
- Negotiation and Renegotiation
- Monitoring and Enforcement
- Billing and Payment
- Inventory and Transportation
- Cost of Diminished Communication
- Cost of Loss of Skill Base
- Cost of Poor Results

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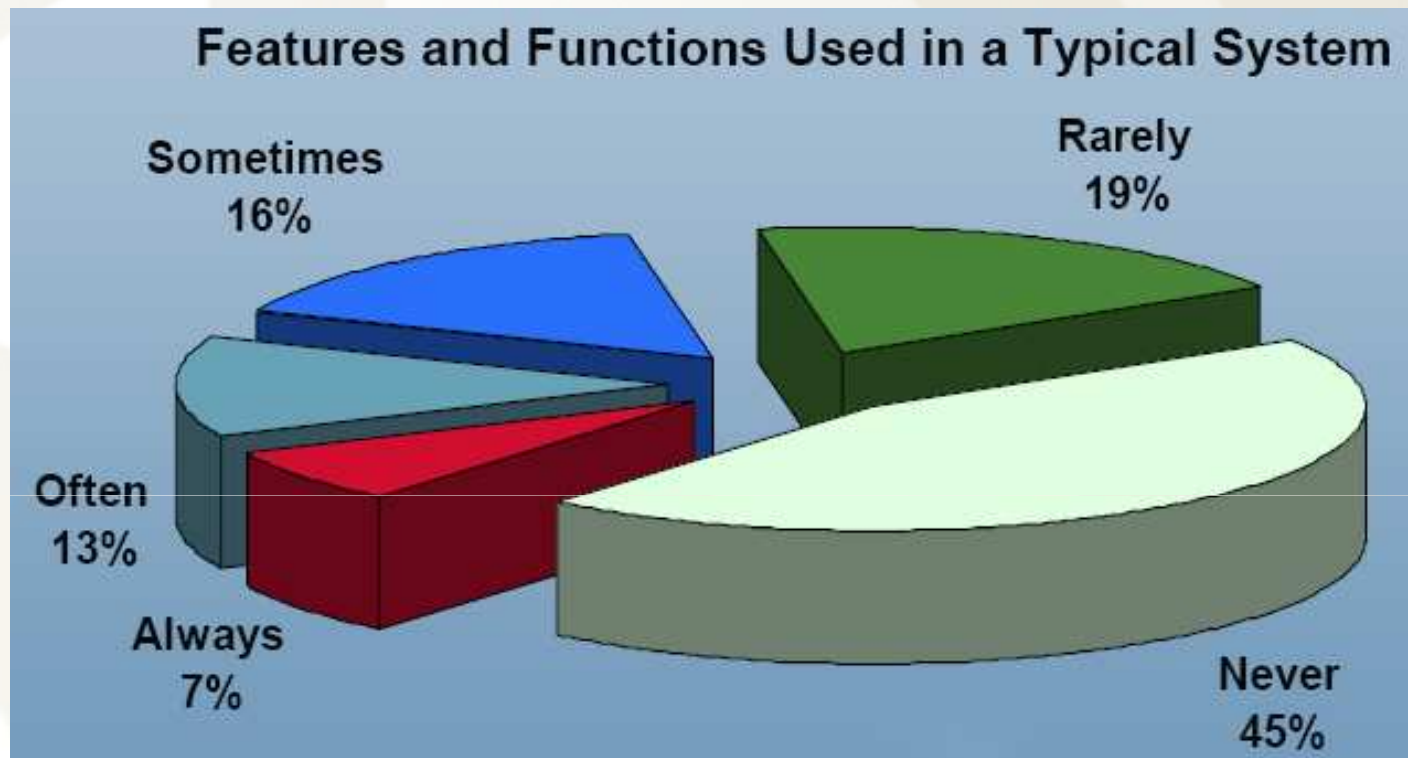
Fixed Price Contracts

- Supplier is at greatest risk
 - The task of estimation and costing is difficult
 - Customer has little incentive to accept the work as complete
- Generally does not give the lowest cost
 - Competent suppliers will include cost of risk in bid
 - Creates the game of low bid with expensive change orders
- Generally does not give the lowest risk
 - Selection favors the most optimistic *desperate* supplier
 - Least likely to understand project's complexity
 - Most likely to need financial rescue
 - Most likely to abandon the contract before completing it
- Customers are least likely to get what they really want

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Fixed Price Contracts Lead To:

- Early Scope Definition (to protect the vendor)
- Excess Scope (to protect the customer)



Standish Group, Chaos Report 2000

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Time and Material Contracts

- Customer is at greatest risk
 - Supplier has little incentive to complete the work
 - Therefore need to control supplier opportunism
- DOD T&M contracts
 - Birthplace of the Waterfall Lifecycle
 - Trust is difficult to justify in a government entity
- Traditional T&M control systems
 - Are Expensive
 - Do Not Add Value
 - Get in the way of Good Software Development
 - Do not support on-going user feedback
 - Are not tolerant of change or uncertainty

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Multistage/Progressive Contracts

- Structure
 - Start With An Umbrella or Framework Contract
 - Release Work In Stages
 - Keep Stages Small
 - Each Stage is an Iteration
 - Often Early Stages are Fixed Price
 - Scope Beyond the Existing Stage is Negotiable
- Incentives
 - Customer is at risk if supplier starts and doesn't finish
 - Supplier is at risk of sudden cancellation
 - Risks mitigation: Trust increases as risk increases

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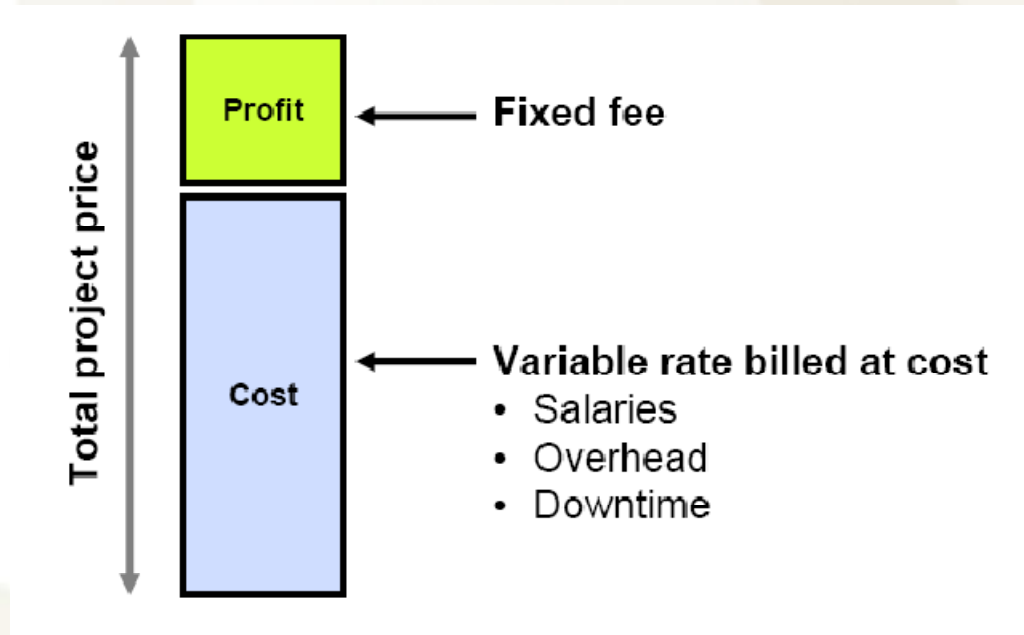
Target-Cost Contract

- The “risk burden” needs to be shared
- Target cost **includes all changes**
- Target is the **joint responsibility** of both parties
- Target cost is **clearly communicated** to workers
- Negotiations occur if target cost is exceeded
 - Neither party benefits
- Workers at all levels have clear incentives to work collaboratively, compromise, and meet the target

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Target-Cost Contract Implementation

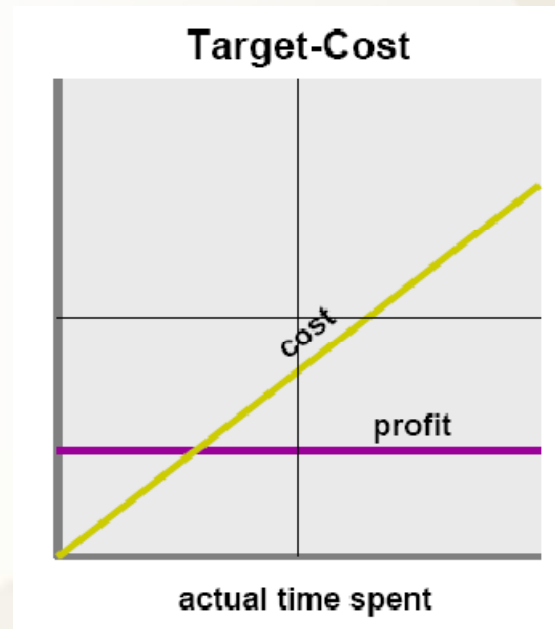
Target-cost contracts fix the profit while billing actual development time at “cost”



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Target-Cost Contract Implementation

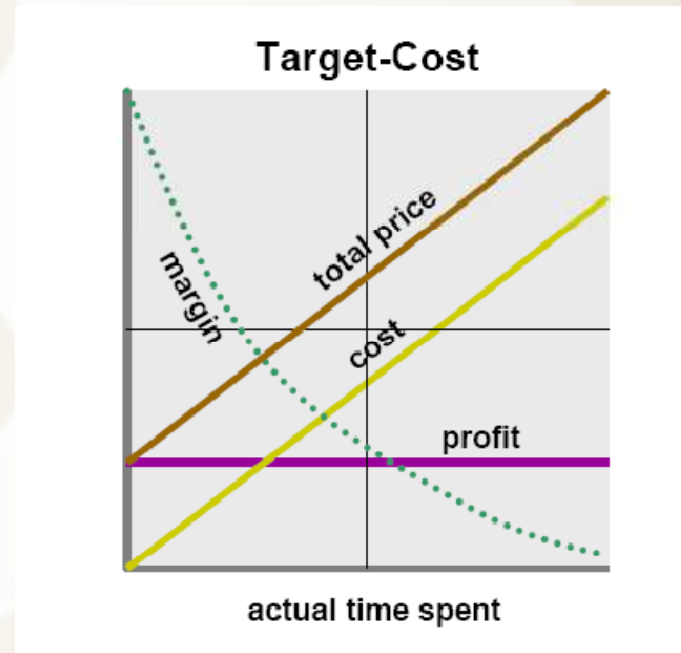
Cost varies with actual time spent, but profit is fixed regardless of the time it takes to finish



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Target-Cost Contract Implementation

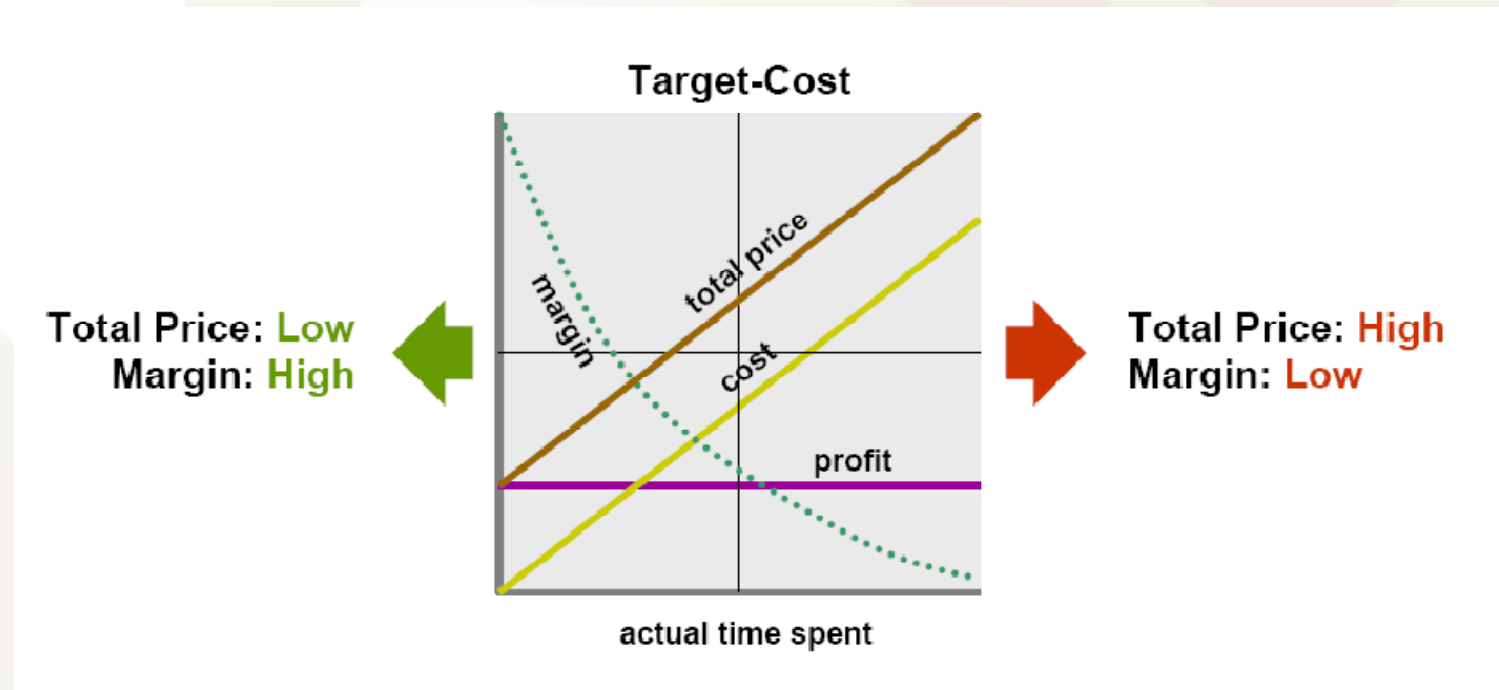
What software developers really care about is profit margins, not costs



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Target-Cost Contract Implementation

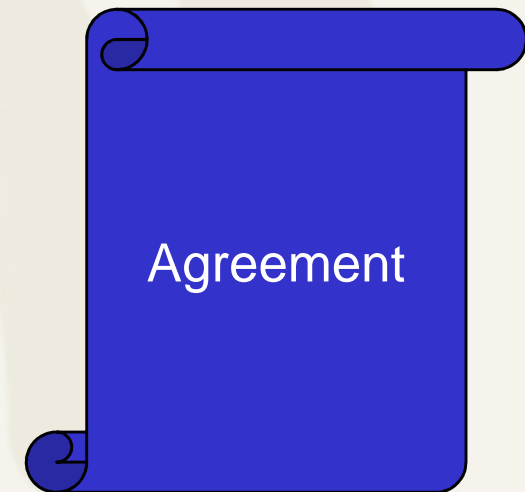
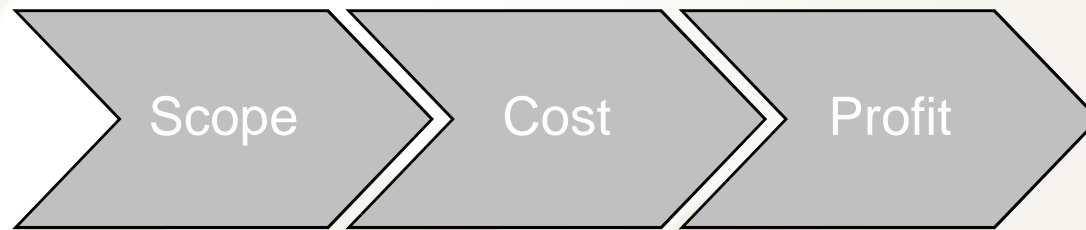
By switching the focus to margins, developer and customer interests are now aligned



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Target-Cost Contract Implementation

Target-Cost makes the sale and negotiation process easier



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Target-Cost Contract Implementation

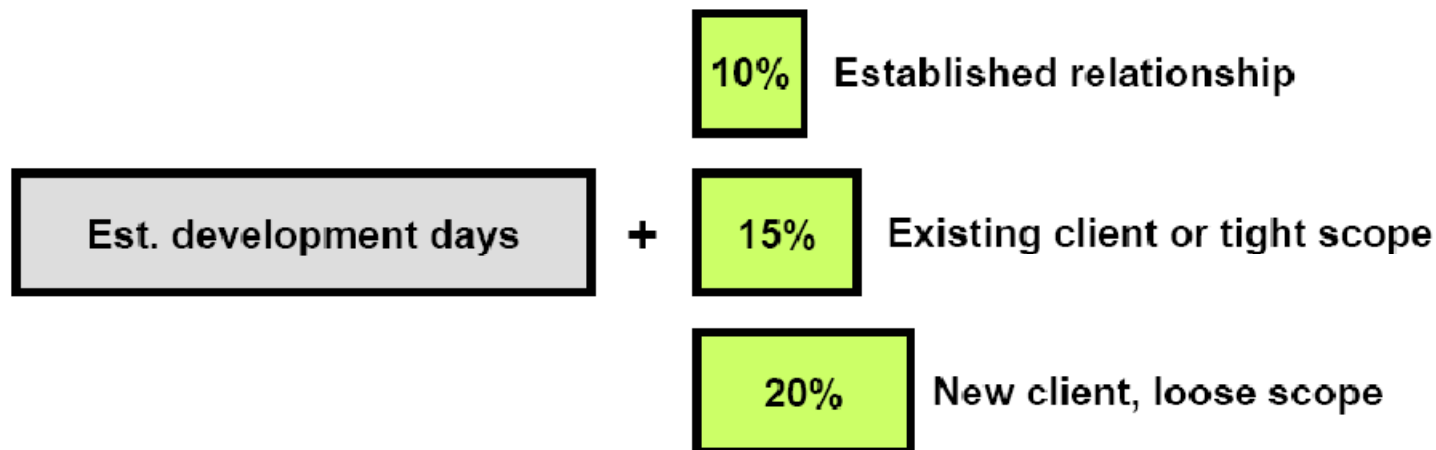
Cost is based on days of development, meetings, etc.
(profit is percentage of estimate)

Total estimated development	50 days
Meetings	6 days
Setup	4 days
Subtotal	60 days
Contingency/Buffer (20%)	12 days
Total project duration	72 days
Cost (developer/day)	R 5000/day
Total cost	R 360,000
Fixed profit (30%)	R 108,000
Total estimated price	R 468,000

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Target-Cost Contract Implementation

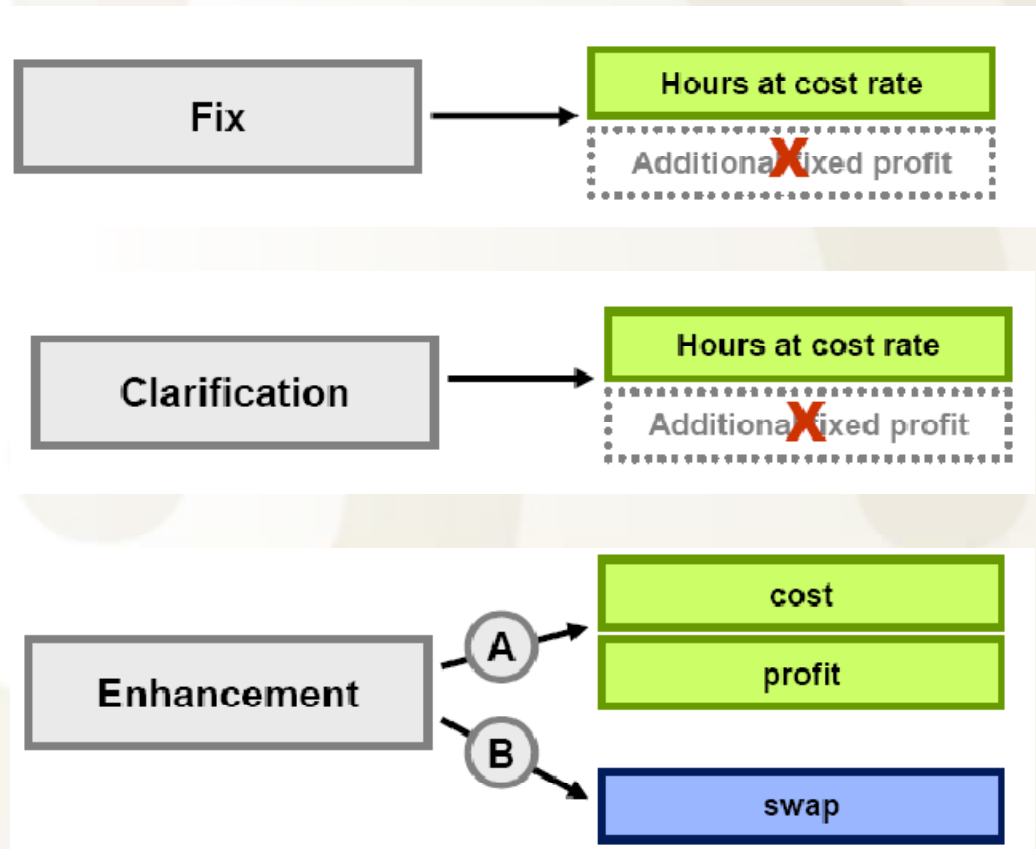
Add contingency based on the scope complexity AND the client relationship



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Target-Cost Contract Implementation

Changes are categorised as one of 3 types



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Target-Cost Contract Implementation

For enhancements, additional fixed profit is determined by recalculating days

Total estimated development	50 days	+5	55 days
Meetings	6 days	+1	7 days
Setup	4 days		4 days
Subtotal	60 days	+6	66 days
Contingency/Buffer (20%)	12 days	+1.2	13.2 days
Total project duration	72 days	+7.2	79.2 days
Cost (developer/day)	R 5000/day		R 5000/day
Total cost	R 360,000	R 36,000	R 396,000
Fixed profit (30%)	R 108,000	R 10,800	R 118,800
Total estimated price	R 468,000	R 46,800	R 514,800

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PS2000 Contract

- Developed by Norwegian Computer Society
- Used in large public IT projects in Norway
- Highlights
 - Flexible iterative model for development suited for an environment of uncertainties and risks
 - Used when it is particularly difficult to draw up a detailed specification prior to tendering
- Provides mechanisms for establishing a common understanding between customer and the developer
- Leaves it to the developer to find the best way to meet the objectives and needs of the customer

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PS2000 Contract

- Standard Contract Elements
 - Increasing efficiency of the procurement and tender processes
 - Based on documented "Best practice"
 - Tools for managing uncertainty
 - Stage by stage, iterative development model allows increasing understanding of the requirements and challenges
 - Close co-operation between supplier and customer
 - Incentives and sanctions in combination with target pricing
 - Procedures for conflict resolution with an expert as a mediator
- Standard Contract Parts
 - Part I defines the Customer and Supplier
 - Part II describes the rights and obligations of the parties
 - Part III consists of specific annexes

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PS2000 Contract

- Advantages
 - Allows for Agile Development
 - Promotes Trust
 - Has Mechanisms for Changes
 - Target Cost
 - Has target, upper limit and lower limit
 - If under cost, share savings
 - If over cost, share overrun
 - Reduces the incentive to do the wrong thing
- Disadvantages
 - Each iteration is a separate contract
 - Tends to be fixed-price like
 - Time and Materials
 - Works well only if the iterations are small

Conclusion

- Agile methods
 - Attempts to promote the development of “better” software
 - Requires careful and considered adoption
 - A willingness to challenge “status quo”
- Trust-Based Partnerships
 - Require risk sharing
 - Adapt to change and uncertainty
 - Depend on organizational policies that limit opportunism through non-contractual methods
 - Must provide motivation for everyone to work for the good of the Joint Venture
 - Almost always yield faster, better, cheaper results

References

- The Agile Manifesto, www.agilemanifesto.org
- Kent Beck, XP Explained
- Mary Poppendieck, Lean Software Development: An Agile Toolkit
- Mary Poppendieck, Agile Contracts, <http://www.poppendieck.com/pdfs/AgileContracts.pdf>
- Agile Contracts Links, http://www.agileadvice.com/archives/2007/11/agile_contracts.html
- Target Cost Contracts, Bruce Eckfeldt and Rex Madden, http://cyrusinnovation.com/downloads/agile2005_cyrusinnovation_targetcostcontracts_paper.pdf

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QUESTIONS?