

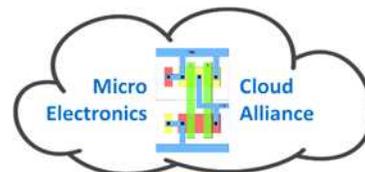
Project Management for the 21st Century



Project Management



**Project Manager must lead his team
in performing various project
activities**



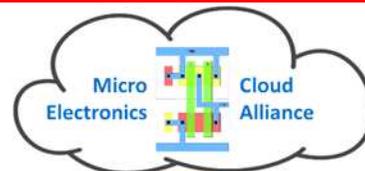
Project Management

For detailed activity planning, you have to

Break down

the

work!!!!



Project Management

The project



The project stages (milestones)



The tasks to reach a milestone (work packages)

- Ingredients**
- 1+1/3 cup (150 g) all-purpose flour
 - 1+1/2 cup (330 g) sugar
 - 4 tablespoons unsweetened cocoa powder
 - 1 teaspoon baking powder
 - 3/4 cup (170 g) butter
 - 3 fl oz (0.9 dl) boiling water
 - 3 eggs
 - 4 oz (120 g) chocolate chips (40-50% cocoa)
 - 5 oz (150 g) chopped walnuts or pecan nuts

Method

Preheat oven to 350 deg F (Gas mark 4 or 180 deg C).
Line a 13 x 9 in (33 x 23 cm) cake tin with grease proof or other non-stick paper and grease the tin. Melt the butter in a saucepan. In a bowl combine flour, sugar, cocoa powder, baking powder and vanilla extract. Add eggs, melted butter and hot water and mix until smooth. Add chocolate chips and nuts. Bake at 350 degrees F until a wooden pick inserted in center comes out clean, approximately 20-30 minutes.

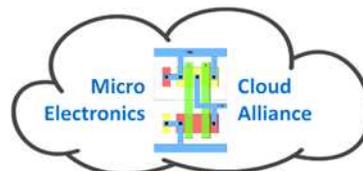
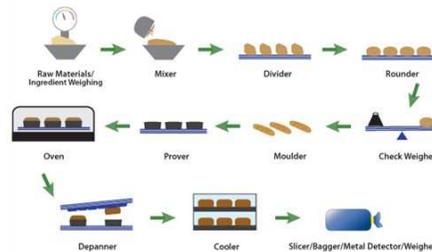
Variations

For these brownies you may instead use frosting with cocoa powder. You may add 1 tablespoon of espresso mix to brownie batter and use only semi-sweet ghiradelli chocolate chips and baking chocolate

for the best result.

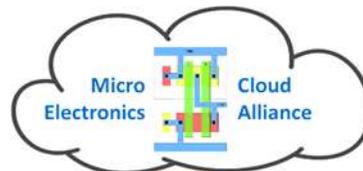
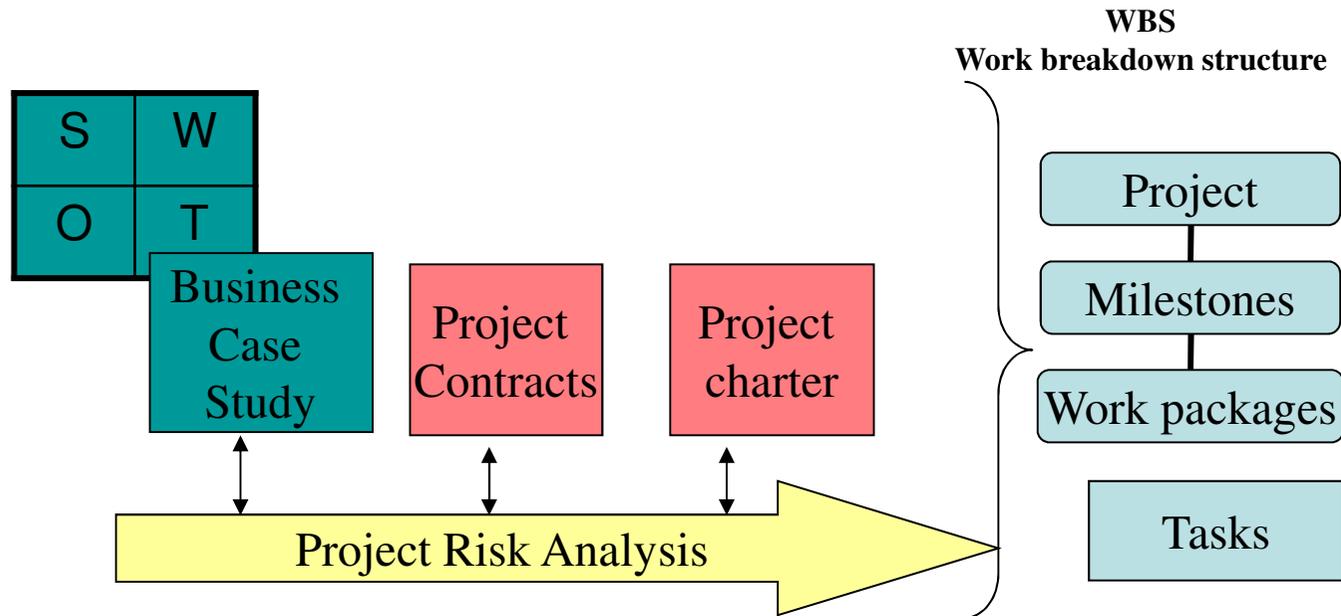
TOP
DOWN

The Baking Process



Project Management

For creating a work breakdown structure we start with our results from scoping, contracting and risk management



Project Management

There are 2 main approaches of defining a Milestones:

- The object oriented approach : Focusing the core **components** of your project.



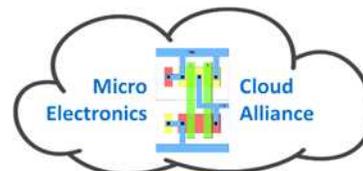
The flan
base

The cream
filling

The
chocolates

The
icing

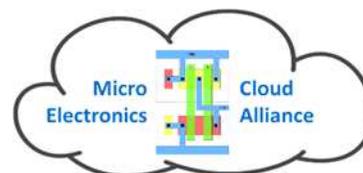
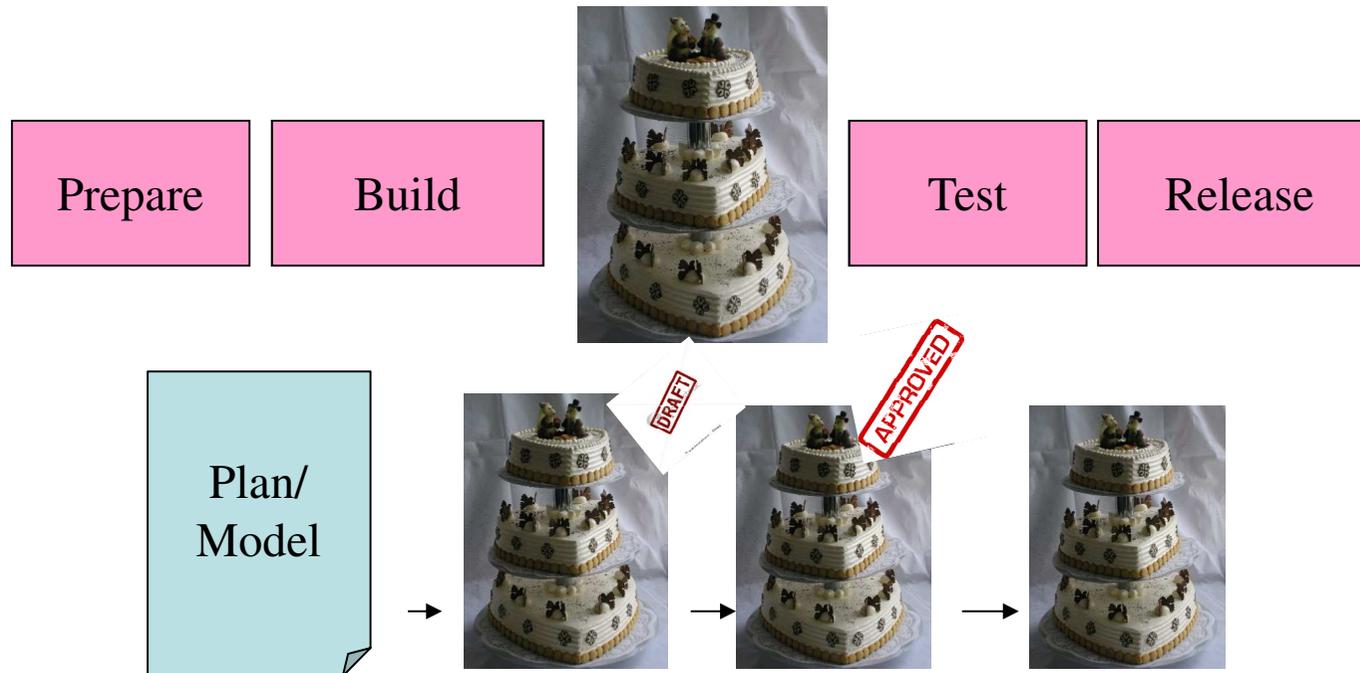
The
final cake



Project Management

There are 2 main approaches of defining a Milestones:

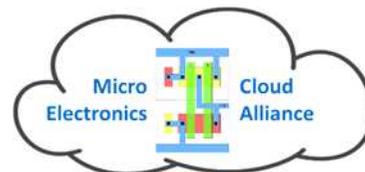
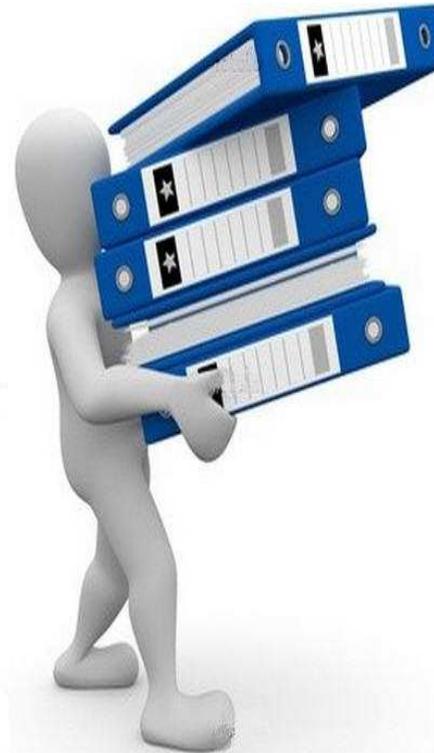
- The object oriented approach : Focusing the core phases of your project.



Project Management

What is a workpackage

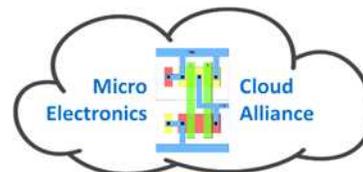
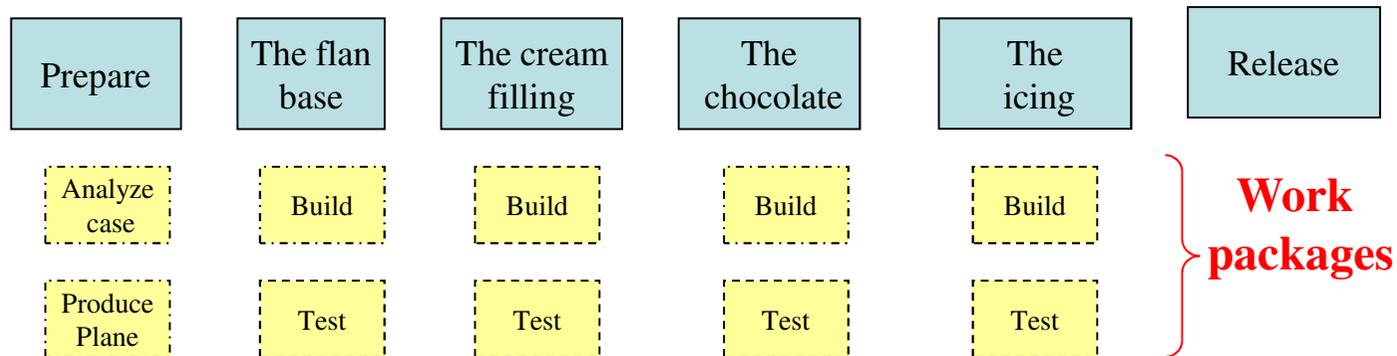
- A workpackage is a bundle of detailed tasks
- In contrast to milestones, work packages are time consuming
- A work package must be executed in order to reach a certain milestone
- For reaching one particular milestone multiple work packages could be defined
- One particular work package can serve more than one milestone



Project Management

There are 2 main approaches of defining a Milestones:

- The object oriented approach : Focusing the core **components** of your project.

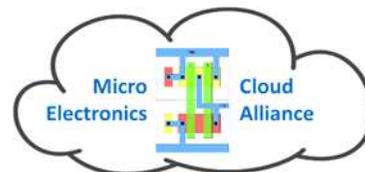


The glue in management is called coordination

Whenever we split a thing in parts we need some glue instruction to bringing it together

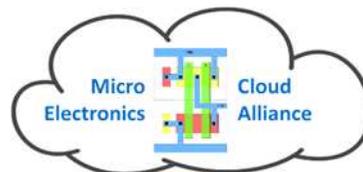


- Whenever we distribute work and delegate tasks we produce a need for coordination!
- If original task = 100% -distributed task – 100% (with x% extra effort for coordination involved)
- Coordination keeps the bird's eye perspective (supervision), solves conflicts and guarantees a joint result
- A project schedule (plan) is an instrument for coordinating the project

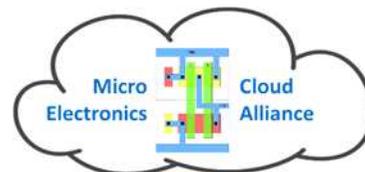
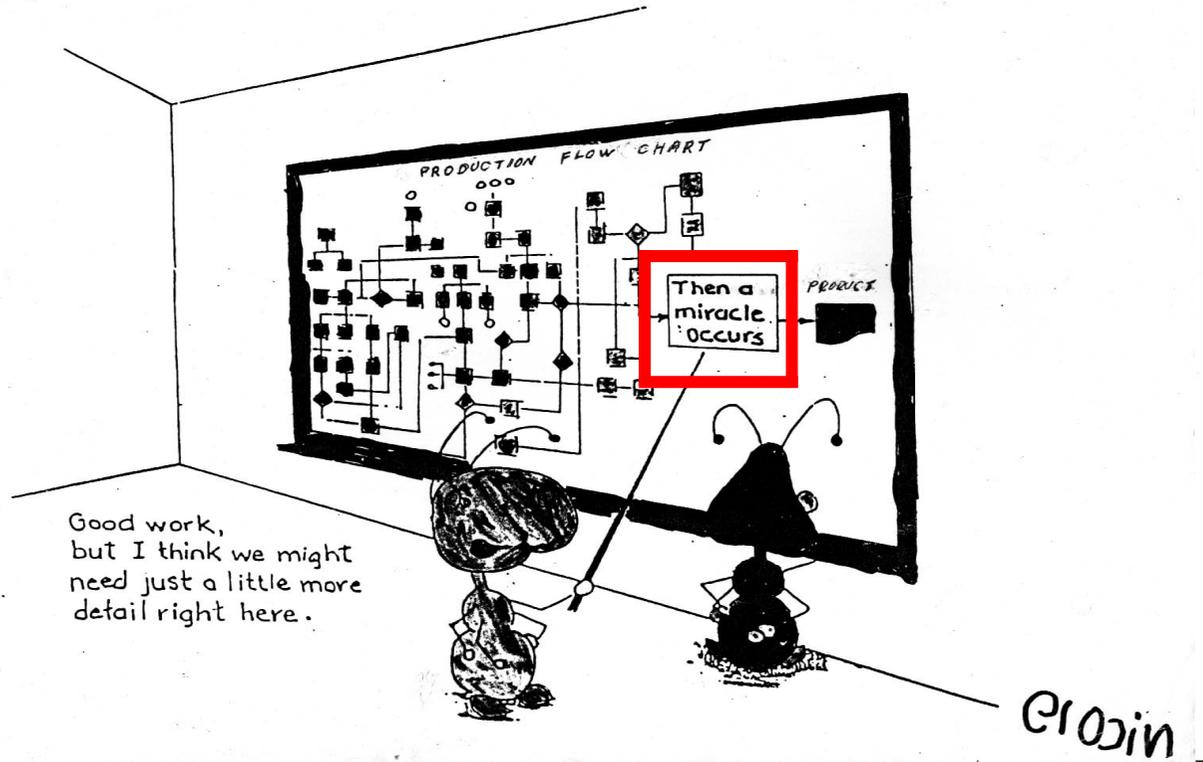


...and how to translate it into a tabular WBS

1. Concept
 - 1.1 Evaluate current system
 - 1.2 Define requirements
 - 1.2.1 Define user requirements
 - 1.2.2 Define content requirements
 - 1.2.3 Define system requirements
 - 1.2.4 Define server owner requirements
 - 1.3 Define specific functionality
 - 1.4 Define risks and risk management approach
 - 1.5 Develop project plan
 - 1.6 Brief Web development team
2. Web Site Design
3. Roll Out
4. Support



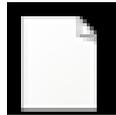
Project Management



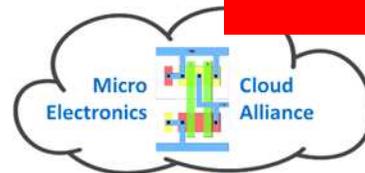
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After we know the WBS:

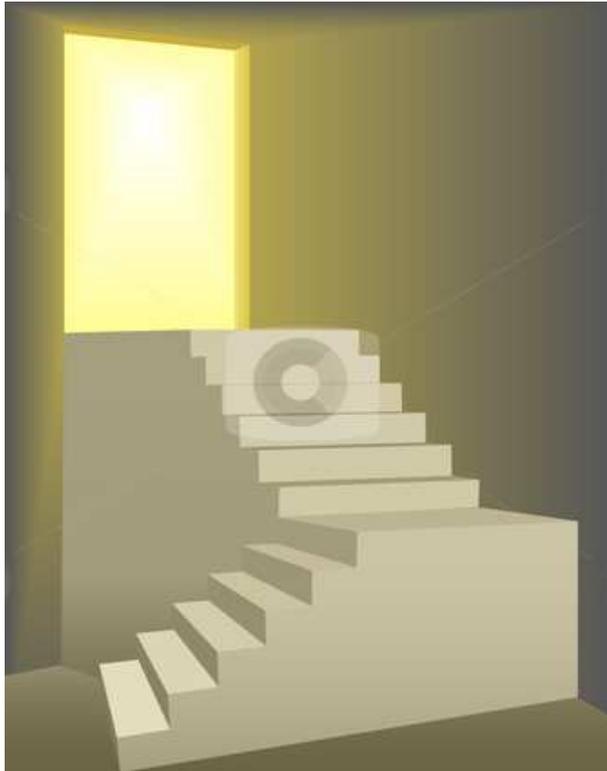
**Let's create the
Schedule!!!!**



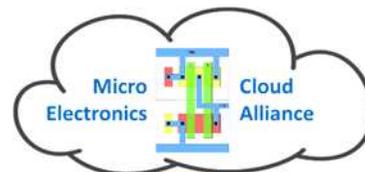
Test Your Awareness.....flv



Project Management



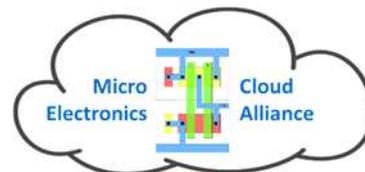
„The way to project success is never clean and easy. Wrong explanations based on a lack of understanding and unrealistic estimates are the most important reasons for project failure!“



Project Management

When adding resources won't enhance productivity:

100 guys might be able to dig
100 times as fast as 1 guy...BUT



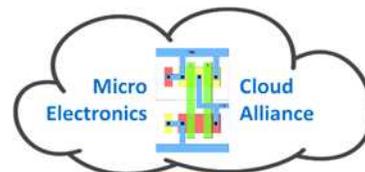
Project Management

The bearing of a child takes nine months, no matter how many women are assigned



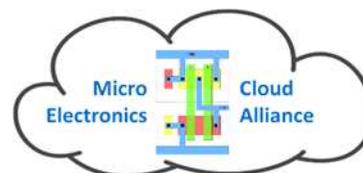
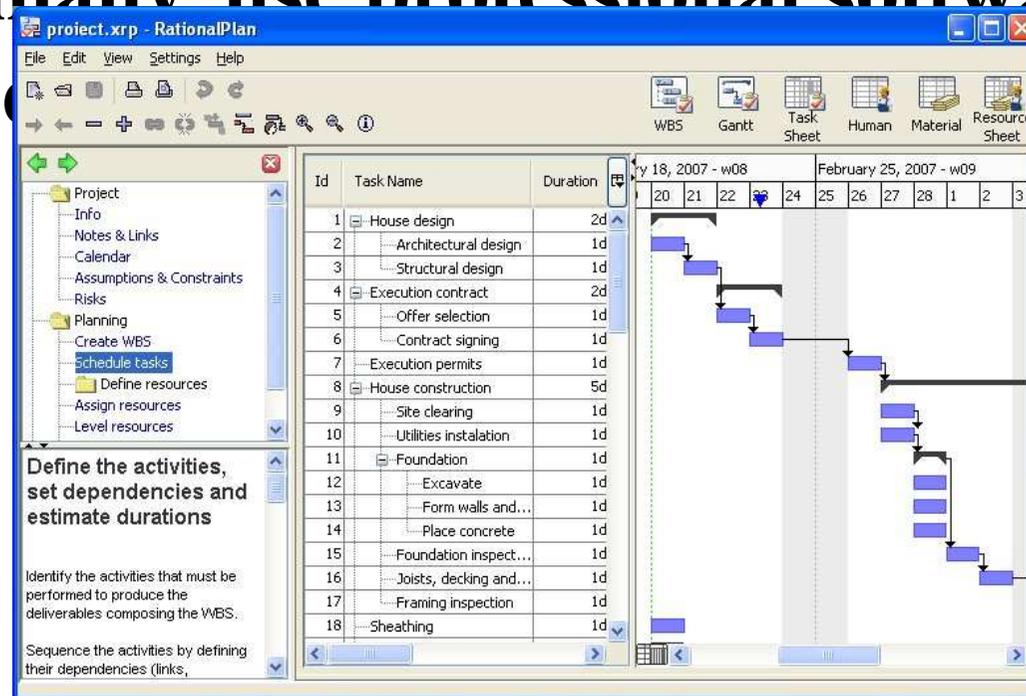
It is in the nature of some tasks that they cannot be speeded up!

- Tasks which are highly individual (either physically or intellectually)
- Tasks which are inevitably sequential, which need predecessors results



Project Management

Finally use professional software to

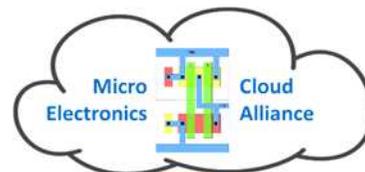


Project Management

But always keep in mind that a

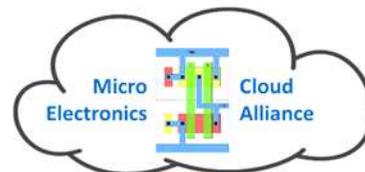


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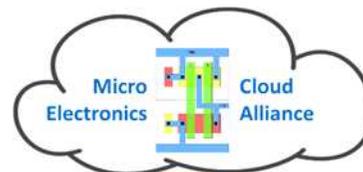
Project Monitoring and Controlling

Management is a process of achieving organizational goals through engaging in the four major functions of :



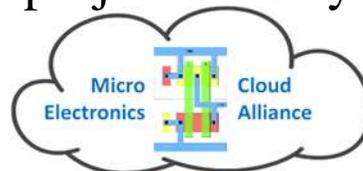
Project Monitoring and Controlling

- List several tasks and outputs of
 - project monitoring and controlling,
 - and describe outputs common to all knowledge areas.
- Discuss performing integration change control
 - as part of project integration management
 - and how to use earned value management.
- Explain the importance of
 - scope verification, scope control, and accepting deliverables.
- Describe the schedule control process and schedule performance measurement tools,
 - such as tracking Gantt charts.
- Discuss tools and techniques
 - to assist in cost control.



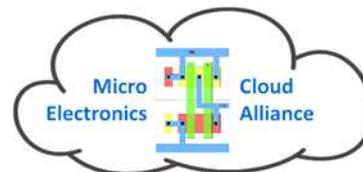
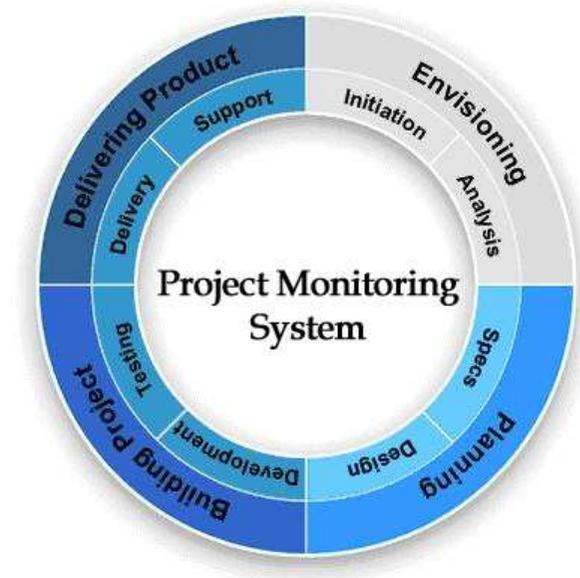
Project Monitoring and Controlling

- Main tasks include:
 - Monitoring and controlling project work,
 - which involves
 - collecting, measuring, and disseminating performance information
 - » as well as assessing measurements
 - and analyzing trends
 - » to determine what process improvements can be made.
 - Performing integrated change control,
 - which involves identifying, evaluating, and managing changes
 - throughout the project's life cycle.



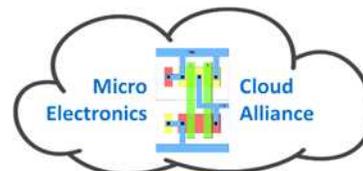
Project Monitoring and Controlling

- **Earned value management (EVM)**
 - is a project performance measurement technique
 - that integrates scope, time, and cost data.
 - Given a baseline, project managers and their teams can determine
 - how well the project is meeting scope, time, and cost goals
 - by entering actual information
 - and then comparing it to the baseline.
 - The baseline information includes:
 - Scope data (WBS tasks)
 - Time data (start and finish estimates for each task)
 - Cost data (cost estimates for each task)
- Note that you can use earned value management
 - at either a detailed or a summary level.



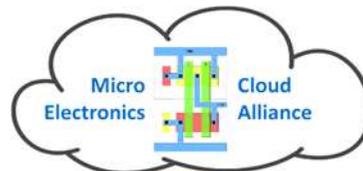
Monitoring and Controlling Tasks for Project Time Management

- The main monitoring and controlling task performed as part of project time management
 - is **schedule control**.
 - delivering projects on time
- Project managers often cite delivering projects on time as one of their biggest challenges,
 - because schedule problems often cause more conflict than other issues.
- During project initiation, priorities and procedures are often most important,
 - but as the project proceeds, especially during the middle and latter stages of the project,
 - schedule issues become the predominant source



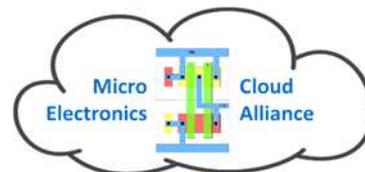
Project Monitoring and Controlling

- Canadian Imperial Bank of Commerce (CIBC) provides an excellent example of successfully controlling the schedule for a large information technology project in the banking industry.
 - CIBC transformed 20,000 workstations in 1200 different financial branches in just one year.
 - It created a Web-based tool to enable large, geographically dispersed teams to access information simultaneously.
 - Each of the 1200 sites had 75 milestones to track, including the baseline, latest plan, and actual finish dates, resulting in 90,000 data points.
 - According to Jack Newhouse, the company's director of application support,
 - CIBC's Web-based tracking tool “was a critical component to success....Accurate, timely data was an invaluable management tool.”



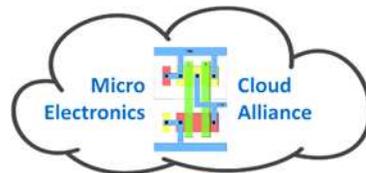
Exercise

- Estimate how long it will take to go to the corner and flag a taxi
- Winner (closest to actual time without underestimating) gets 5th Discipline Fieldbook
- If you underestimate – you have to join in in singing a verse of O Canada at the end of the seminar



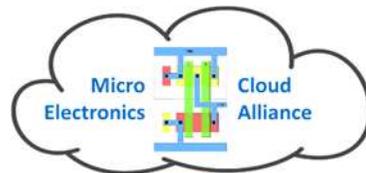
Agenda

- Projects Fail
- The Reasons Projects Fail
- Good News
- Toward a New Solution
- The 8-fold Path
- Questions and Answers



Projects Fail

- Firearms Registry
- Standish Group (1995)
 - 31.1% cancelled before complete
 - 52.7% cost more than 189% over original estimates
 - Only 16.2% of projects completed on time and on budget
 - 48% of executives feel more failure now than earlier

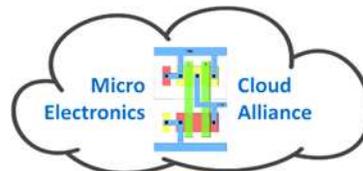


The Reasons Projects Fail

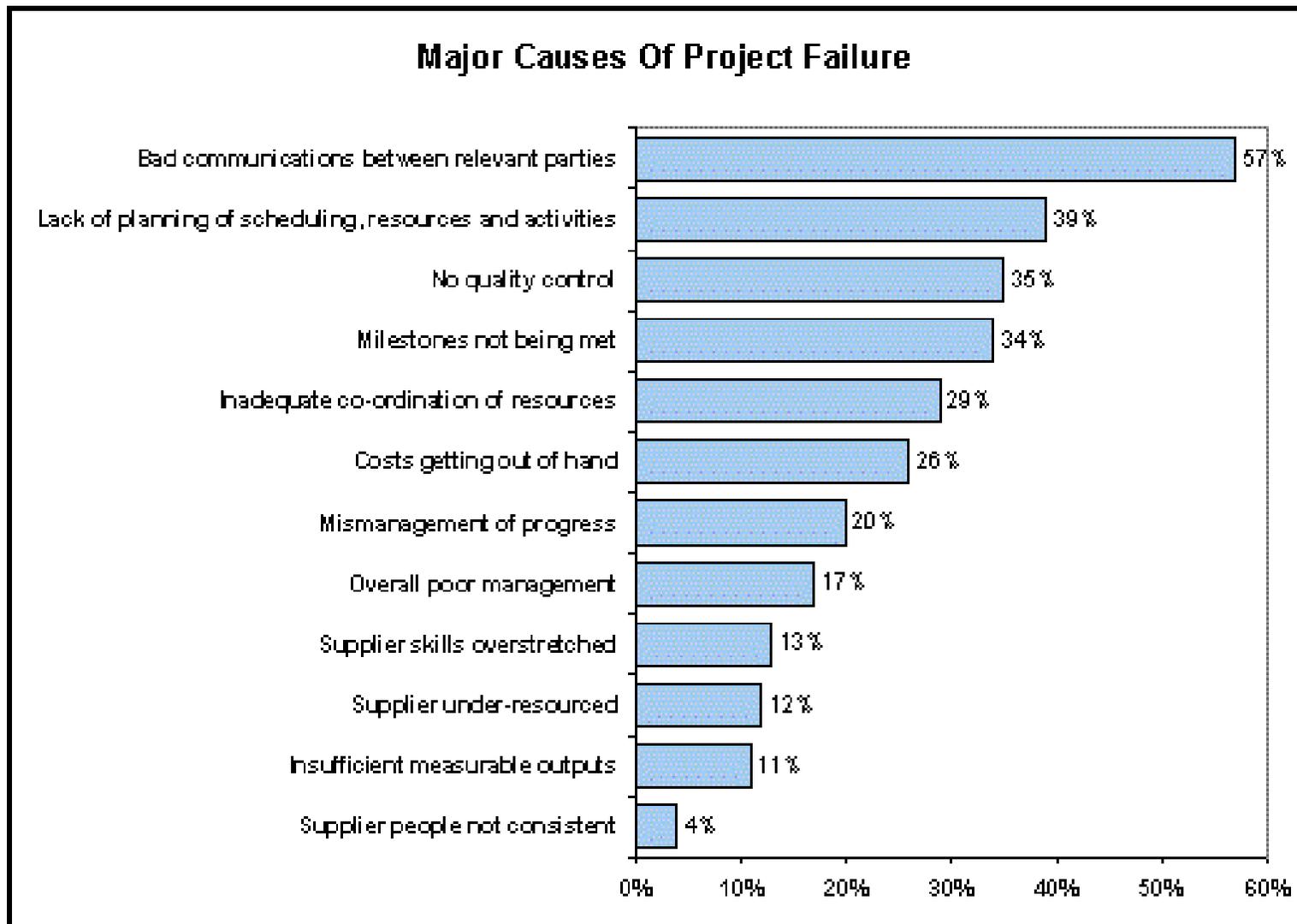
1. Lack of User Inputs 12.8%
2. Incomplete Requirements & Specifications 12.3%
3. Changing Requirements & Specifications 11.8%
4. Lack of Executive Support 7.5%
5. Technology Incompetence 7.0%
6. Lack of Resources 6.4%
7. Unrealistic Expectations 5.9%
8. Unclear Objectives 5.3%
9. Unrealistic Time Frames 4.3%
10. New Technology 3.7%

Other 23.0%

OASIG 1995



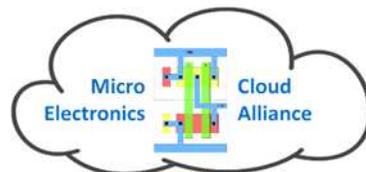
Or, depending on who you listen to...



These factors change depending on who you ask and seem to be symptoms

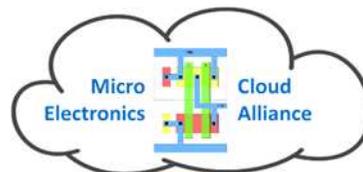
Versus

Maybe there's something wrong with our underlying PM Methods



Why Projects Fail

- Most methods take divide and conquer approach
 - lose sight of objective
 - Who's ever taken a look at a project plan and visualized one task trading for another without making actual changes
 - Statistical Variance
 - Statistics does not predict individual estimates it predicts over a series of estimates (aggregate)
 - Common
 - Special
 - While contingency is added locally instead of at project level
 - no way to recoup over and under delivery

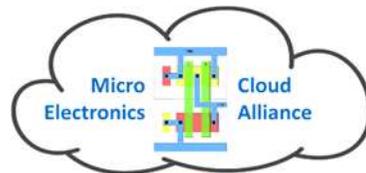


The Good News

Raise your hand if you've ever heard of a successful project

15 % of projects are successful

Projects can be successful.



The Good News

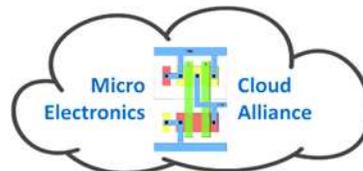
BUT

Project Success Factors

1. User Involvement 15.9%
2. Executive Management Support 13.9%
3. Clear Statement of Requirements 13.0%

Standish Group

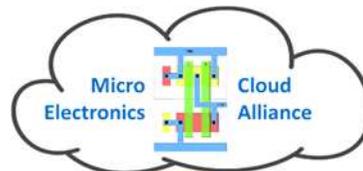
None of the top three deal with PM processes!



Toward a New Solution

“Project Delivery System”

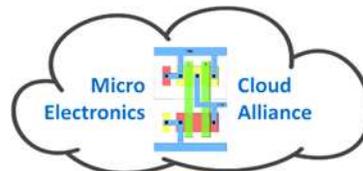
- Goal-oriented
- Open
 - has / requires external inputs
- Complex
 - uncertainty,
 - many requirements, technically and from business perspectives
- Dynamic
- Non-linear cause-effect relationships



Toward a New Solution

- **Current Project Delivery System**
(PMBOK, Prince II and ISO)
 - Starting point with some flaws
 - Based on PERT and CPM – from '40's
 - Critical Path Method – neglects resources
 - Risk Management includes risk in all tasks
 - Measurement based on Cost vs Throughput

If it didn't work you weren't detailed enough

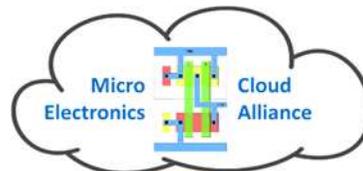


Toward a New Solution

Systems Thinking (aka Systems Dynamics)

Jay Forrester “Industrial Dynamics”, 1961 MIT

- Perspective of whole and how parts interact
- Tools for mapping dynamic complexity
 - Causal loop diagrams
 - Stock and Flow
- Vocabulary with respect dynamic complexity
 - Reinforcing and balancing loops (vicious cycles / thermostat)
 - Limits
 - Delays...

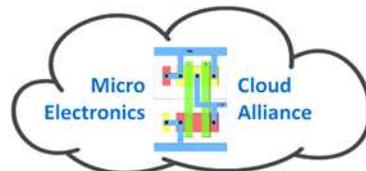


Toward a New Solution

System Thinking

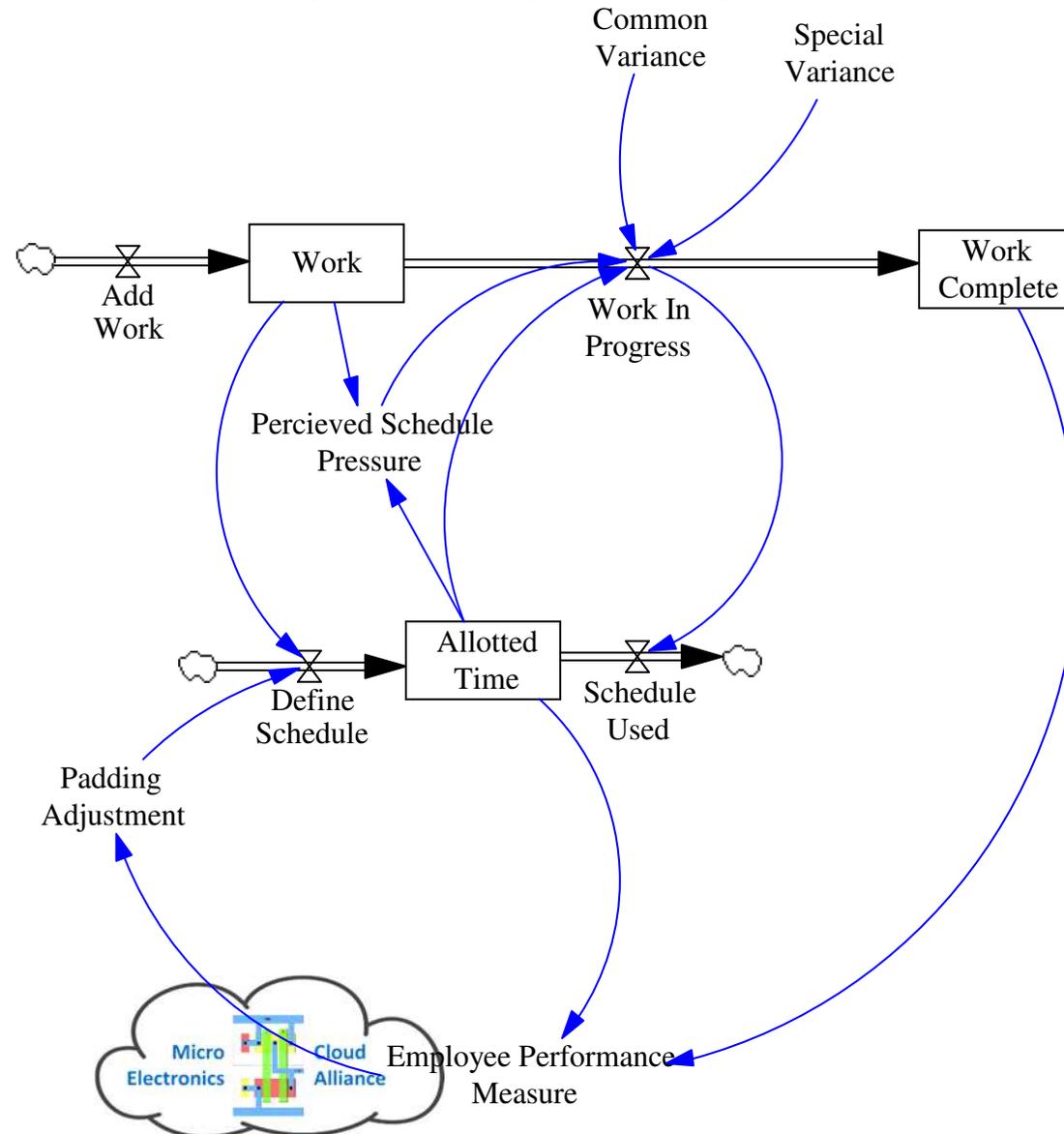
- Process
 - Specify Issue (dynamic, holistic thinking)
 - Construct Hypothesis / model (causal relationship thinking)
 - Test Hypothesis / model (scientific thinking)
 - Implement Changes

Model reality to understand a system's behaviour
not specific performance



Hypothesis and Stock and Flow Diagram

Hypothesis: Excessive task estimate padding decreases project delivery efficiency

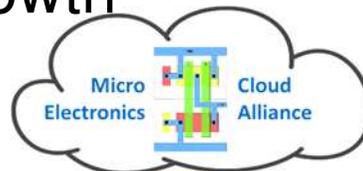


Toward a New Solution

Balanced Scorecard

Robert Kaplan, David Norton, "The Balanced Scorecard", 1996

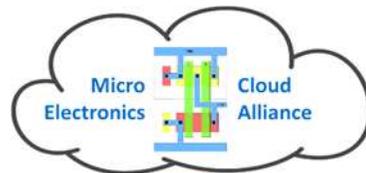
- System for tracking implementation of strategy
- A focus on financial measures creates short-term and conflicting goals
- Look at organizational performance based on 4 perspectives
 - Financial
 - Customer
 - Internal Process
 - Learning and Growth



Toward a New Solution

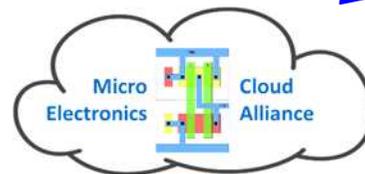
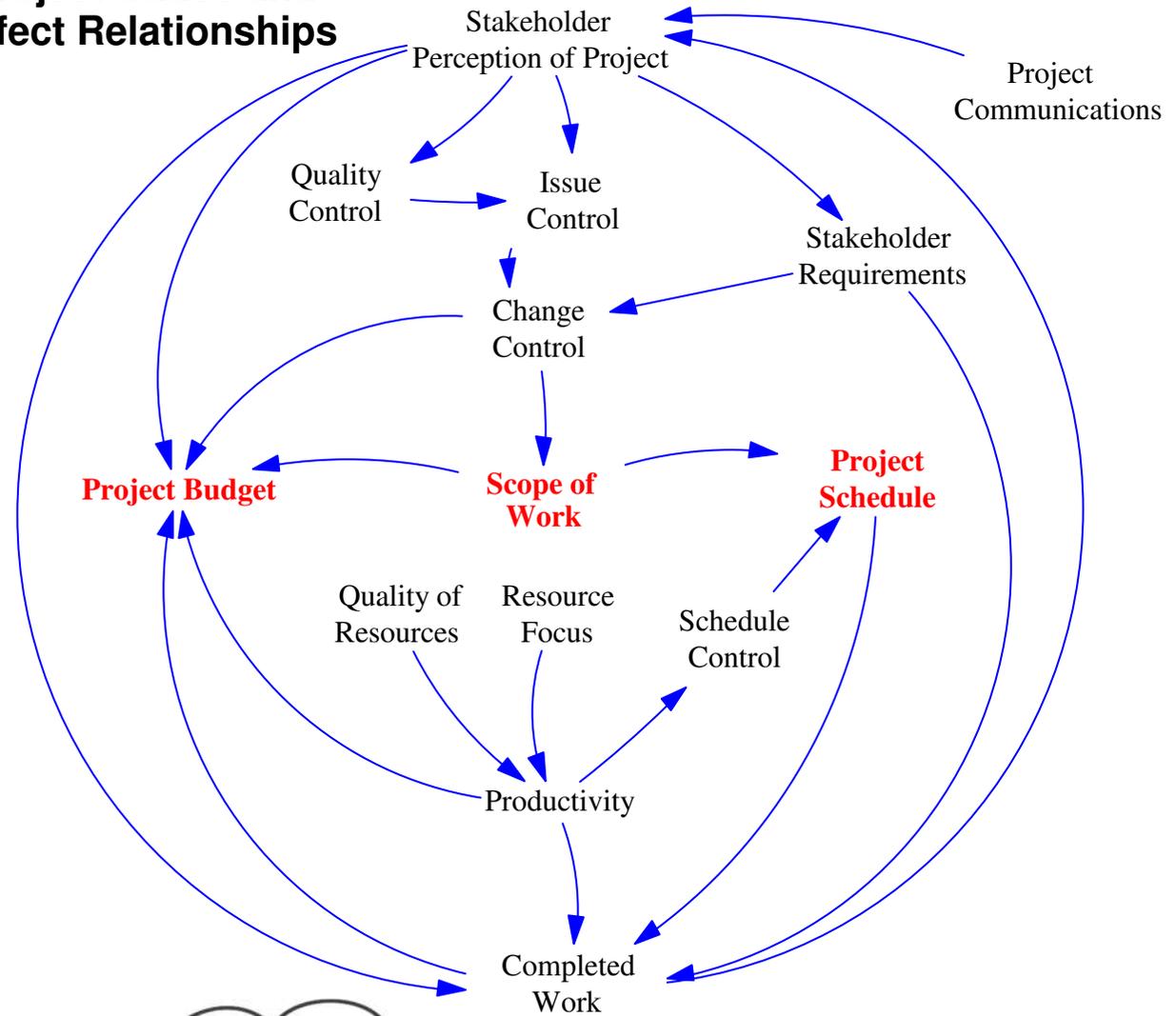
Balanced Scorecard

- Map the cause-effect relationships that drive your business
- Develop strategic objectives and 15-25 corresponding measures that determine your success in achieving those objectives
- Use mix both Lagging and Leading indicators



Project Cause and Effect Diagram

Project Cause and Effect Relationships



Project Balanced Scorecard

Squalis Project Balanced Scorecard										
Strategic Objective	Strategic Measures		Responsibility	Targets For Month	Actual from Month	Index to Target	Targets for Next Month	Opportunity Risk		
	Performance Drivers (Leading)	Outcomes (lagging)						Red	Yellow	Green
Customer										
Build a Positive Stakeholder Perception of Project	one-to-one hours spent/month/stakeholder	Customer Complaints	PM PM / Relationship Project Team					1	0	1
Clearly Define and Meet	Average Grading from Monthly Customer Satisfaction	Change Requests	PM / BA					1	0	0
Provide a Solution That Addresses Requirements	Sign off on Requirements Definition	Change Requests Identified Scope Issues	PM / BA					0	1	0
		Solution Meets Business Requirements	Team					1	0	0
		Part Month Feedback results	PM / BA					0	1	0
Learning										
Use appropriate resources on projects		Years' experience / required skills \$ of differing specialties	PM					0	1	0
Provide an Excellent Work Environment	Employee Satisfaction Survey results		PM					1	0	0
Align Personal and Project Goals	Number of Concurrent Strategic Job Offers	Turnover	Resource manager					0	1	0
		Forced Staffing measures	PM					1	0	0
Internal Business Process Perspective										
Deliver High Quality	Variance from plan - per period	Percent variance total	All					1	0	0
Deliver on Time	Critical Chain Buffer Trend	Buffer Remaining per chain completed	All					0	1	0
	Feeding Buffer Trend	EVA	All					0	1	0
Manage Project Scope Effectively	Issues to Change Request to Change ratio	Initial Project Estimated Days / Final Project Completion Days	Service Offering Mgr.					0	1	0
		Outstanding Issues / Identified Issues						1	0	0
Financial Perspective										
Maintain Control of Budget	Cost Buffer Trend	BCWP	All					0	1	0
Achieve Profitable Delivery	Length of invoicing cycle	Remaining Cost Buffer	Team					0	1	0

Summary of Results: Out of a Total of 29 Measures:

7 9 13

Toward a New Solution

Critical Chain Project Management / Theory of Constraints

Eli Goldratt "The Goal"

- All systems have one (at most two) constraints that limit throughput
- Weak Link on a Chain
- Optimizing whole means some parts will be under-utilized

Toward a New Solution

Critical Chain Project Management / Theory of Constraints

- 5 Focusing Steps

- Identify the constraint
- Decide how to exploit the constraint
- Subordinate everything else to the above decision
- Elevate the system's constraints
- New Constraint?

Toward a New Solution

Constraint in Projects is Longest Time to Deliver

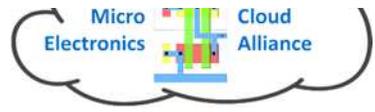
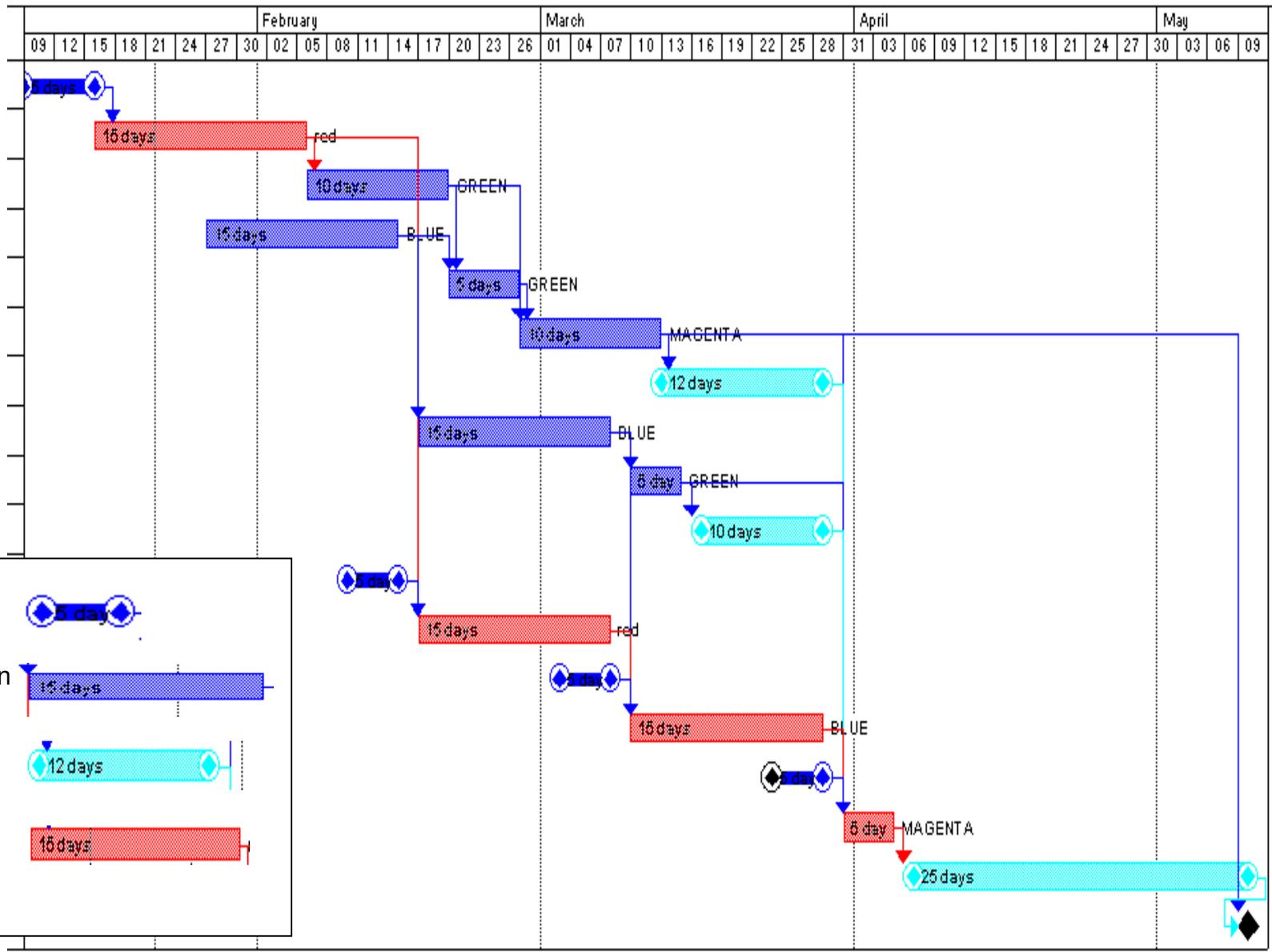
- Step 1: Identify the Constraint:
Critical Chain (Critical Path + Resources)
- Step 2: Decide How to Exploit:
Current Reality
 - Does not include resource as constraint
 - Current Includes Risk in All Tasks
 - Statistically invalid, leads to Parkinson's Law
 - Does not allow for recovery of delivery ahead of schedule

Toward a New Solution

Constraint in Projects is Longest Time to Deliver

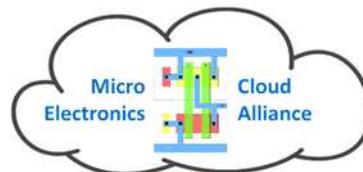
Solution: Critical Chain Project Management

- Aggregate Risks into Buffers
 - Simplifies reporting
 - Reduces delivery time by allowing for statistical variation (aggregates padding)
 - Removes measures on individual tasks
- Step 3: Subordinate:
Critical Chain protected from feeding paths by building in buffers



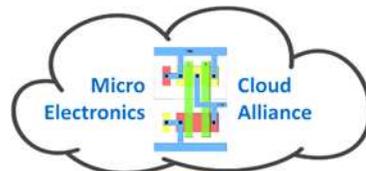
The 8-Fold Path

1. Think Holistically - bridge detail and overall view
 - Systems Thinking
 - Combined with tight issue management
2. Manage Proactively
 - Balanced Scorecard and Critical Chain Buffers
3. Clearly Define the Problem
 - Systems Theory
4. Clearly Define the Solution
 - Current design methods



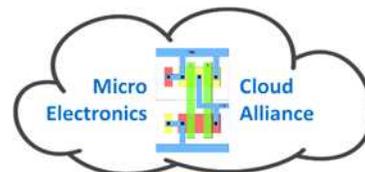
The 8-Fold Path

5. Group Uncertainty into Buffers
 - Maximize resource usage for project not for specific task
 - Manage Critical Chain buffers
6. Simplify Status Reporting
 - Dashboard based on Critical Chain buffer and Balanced Scorecard
7. Align Your Team
 - Identify Personal and Group measures / scorecard targets
 - Measuring success by outcome
8. Constantly Sell The Project - focus on stakeholders
 - Constant sale and measures of stakeholder buy in via surveys



The holistic view of Systems Thinking, Balanced Scorecard and the Theory of Constraints / Critical Chain help concentrate effort where it should be – delivering the project on-time and on-budget.

We've introduced the theories at a high-level and provide some resources for further investigation.



Exercise

- Results:
 - Actual Time: 3minutes 45 seconds
 - Average Estimated Time: 13.2 minutes
 - Standard Deviation: 7.06
 - Mean: 11.5

