


# Strategic Resource Planning at Ericsson Research Canada



**ERICSSON**

**Eduardo Miranda**

**Enterprise Performance**

**PMI Global Congress 2003**

# Ericsson Worldwide

- Present in more than 140 countries
- International operations for more than 120 years
- R&D centers worldwide
- Leader in mobile infrastructure
- Listed on major international stock exchanges
- Net sales 2002: SEK 145.8 billion
- 60,000 employees

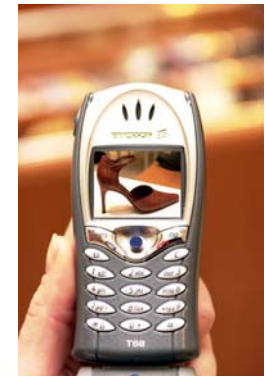
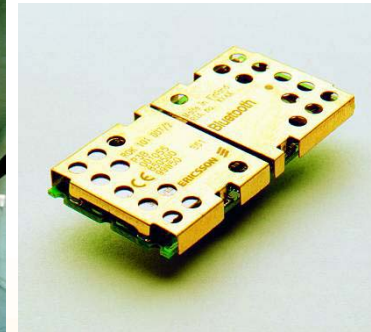


# The Swedish Telecommunications Pioneer

- Company founded in 1876 by Lars Magnus Ericsson
- First export orders in 1881
- Trademark registered in 1894
- Manufacturing abroad in 1897



# Ericsson Products



PMI®  
Global Congress  
EUROPE 2003

# Ericsson Research Canada

- 150M US\$ in R&D investment in 2002
- Ranked 5th in overall R&D spending in Canada
- Ericsson's largest R&D centre outside of Sweden
- 1,600 employees



# Ericsson's Worldwide Organization

## Global Market and Sales Organization

America, Asia Pacific, Europe, Middle East and Africa

## Business Units

Systems

Mobile Systems  
CDMA

Global Services

Transmission &  
Transport Networks

## Core Units

Core Network  
Development

Radio Network  
Development

Supply

Service Network  
& Application

## Montreal Design Center

TDMA Systems

CDMA Core  
Networks

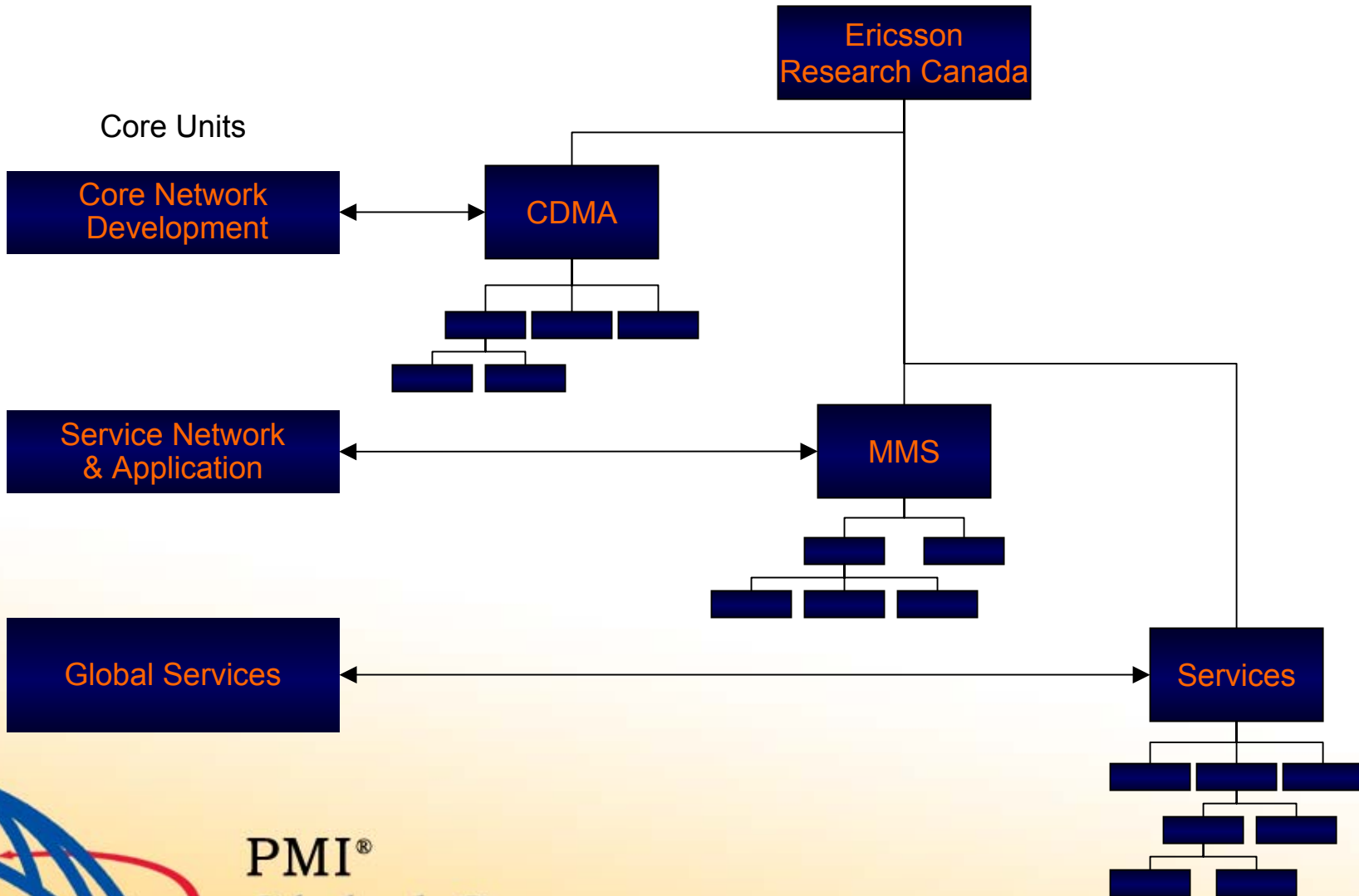
Service Network  
Application Dev.

CDMA Radio  
Access Network

MMS  
Provisioning



# Ordering of work



# Internal Business Environment 2002

	Net changes (Headcount)
CCND - Core Network	- 113
BSYS - TDMA	- 392
BUGS - Global Services	+ 135
BMOC - CDMA Core Network	- 90
BMOC - CDMA Radio Network	+ 450
CSNA - Service Network	+ 40
LMC Mandate Changes - Summary	+ 30





# Two levels of Resource Planning

	Characteristics	Purpose	Performance
Strategic	<p>Longer horizon (2 to 3 years)</p> <p>Allocation done at project level</p> <p>Competence based</p>	<p>Strengthen ability to plan for resource build-up, competence shifts, reduction or transfers on a company wide basis</p> <p>Provide a factual base for negotiations of new or changed mandates</p>	<p>Senior Management</p> <p>Performed quarterly or when major changes mandate</p> <p>Home-grown tool (ResourcePlanner)</p>
Operational	<p>Shorter horizon (3 to 6 months)</p> <p>Assignment at the task level</p> <p>Named individuals</p>	<p>Satisfy the needs of the projects</p> <p>Develop individuals by providing challenging assignments</p>	<p>Line Managers</p> <p>On-going</p> <p>MS-Project 2002 / Project Server</p>



# Key Success Factors

- Provides information management can act upon
- Low maintenance
- Data ownership



# Provides information management can act upon

- Do we have enough people to meet our current demand?
- Do we know what are we going to be doing next year?
- Do we have a balanced workload?
- Where is people need next? When?
- Where is people available? When?
- What competencies are required next? When?
- What can we move to make room for an urgent request?



# Low maintenance

- Uses available data
  - Project name
  - Start date
  - Duration
  - Effort required
  - Market availability date
  - Product life span
  - Post sale support
- Does not require detailed planning
- Does not require detailed allocations

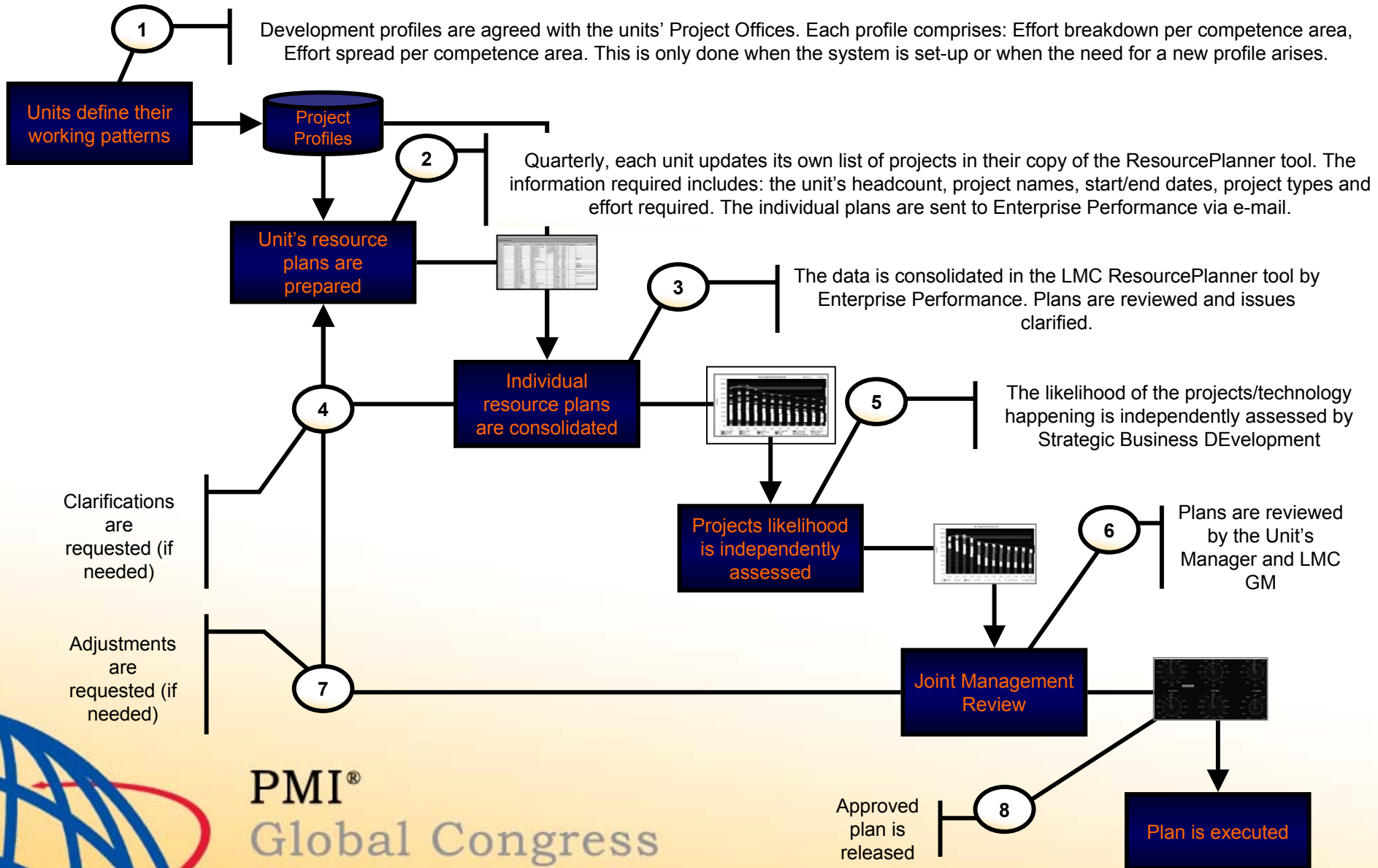


# Data ownership

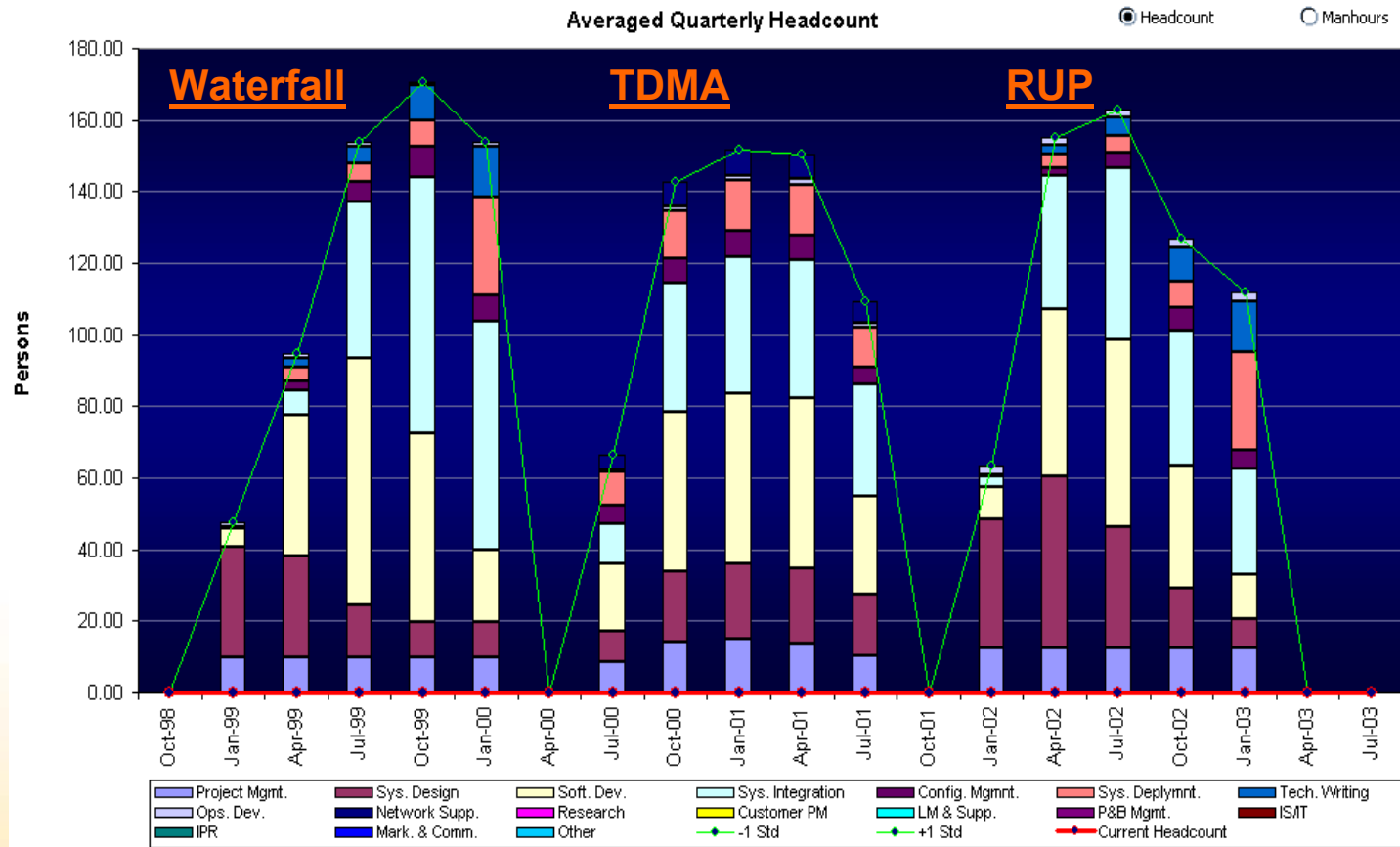
- Units own the profiles used to calculate the resources needed by each project
- Emphasis is put on resolving problems and not in drawing nice looking charts
- Independent review of the data submitted keeps the units honest



# Strategic Resource Planning Process



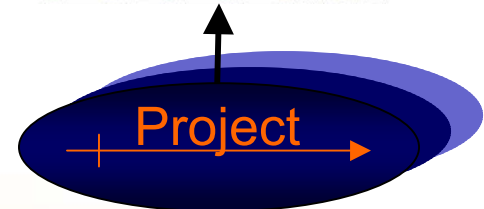
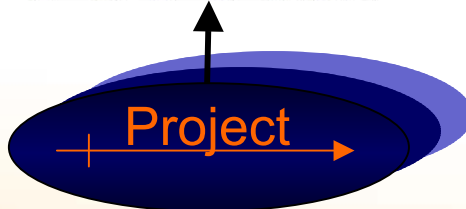
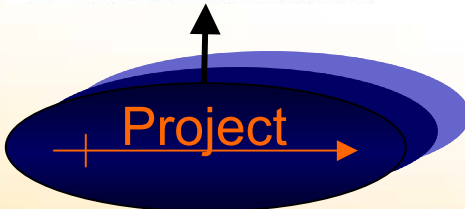
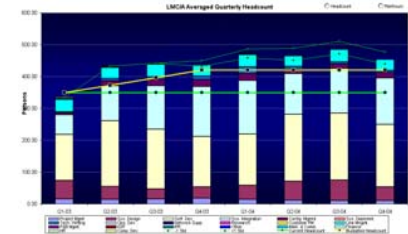
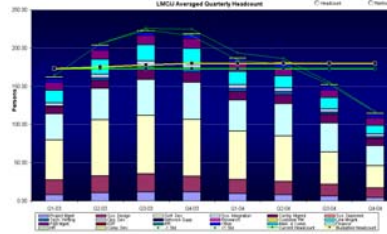
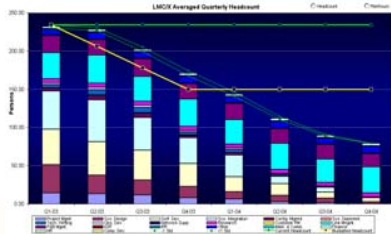
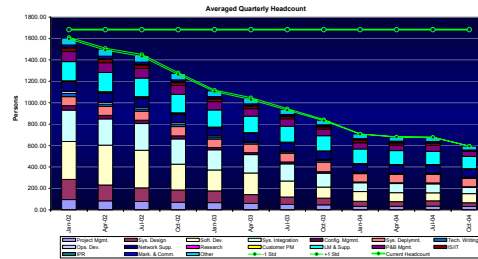
# Step 1. Units define their own work patterns



# Step 2, 3 & 4. Compiling the Information

Unit Resource Load

Company Resource Load



- Start & duration
- Total effort
- Profile

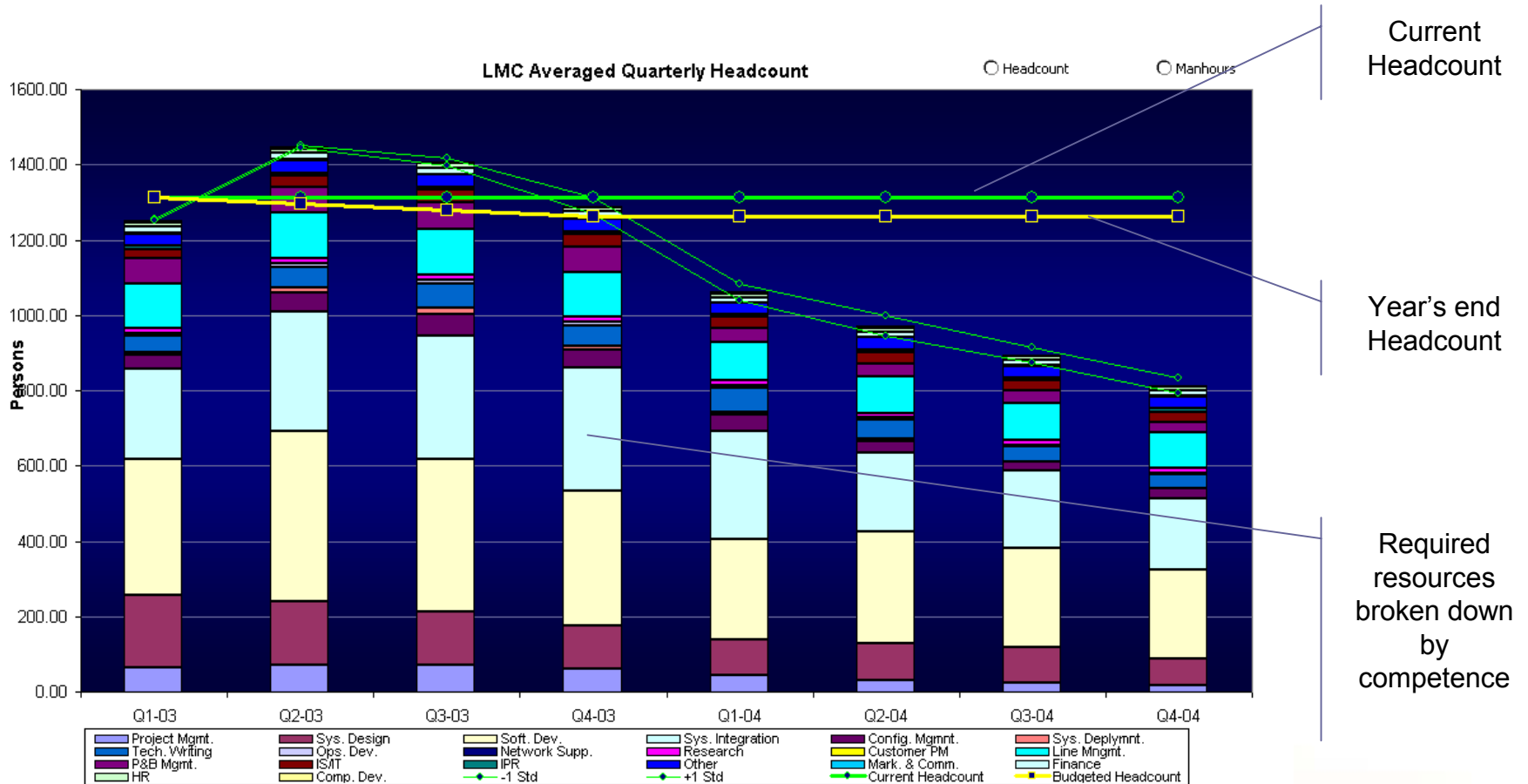




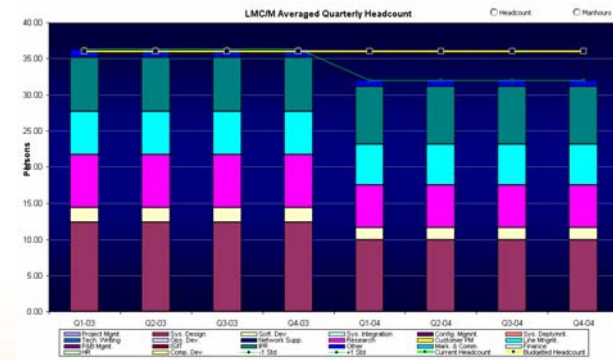
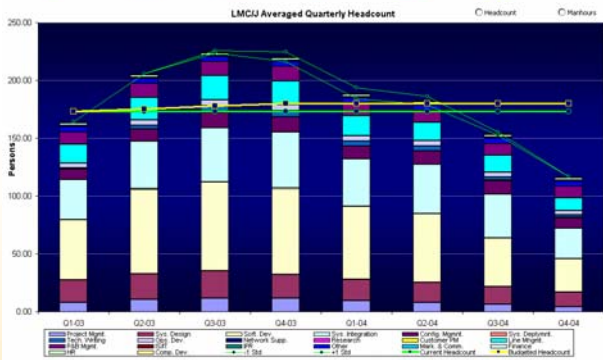
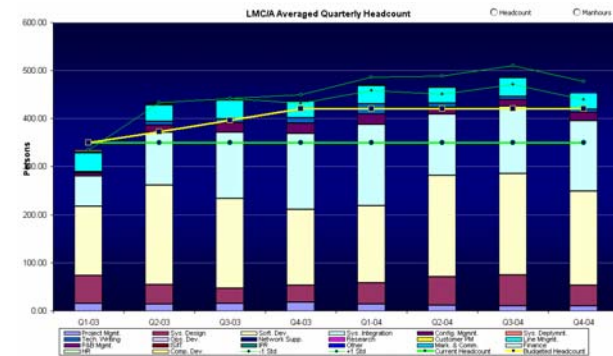
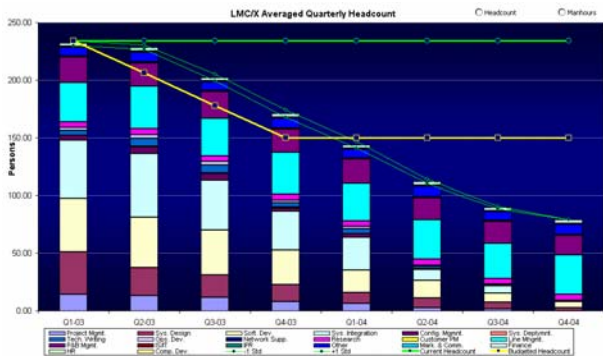
# Step 5, 6 & 7. Reviewing the resource situation



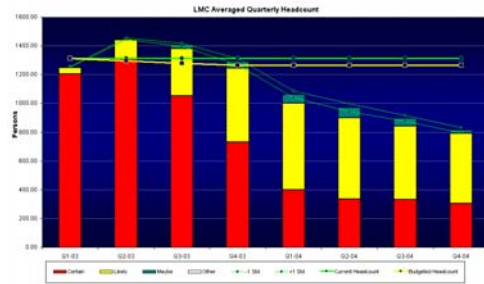
# Forecasted workload



# The organization workload is obtained by aggregation of the units' plans



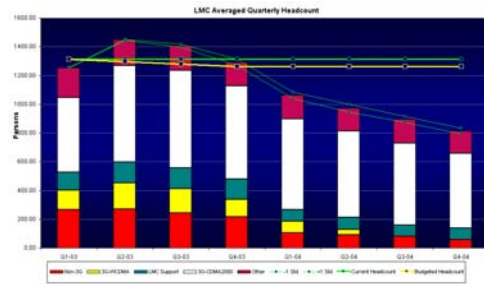
# Workload Views



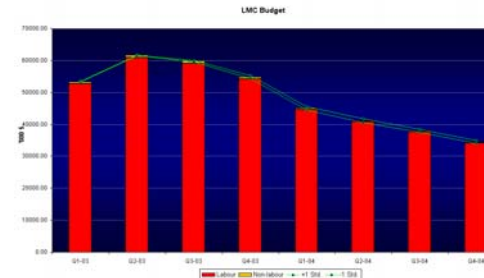
Likelihood



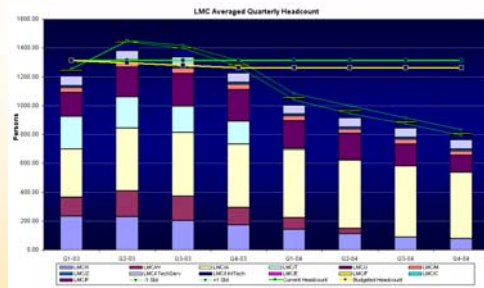
Status



Technology



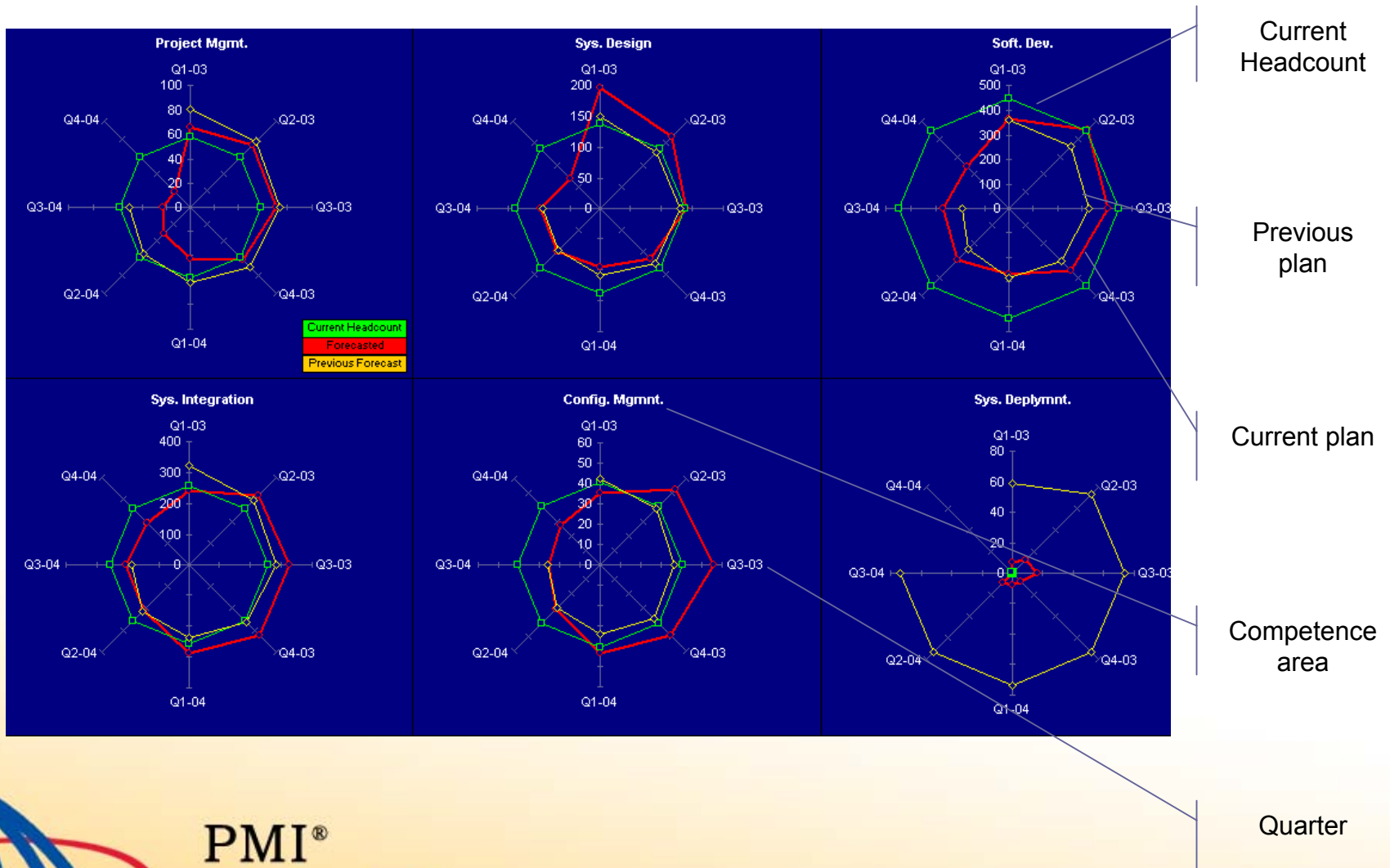
Budget



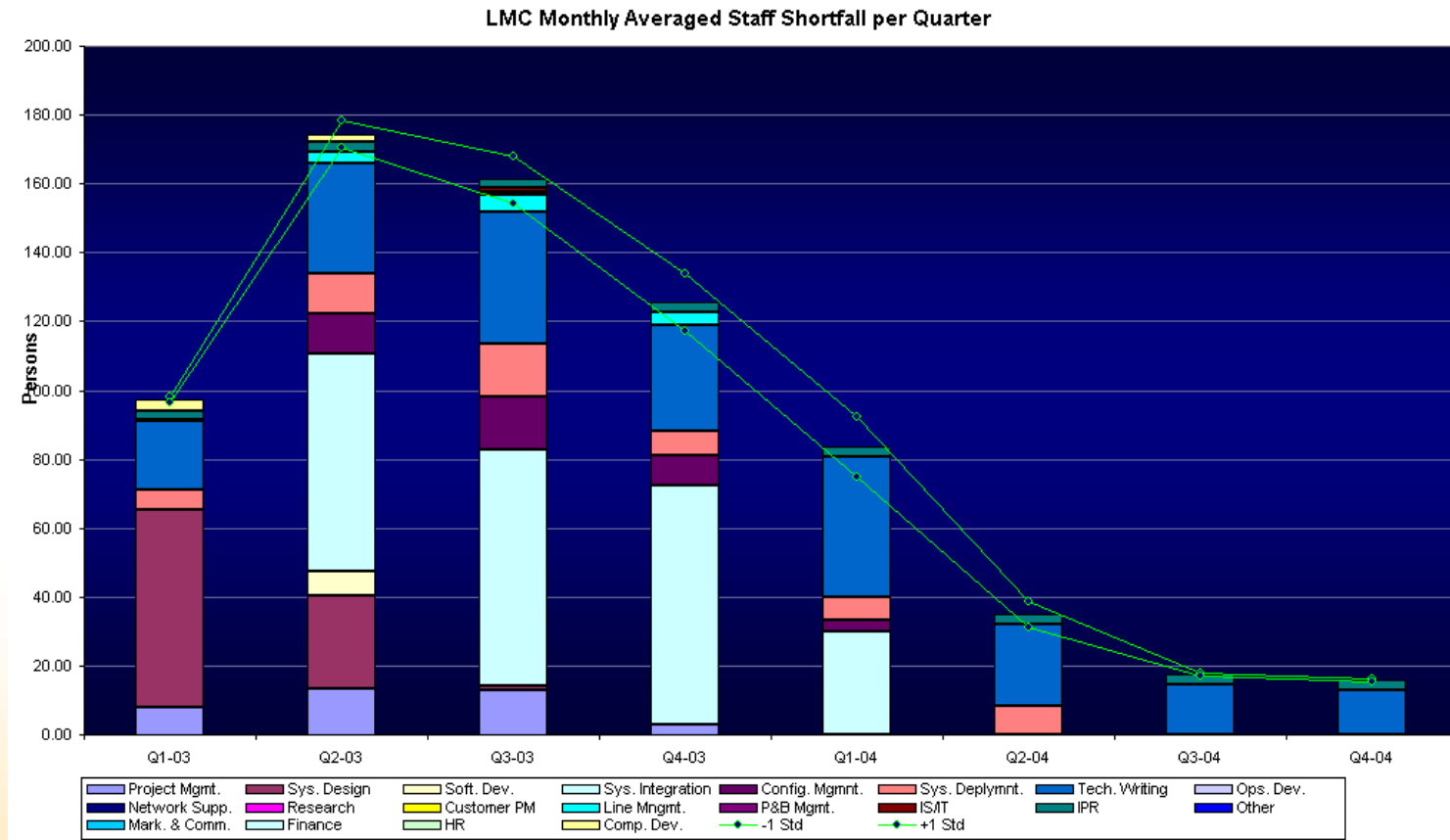
Work Spectrum



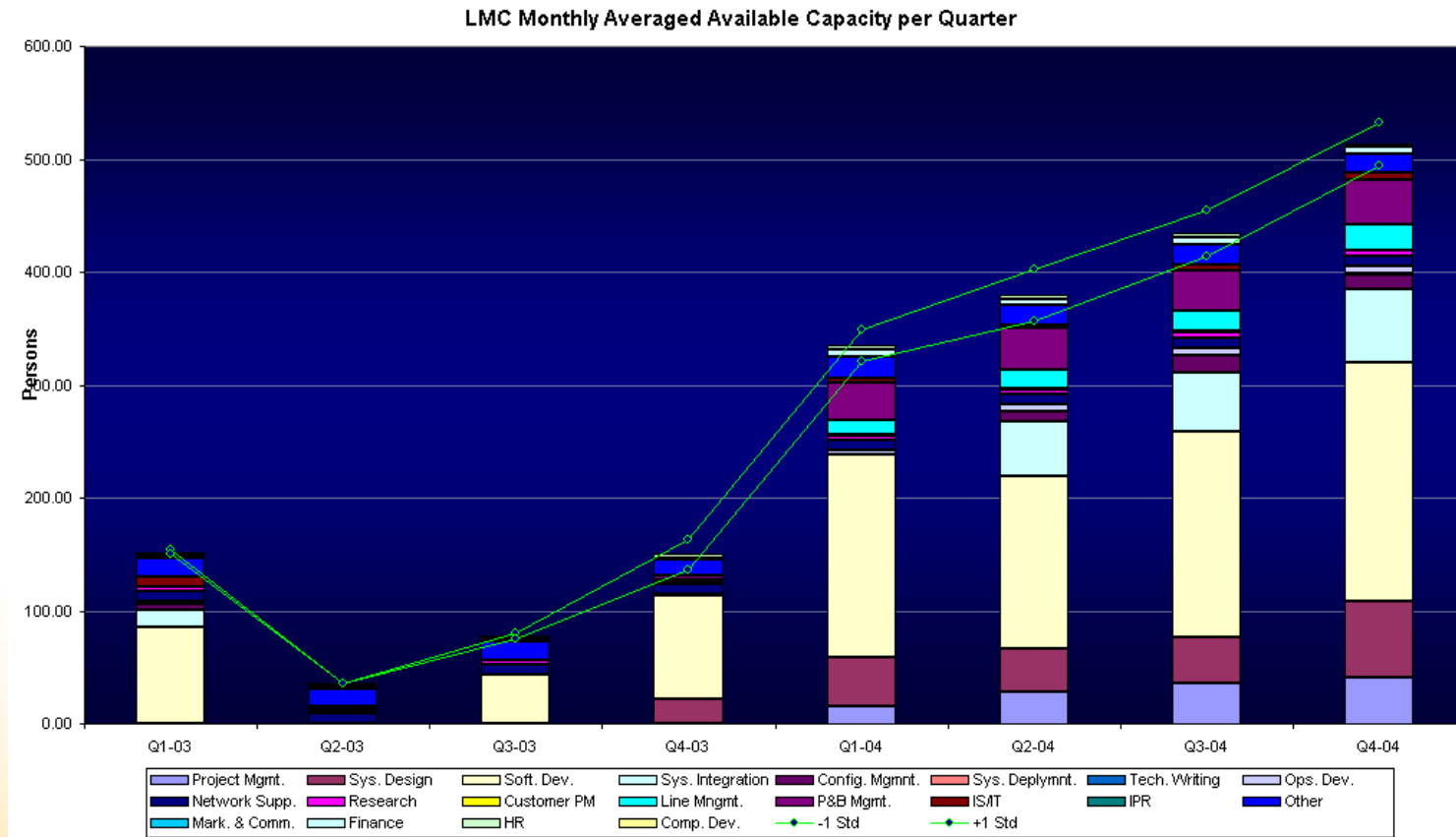
# Capacity Vs. Demand Charts



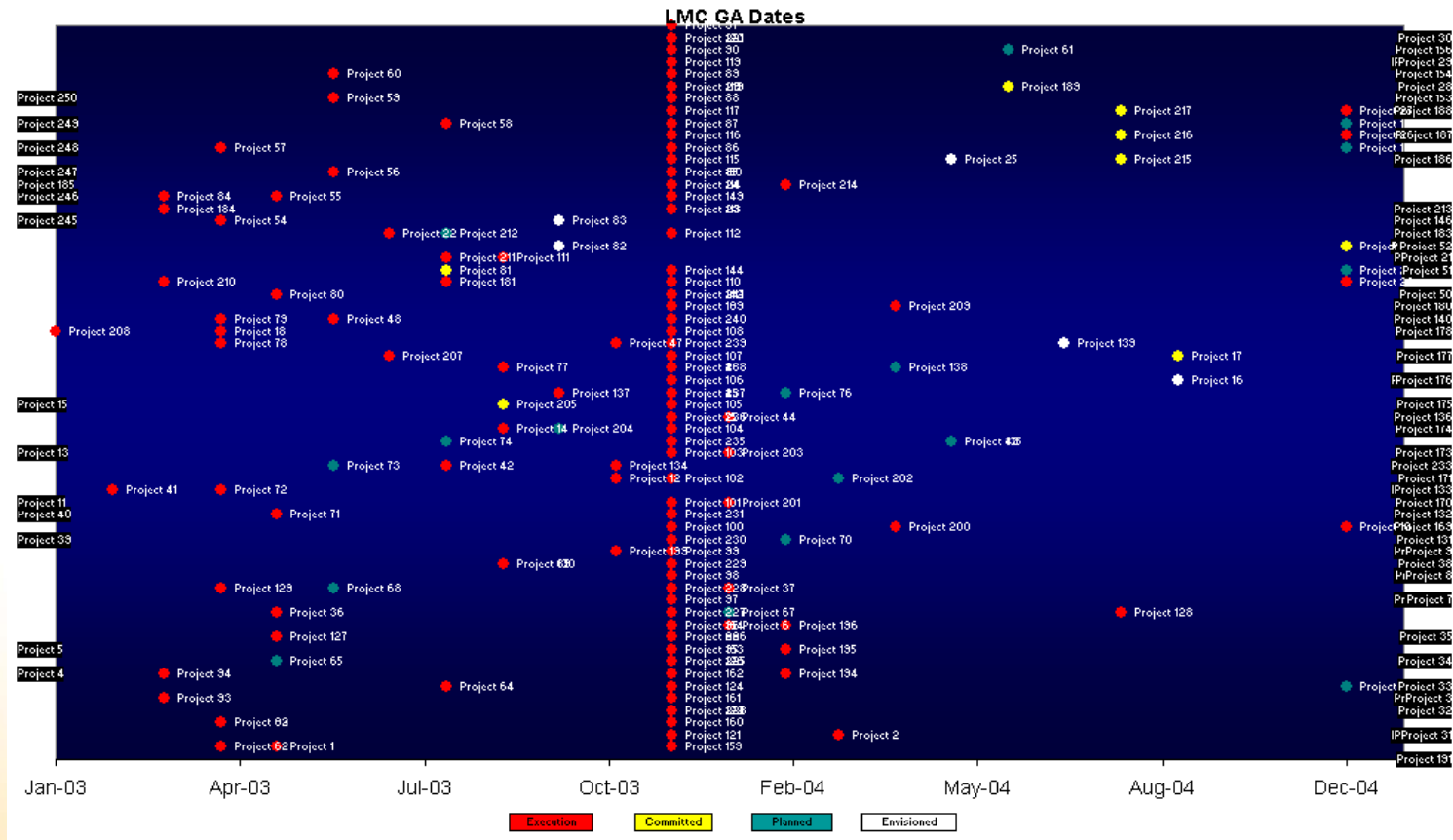
# Resources Shortfall



# Resources Availability

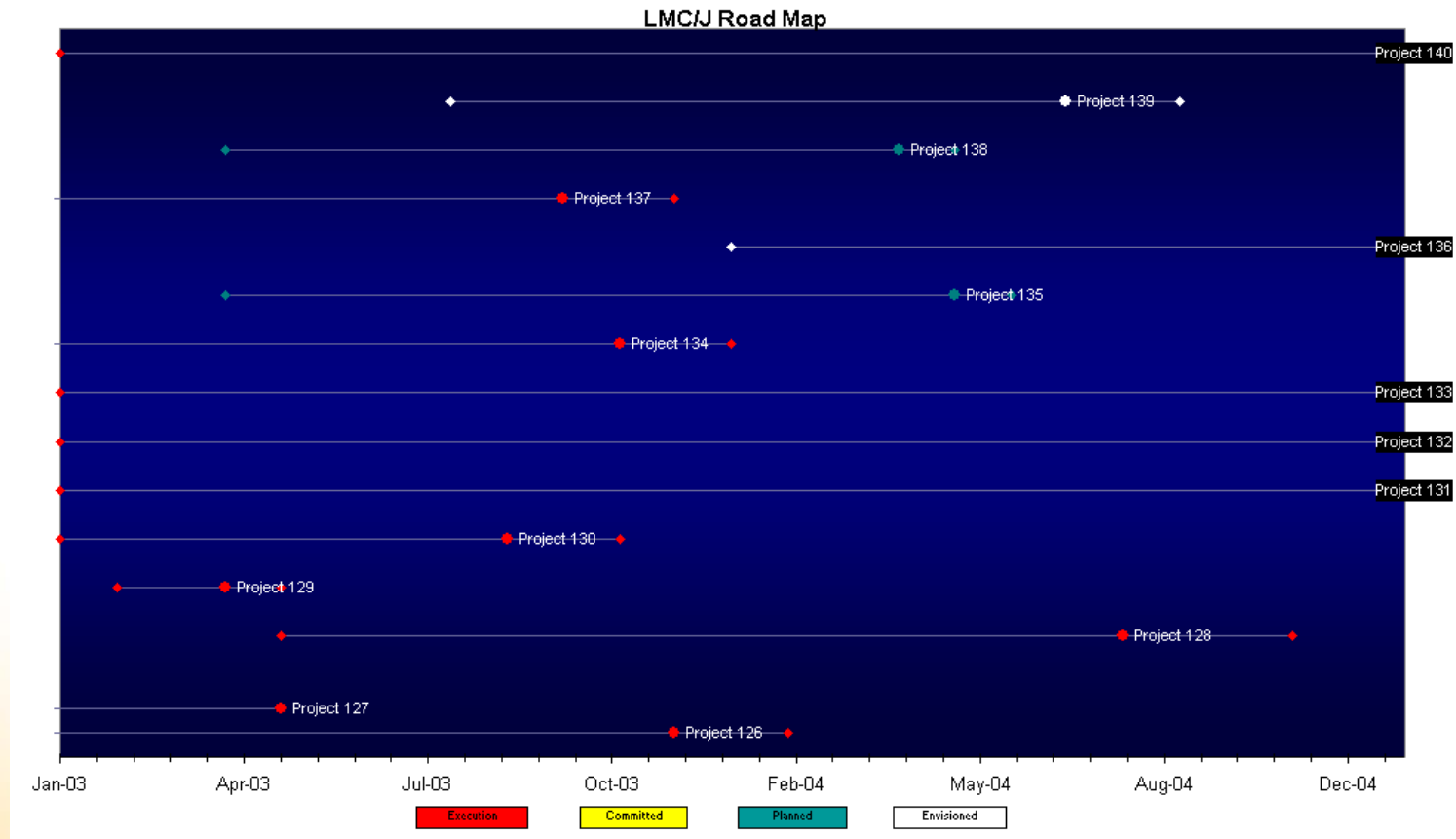


# Due Dates

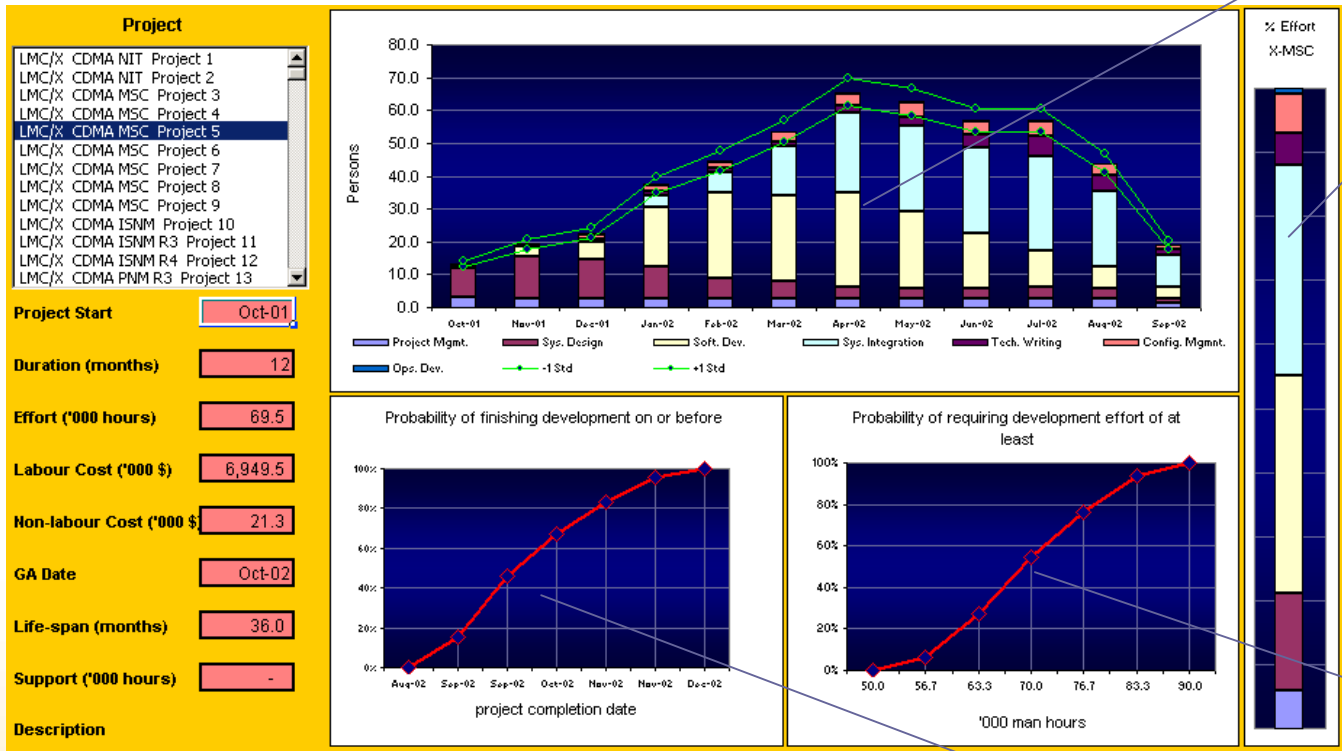




# Time lines



# Project Details



Project's work distribution

Competence breakdown

Probability of exceeding a given effort level

Probability of finishing on time



# Text output enables the creation of user defined graphs

Month	Total			Project Mgmt.			Sys. Design			Soft. Dev.			Sys. Integration			Config. Mgmt.			Sys. Deploymt.										
	Required	+/	Available	Required	+/	Available	Required	+/	Available	Required	+/	Available	Required	+/	Available	Required	+/	Available	Required	+/	Available								
Jan-03	1,163.1	1.9	234.2	86.4	61.1	0.1	-	3.1	193.5	0.3	-	55.5	329.9	0.8	117.1	-	210.1	0.3	46.9	-	32.2	0.1	7.6	-	4.7	-	-	3.7	
Feb-03	1,271.9	2.0	133.7	92.6	64.0	0.1	-	6.0	193.2	0.3	-	55.2	339.9	0.8	87.1	-	249.5	0.5	6.5	-	32.5	0.1	7.4	-	5.3	0.0	-	4.3	
Mar-03	1,241.7	3.1	97.7	126.1	72.6	0.2	-	14.6	200.9	1.0	-	62.9	396.2	0.8	50.7	-	261.8	0.6	-	-	5.3	40.4	0.1	-	0.4	10.3	0.0	-	9.3
Apr-03	1,518.1	5.0	38.8	242.9	75.6	0.3	-	17.6	196.5	1.2	-	58.5	476.6	1.6	-	29.6	328.1	1.3	-	72.1	52.2	0.2	-	12.2	16.2	0.1	-	15.2	
May-03	1,485.7	4.3	32.7	205.3	71.7	0.3	-	13.7	158.1	0.6	-	20.1	471.6	1.2	-	24.6	328.4	1.2	-	72.4	53.9	0.3	-	13.9	10.0	0.1	-	9.0	
Jun-03	1,249.2	4.1	73.6	109.3	66.8	0.3	-	8.8	129.3	0.5	-	1.3	415.0	0.7	32.0	-	299.3	0.8	-	43.2	49.1	0.3	-	9.1	11.4	0.6	-	10.4	
Jul-03	1,400.6	6.0	64.5	152.1	72.1	1.0	-	14.1	146.7	2.8	-	8.7	421.3	1.0	25.7	-	313.3	0.4	-	57.3	53.1	0.1	-	13.1	11.8	0.1	-	10.8	
Aug-03	1,490.4	3.5	79.8	167.2	72.0	1.0	-	14.0	147.0	3.8	-	9.0	397.1	1.7	49.9	-	316.9	0.9	-	68.8	58.2	0.2	-	18.2	15.8	0.1	-	14.8	
Sep-03	1,289.5	12.7	110.8	137.6	68.1	1.0	-	11.1	124.8	4.5	13.2	-	393.0	3.1	54.0	-	344.1	2.5	-	38.1	55.1	0.4	-	15.1	21.8	0.3	-	20.2	
Oct-03	1,233.0	16.7	200.4	120.4	60.1	1.0	-	2.1	98.1	4.5	39.9	-	323.5	5.3	123.5	-	316.2	4.0	-	68.2	47.7	0.4	-	7.7	12.8	0.5	-	11.8	
Nov-03	1,258.7	19.6	115.3	161.0	62.8	1.0	-	4.8	127.6	5.0	10.4	-	375.4	7.0	71.6	-	352.6	4.6	-	97.6	51.4	0.6	-	11.4	4.7	0.4	-	3.7	
Dec-03	1,266.7	21.9	142.0	95.7	59.2	1.0	-	1.2	120.2	4.4	17.8	-	368.4	8.6	78.6	-	304.3	5.1	-	48.3	45.9	0.9	-	5.9	6.8	0.5	-	5.8	
Jan-04	1,128.9	22.0	270.7	96.5	45.5	1.0	12.5	-	111.1	4.0	26.9	-	306.2	9.4	140.8	-	298.7	4.7	-	42.7	47.0	1.1	-	7.0	8.2	0.5	-	7.2	
Feb-04	1,022.6	20.7	356.5	76.1	42.0	1.0	16.0	-	92.6	3.4	45.4	-	246.5	8.0	200.5	-	276.5	5.0	-	20.5	41.5	1.2	-	1.5	8.3	0.5	-	7.3	
Mar-04	1,010.0	21.0	380.4	77.4	39.5	1.0	19.5	-	81.1	2.6	56.9	-	249.9	8.5	197.1	-	281.6	5.0	-	25.6	40.9	1.1	-	0.9	5.5	1.0	-	4.5	
Apr-04	956.9	22.9	407.5	51.2	36.1	1.0	21.9	-	72.2	1.9	65.7	-	246.8	8.8	200.2	-	242.7	5.2	-	19.3	-	36.7	1.2	3.2	-	12.1	2.4	-	15.1
May-04	994.4	26.9	358.8	40.2	31.3	1.1	26.7	-	113.4	3.5	24.6	-	302.1	10.9	144.9	-	196.2	5.9	-	59.8	-	29.5	1.1	10.5	-	15.1	2.8	-	14.1
Jun-04	963.2	23.8	369.3	19.5	24.7	0.5	33.3	-	112.1	3.6	25.9	-	332.2	11.7	114.8	-	185.4	6.0	-	67.6	-	25.6	0.7	14.4	-	1.4	0.3	-	0.4
Jul-04	963.1	22.5	366.9	17.0	22.9	0.5	35.1	-	111.7	3.6	26.2	-	306.8	10.5	140.2	-	205.1	6.4	-	47.9	-	27.2	0.7	12.8	-	0.0	0.0	1.0	-
Aug-04	899.7	20.6	431.6	18.4	23.3	0.5	34.7	-	101.8	3.2	36.2	-	245.3	8.6	201.7	-	145.2	6.8	-	40.8	-	25.0	0.7	15.0	-	0.1	0.0	0.9	-
Sep-04	818.4	17.3	512.1	17.5	19.9	0.4	38.1	-	76.2	2.1	61.8	-	229.4	8.3	207.6	-	186.4	5.3	-	69.6	-	23.4	0.6	16.6	-	0.3	0.0	0.7	-
Oct-04	921.7	22.9	408.9	17.6	19.2	0.5	38.8	-	79.1	2.3	58.9	-	303.8	12.0	142.2	-	209.6	6.7	-	46.4	-	30.5	0.8	9.5	-	0.2	0.0	0.3	-
Nov-04	822.0	18.5	506.9	15.9	17.6	0.4	40.4	-	71.9	2.1	66.1	-	235.4	8.5	211.6	-	159.2	6.1	-	66.8	-	25.3	0.8	14.2	-	0.2	0.0	0.3	-
Dec-04	695.9	15.5	622.1	15.0	16.4	0.4	41.6	-	57.5	1.6	30.5	-	165.2	6.2	281.7	-	172.6	5.9	-	82.4	-	23.0	0.7	17.0	-	0.3	0.0	0.7	-



# Step 8. Executing the resource plan

- Frame Agreements
- Transfers
- Competence development
- Downsizing
- Recruiting

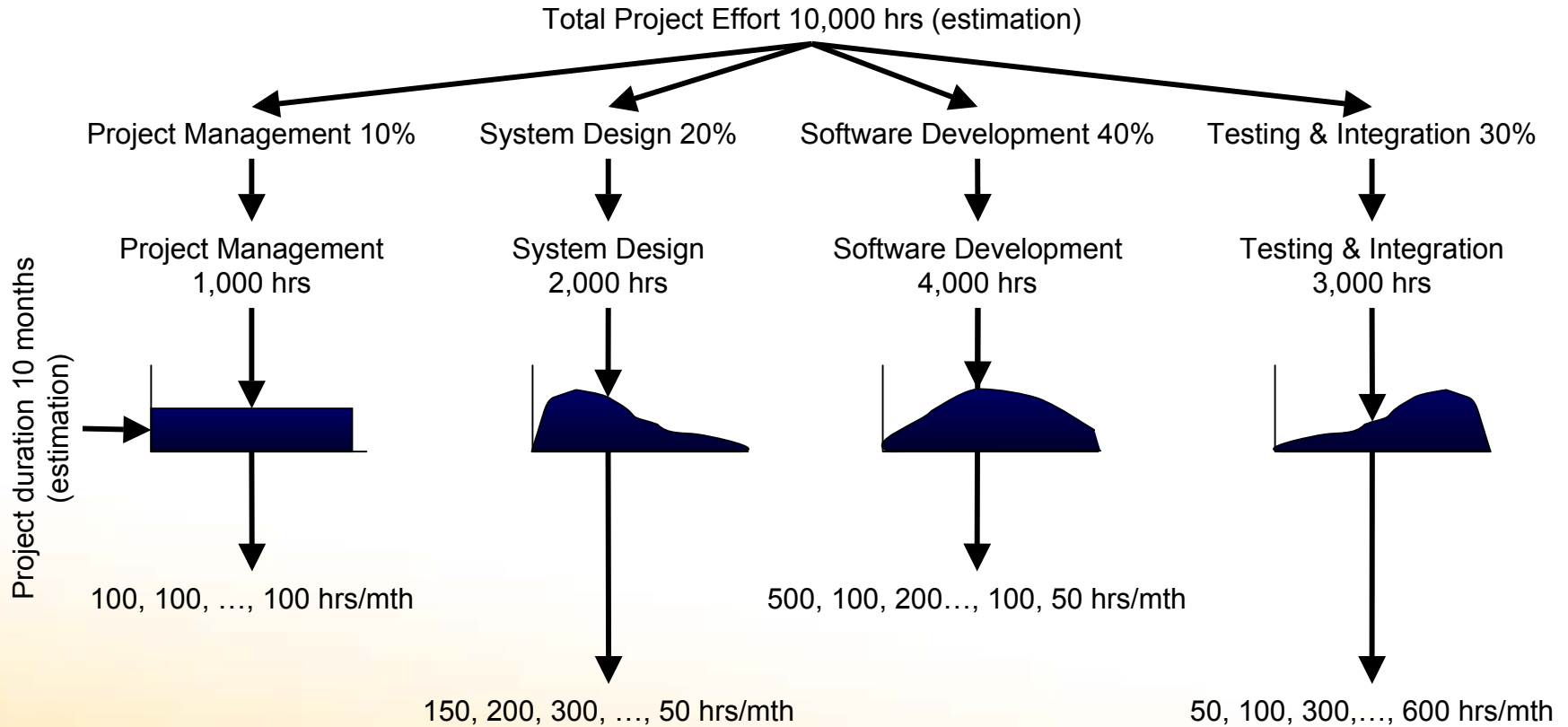


# Calculating demand

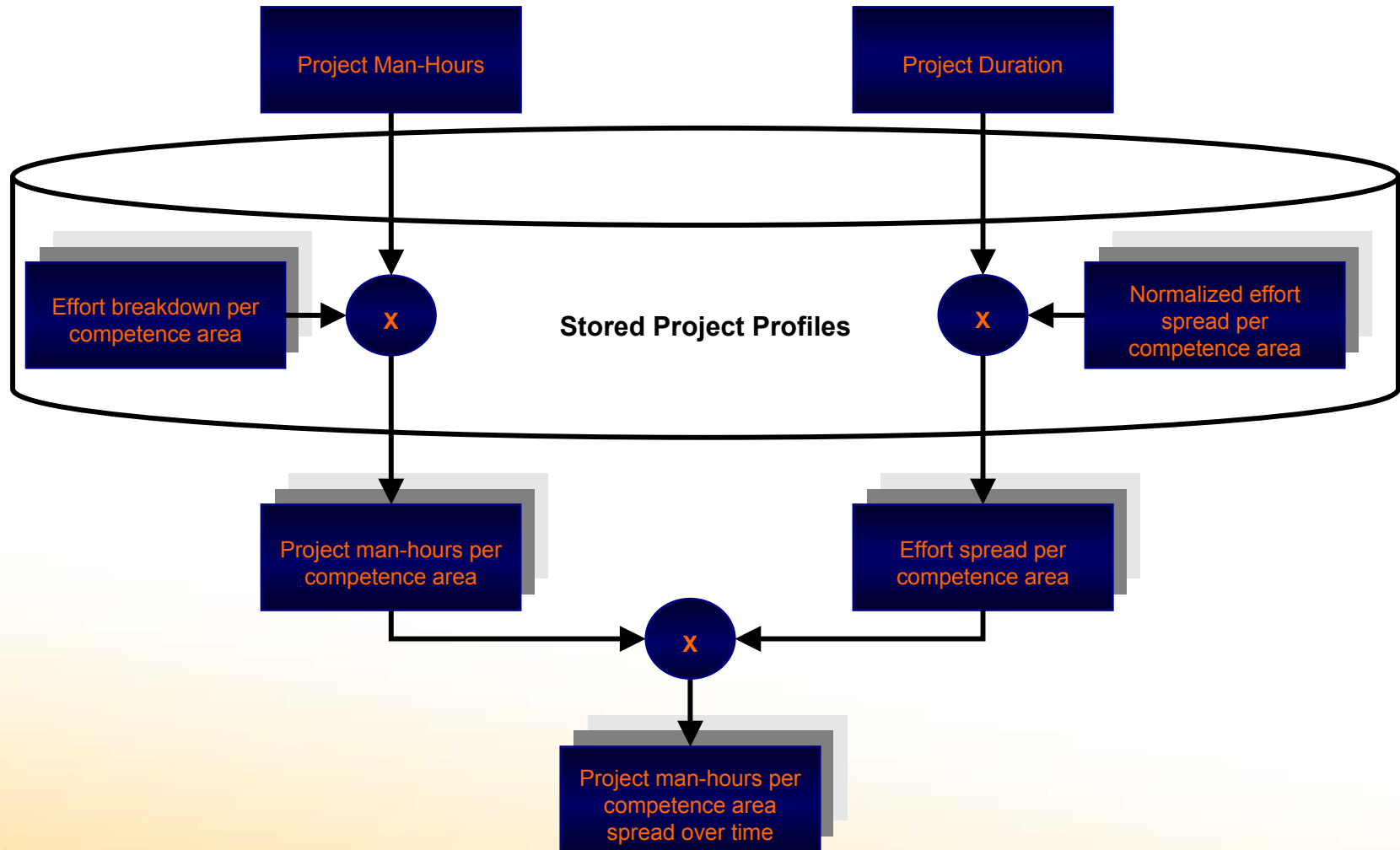


PMI®  
Global Congress  
EUROPE 2003

# Example



# Block Diagram



# Summary



PMI®  
Global Congress  
EUROPE 2003



- The strategic resource planning process provides the project oriented organization with the capability to coordinate the use of scarce resources.
- Key success factors in the implementation of the process are:
  - Provide information management can act upon
  - Low maintenance
  - Data ownership



# References

- Running the Successful Hi-tech Project Office, E. Miranda, Artech House, March 2003
- Strategic Resource Planning Process, Ericsson Internal, January 2001
- Revolutionizing Product Development Quantum Leaps in Speed, Efficiency, and Quality, S. Wheelwright and K. Clark, The Free Press, 1992

