

Business Planning And Tracking

Case Study Examples

By:

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Business Planning and Tracking

The case study in this presentation is of a divisional Central Manufacturing Engineering department

After initial set-up, work effort savings with this approach was 60%

This presentation contains the following Lean Templates with case study examples that facilitate Business Process Re-Engineering:

- **ONE-PAGE BUSINESS PLAN** – high level summary of all business goals and initiatives
- **INITIATIVE DELIVERABLES** – next level of detail where progress is reported
- **INITIATIVE SCORECARD** – one page rolling summary of initiatives status
- **METRICS SCORECARD** – one page rolling summary of business metrics performance

Also included are these additional examples of spin-off techniques:

- **BUSINESS PLAN ASSURANCE MATRIX** - assure business plans are integrated
- **RESOURCE ALLOCATION MATRIX** – assure sufficient headcount is available and leveled

Lean Business Practice Examples

- The examples of business planning and tracking shown on the following pages are for a divisional Central Manufacturing Engineering department where the plan includes **Initiatives** and performance **Metrics**.
- Both **Initiatives** (which have specific deliverables) and **Metrics** are tracked on visual control scorecards where green/red indicate whether they are meeting their monthly targets.
- The last two slides show planning tools that were done only once at the beginning of the year to assure the plan is achievable and if not, where further corrective action is required so the plan closes.
- All planning and tracking reports were done in Excel and were posted on a common drive for access by everyone in the department
- This portfolio of tools reduced overall workload of employees and managers by 60% for planning and tracking over prior practice.
- With this approach, **nothing falls through the cracks!**

Lean Business Practices

All lean templates that follow embody the following lean attributes:

- Utilize Lean Manufacturing techniques, especially **VISUAL CONTROL** and **STANDARD WORK**
- **ELIMINATE REDUNDANT REPORTING** by using a single report for managing the team activities, for executive reporting, and for archiving
- Higher level reports are restricted to **ONE PAGE** to assure simplicity
- **OWNERSHIP** for initiatives, deliverables, and metrics is precise. Nothing falls through the cracks
- Utilize a **LAYERED APPROACH TO DETAIL** so people don't waste time and motion trying to find information at the appropriate level of detail
- The layered approach to reporting virtually **ELIMINATES MEMOS and MEETING MINUTES** which tend to be inefficient for information transfer within an organization
- Set up to allow "snap shots" to be recorded during the year to support ISO requirements and a **LEARNING ORGANIZATION** for continuous improvement
- Bottom-up accountability for performance reporting by using Scorecards - information flow is treated as a **VALUE-STREAM** with **CONTINUOUS FLOW**
- Are designed to **FACILITATE EARLY WARNING OF EMERGING PROBLEMS**, before they become crises - this becomes the pull signal for the Toyota Lean Mgmt Principle 12: *See For Yourself*

One Page Business Plan

Purpose: On one page, capture all necessary information to communicate to the organization, the goals, strategies, and initiatives for the coming year.

- Enables simplification of the business planning process
- Sets the versatile format (architecture) for all business planning and tracking
- Clearly identifies who is responsible
- Divides business plan expectations into either METRICS and INITIATIVES
- Enables easy to implement mid-year adjustments when business conditions change
- Serves as the expectation document for the employee appraisal system

Central Mfg. Engineering - Dennis Harvey, Director			Business Plan 2000	
OBJECTIVES	METRICS	STRATEGIES	INITIATIVES	CHAMPIONS
IMPROVE SAFETY PERFORMANCE	- Eliminate Ergo Hazards < 60 days	- Eliminate hazards in employee's environment: on and off job	S-1 Continuously improve systems to eliminate ergonomic hazards	Coons
	- Permanent Ergo Fixes < 6 months	- Employee participation in safety and housekeeping: on and off job	S-2 Review all safety incidents and corrective actions within 48 hrs	Schaefer
	- Recordables < 5.17/100/year		S-3 Conduct (2) Mfg. Engrg. Director safety audits per month	Harvey
	- Lost Work Days < 1.41/100/year		S-4 Promote people involvement for safety performance (APIE)	Harvey
			S-5 New equipment specified with Designed In Safety	Coons
REDUCE MFG. COST	- Operating Expense < Budget	- Maximize utilization of human resources	C-1 Lead Continuous Improvement Program (CIP) for GMLG	Coons
	- CIP for GMLG > \$10.5 M	- Reduce structural cost and waste	C-2 Continuous improvement of current mfg processes and equipment	Coons
	- CIP RONA for GMLG > \$2.1 M	- Rigorous DFM in design process	C-3 Support machine and equipment replacement	Schaefer
	- Utility Cost < Budget	- Recover mfg. losses from responsible parties	C-4 Develop next generation manufacturing systems	Harvey
		- Grow business by leveraging global mfg., marketing, & supplier resources	C-5 Implement improvements to reduce utilities use and cost	Shaffer
			C-6 Support Design for Manufacturability: SD89MAC	Coons
			C-7 Identify and develop suppliers outside North America	Kumar
IMPROVE RESPONSIVENESS	- Past Due LaGrange Cranes = 0	- Implement GM Common Systems	R-1 Develop and implement improved mfg. business practices	Harvey
	- Past Due LaGrange Mobile Equip = 0	- On-time delivery of products and services to customers	R-2 Develop systems to improve project work throughput	Schaefer
	- Closure Safety Items to Plan	- Improve system availability through planned maintenance	R-3 Implement systems for on-time PM and inspections	Schaefer
	- Missed Deliverables < 5%	- Level schedules to demonstrate capability / capacity	R-4 Provide competitive facilities plans	Coons
	- Suppliers to schedule < 30,000 PPM		R-5 Support production launch of H engines	Irwin
			R-6 Support planning for new programs and business opportunities	Harvey
			R-7 Lead supplier delivery improvement process	Bump
IMPROVE QUALITY	- Lost Production to Utilities = 0 std hrs	- First time through quality	Q-1 Continuously improve facilities and related systems	Erickson
	- All Housekeeping Areas > 90%	- Use ISO 9000 and ISO 14001 systems to run the business	Q-2 Continuously improve environmental and recycling programs	Kaps
	- Rework Situations = 0	- Effectively utilize technology	Q-3 Lead efforts towards attaining ISO 14001 certification	Kaps
	- Penthouse Blowers < 5% down	- Partnership with suppliers	Q-4 Support implementation of Emissions Programs	Yonker
	- Supplier Qual LaGrange < 800 PPM	- Assume environmental responsibility	Q-5 Develop and implement systems to assure business continuity	Coons
	- Supplier Qual London < 1000 PPM		Q-6 Lead supplier quality improvement process	Bump
HIGHER LEVELS OF EMPLOYEE PARTICIPATION	- Suggestion Process Rate > 60%	- Live QN / GM core beliefs & values	E-1 Process employee suggestions within 60 days	Coons
	- Suggestion Participation > 30%	- Implement common communication process in plants	E-2 Implement workplace organization and visual controls	Coons
	- Suggestion Referral < 60 days	- Develop and execute training plan that meets business needs	E-3 Establish and execute employee training plan	Farmer
	- Training = 40 hours/year	- Expand workforce flexibility	E-4 Implement Quality Network Strategies	Harvey
	- Controlable Absenteeism < 2.0%			
	- WPO&VC Workshops > 80K sq ft			

Anatomy of the One Page Business Plan

OBJECTIVES

OBJECTIVES are the broad performance areas where the organization must perform well in order to be successful.

Metrics are developed for each OBJECTIVE with the intent that the metrics can be rolled-up from within the organization and tracked on a regular basis.

GOALS

GOALS are metrics with target values that are expected to be achieved by the end of the year or on an ongoing basis.

GOALS do not necessarily align with content in rows but they do correspond to the correct OBJECTIVES

STRATEGIES

STRATEGIES are the approach the organization plans on using to achieve the OBJECTIVES

STRATEGIES will be used to develop specific INITIATIVES

INITIATIVES

INITIATIVES must be accomplished for the organization to achieve its OBJECTIVES

INITIATIVES typically represent new or continuously improved processes and solutions, not repeating today's already utilized and successful processes

INITIATIVES will be written with deliverables, time-lines, issues and responsibilities (a supplemental one-page summary of each INITIATIVE is available)

INITIATIVES can be tracked for compliance to their plan on a monthly or quarterly basis

CHAMPIONS

The person(s) responsible for defining INITIATIVES and making sure support organizations are prepared to deliver

CHAMPIONS can report status of INITIATIVES on a monthly or quarterly basis

Central Mfg. Engineering - Dennis Harvey, Director		Business Plan 2000		
OBJECTIVES	OBJECTIVES METRICS	STRATEGIES	INITIATIVES	CHAMPIONS
IMPROVE SAFETY PERFORMANCE	<ul style="list-style-type: none"> Eliminate Ergo Hazards < 60 days Permanent Ergo Fixes < 6 months Recordables < 5.17/100/year Lost Work Days < 1.41/100/year 	<ul style="list-style-type: none"> Eliminate hazards in employee's environment: on and off job Employee participation in safety and housekeeping: on and off job 	<ul style="list-style-type: none"> S-1 Continuously improve systems to eliminate ergonomic hazards S-2 Review all safety incidents and corrective actions within 48 hrs S-3 Conduct (2) Mfg. Engr. Director safety audits per month S-4 Promote people involvement for safety performance (IAPIE) S-5 New equipment specified with Designed in Safety 	<ul style="list-style-type: none"> Coons Schaefer Harvey Harvey Coons
REDUCE MFG. COST	<ul style="list-style-type: none"> Operating Expense < Budget CIP for GMLG > \$10.5 M CIP RONA for GMLG > \$2.1 M Utility Cost < Budget 	<ul style="list-style-type: none"> Maximize utilization of human resources Reduce structural cost and waste Rigorous DFM in design process Recover mfg. losses from responsible parties Grow business by leveraging global mfg., marketing, & supplier resources 	<ul style="list-style-type: none"> C-1 Lead Continuous Improvement Program (CIP) for GMLG C-2 Continuous improvement of current mfg processes and equipment C-3 Support machine and equipment replacement C-4 Develop next generation manufacturing systems C-5 Implement improvements to reduce utilities use and cost C-6 Support Design for Manufacturability: SD89MAC C-7 Identify and develop suppliers outside North America 	<ul style="list-style-type: none"> Coons Coons Schaefer Harvey Shaffer Coons Kumar
IMPROVE RESPONSIVENESS	<ul style="list-style-type: none"> Past Due LaGrange Cranes = 0 Past Due LaGrange Mobile Equip = 0 Closure Safety Items to Plan Missed Deliverables < 5% Suppliers to schedule < 30,000 PPM 	<ul style="list-style-type: none"> Implement GM Common Systems On-time delivery of products and services to customers Improve system availability through planned maintenance Level schedules to demonstrated capability / capacity 	<ul style="list-style-type: none"> R-1 Develop and implement improved mfg. business practices R-2 Develop systems to improve project work throughput R-3 Implement system for on-time PM and inspections R-4 Provide competitive facilities plans R-5 Support production launch of H engines R-6 Support planning for new programs and business opportunities R-7 Lead supplier delivery improvement process 	<ul style="list-style-type: none"> Harvey Schaefer Schaefer Coons Irwin Harvey Bump
IMPROVE QUALITY	<ul style="list-style-type: none"> Lost Production to Utilities = 0 std hrs All Housekeeping Areas > 90% Rework Situations = 0 Penthouse Blowers = 5% down Supplier Qual LaGrange < 800 PPM Supplier Qual London < 1000 PPM 	<ul style="list-style-type: none"> First time through quality Use ISO 9000 and ISO 14001 systems to run the business Effectively utilize technology Partnership with suppliers Assume environmental responsibility 	<ul style="list-style-type: none"> Q-1 Continuously improve facilities and related systems Q-2 Continuously improve environmental and recycling programs Q-3 Lead efforts towards attaining ISO 14001 certification Q-4 Support implementation of Emissions Programs Q-5 Develop and implement systems to assure business continuity Q-6 Lead supplier quality improvement process 	<ul style="list-style-type: none"> Erickson Kaps Kaps Yonker Coons Bump
HIGHER LEVELS OF EMPLOYEE PARTICIPATION	<ul style="list-style-type: none"> Suggestion Process Rate > 60% Suggestion Participation > 30% Suggestion Referral < 60 days Training = 40 hours/year Controllable Absenteeism < 2.0% WPO&VC Workshops > 80K sq ft 	<ul style="list-style-type: none"> Live QN / GM core beliefs & values Implement common communication process in plants Develop and execute training plan that meets business needs Expand workforce flexibility 	<ul style="list-style-type: none"> E-1 Process employee suggestions within 60 days E-2 Implement workplace organization and visual controls E-3 Establish and execute employee training plan E-4 Implement Quality Network Strategies 	<ul style="list-style-type: none"> Coons Coons Farmer Harvey

Central Mfg. Engineering - *Dennis Harvey, Director*

Business Plan 2000

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Next layer of detail for INITIATIVES

C-1 Lead Continuous Improvement Program (CIP) for GMLG Champion: Steve Coons						
	Continue to utilize the CIP activity within the production/indirect support areas to reduce manufacturing cost. Improvement activities are encouraged through small focus teams which have the opportunity to make suggestions and propose improvements within their business areas.					
Deliverables	Resp.	Due Date	Support Req'd.	Comments	Status	
1	Increase robustness of the CIP program by tracking CIP items probability of success and initiating regular brainstorming sessions.	Hoebbel	Ongoing	Prod., Maint., M.E.	Held brainstorming session for Quality (Gaydos) team in August	G
2	Measure and communicate "status to CIP target" to all levels of the Division.	Hoebbel	Ongoing	All	Monthly Management Committee reviews but last month's meeting was postponed	R
3	Establish year 2000 CIP incentive targets	Coons, Hoebbel	Jan-00		Completed in February which was when GMLG needed targets.	DONE
4	Incorporate WWP & RONA measurement status into divisional CIP efforts	Hoebbel	Ongoing	RONA committee members	Complete	DONE
5	Integrate U.P. SD70 cost savings activity into CIP process	Hoebbel	Jun-00		Complete	DONE
6	Develop CIP impact of HLP Coolant Kaizen	Hoebbel	Jun-00	Operations	Complete	DONE
7	Investigate & incorporate the "best practices" of Corporation regarding CIP process	Hoebbel	Aug-00		Reviewed feedback obtained from Delphi and Powertrain in August. No major improvement opportunities noted.	DONE
8	Complete rebuild turbo Kaizen activity to achieve \$12,000 target/rebuild turbo.	Petraneck	Dec-00	Operations CME, Commercial	Four add'l cost savings initiatives were added to implementation list in September (estimated annual savings=\$400K)	G

Initiatives Scorecard

Purpose: On one page, captures whether the deliverables for an initiative are on track or they are slipping to schedule.

- VISUAL CONTROL of deliverables in the business plan
- Enables simplification of the business tracking process
- Clearly identifies who is responsible
- All initiatives should have comments but for sure, the RED issues need a one sentence explanation of what is wrong
- Enables flexibility for easy mid-year adjustments as business conditions unfold
- Provides a “snap shot” for performance

Initiatives Scorecard - Year 2000														
	Champion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments
SAFETY														
S-1 Ergonomics	Coons					Red								
S-2 Safety reports	Schaefer													
S-3 Director safety audits	Harvey													
S-4 People involvement	Harvey													
S-5 Designed in Safety	Coons													
COST														
C-1 CIP for GMLG	Coons	Red	Red											
C-2 CI mfg equip	Coons	Red	Red											
C-3 Machine replacement	Schaefer													
C-4 Next gen mfg	Harvey													
C-5 Utilities use and cost	Shaffer	Red	Red	Red	Red	Red	Red	Red	Red	Red				Need engines in MU for ComEd rebates, numerous other difficulties
C-6 DFM: SD89MAC	Coons													
C-7 Suppliers outside N.J.	Kumar									Red	Red			PPAP on Bull Gear from India behind schedule
RESPONSIVENESS														
R-1 Business practices	Harvey													
R-2 Project work thru-put	Schaefer											Red		Delay in disposal of flat bed trailers behind Engine Plant
R-3 On-time PM	Schaefer													
R-4 Facilities plans	Coons		Red										Red	Delay in roll-out of secure waste container pilot and HLP kaisen
R-5 H engine launch	Strong													
R-6 New business	Harvey									Red	Red			New Business Manager position in process of being filled.
R-7 Supplier delivery	McKinley													
QUALITY														
Q-1 Improve facilities	Erickson	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red			Bulk oil facil, Alt Test upgrades -> being retimed
Q-2 Environ & recycling	Kaps													DOT Training reqm'ts., MU site exhaust testing, op. of coolant sys
Q-3 ISO 14001	Kaps	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red			Difficulty getting consultant for ISO14001, working with WFG
Q-4 Emissions Programs	Yonker					Red								
Q-5 Business continuity	Coons													
Q-6 Supplier quality	McKinley													
EMPLOYEES														
E-1 Suggestions	Coons		Red	Red										
E-2 Workplace org.	Coons		Red											
E-3 Training plan	Harvey			Red	Red									
E-4 QN strategies	Harvey													
Legend:		■ = All deliverables are on schedule or retimed to customer satisfaction. ■ = If at least one deliverable in the Initiative missed its due date, or is in jeopardy of missing due date.												

Central Mfg. Engineering Initiative Scorecard – Year 2000

	Champion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments
SAFETY														
S-1 Ergonomics	Coons					Red								
S-2 Safety reports	Schaefer													
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C-3 Machine replacement	Schaefer													
C-4 Next gen mfg	Harvey													
C-5 Utilities use and cost	Shaffer	Red	Red	Red	Red	Red	Red	Red	Red	Red				Need engines in MU for ComEd rebates, numerous other difficulties
C-6 DFM: SD89MAC	Coons													
C-7 Suppliers outside N.A.	Kumar								Red	Red				PPAP on Bull Gear from India behind schedule
RESPONSIVENESS														
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EMPLOYEES														
E-1 Suggestions	Coons		Red	Red										
E-2 Workplace org.	Coons		Red											
E-3 Training plan	Harvey			Red	Red									
E-4 QN strategies	Harvey													
	Legend:													
														= All deliverables are on schedule or retimed to customer satisfaction.
		Red												= If at least one deliverable in the Initiative missed its due date, or is in jeopardy of missing due date.

INITIATIVE SCORECARD: GDLS London

April 2003

	Champion	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Comments	
PEOPLE															
P-1	Weekly audits with Taff	Taff	Green	Green	Green	Green								On track for April	
P-2	Mini-master process	Wade	Green	Green	Green	Green								On track for April	
P-3	Corrective action L.T.A. and H.C.	Taff	Green	Green	Green	Green								On track for April	
P-4	Safety Committees (4)	Henny	Green	Green	Green	Green								On track for April	
P-5	Communications (monthly & start of shift)	Wade	Green	Green	Green	Green								On track for April	
P-6	Develop our people	Sampson	Green	RED	RED	RED								Individual training needs late. Trainer HC and strategy being reviewed.	
CUSTOMER SATISFACTION															
CS-7	Reduce variation in fabrication	Henny	Green	Green	RED	RED								Definition of targets and plan delayed. Retime deliverables. Process Engrg. could own.	
CS-8	Minimize ship short situations	Ball	Green	RED	RED	Green								Monthly meetings being held. Progress made on deliverables	
CS-9	Material availability program	Weatherbee	Green	RED	RED	RED								Inventory losses at TNT. Restructuring personnel. Corrective action plan developed.	
CS-10	Develop DSPO order monitoring	Weatherbee	Green	Green	Green	Green								Developing software to filter old parts	
CS-11	Continuously improve PLP	Ball	Green	RED	Green	Green								During April, trained Mowag (Ireland Prog.) and Anniston (ATGM) on PLP	
FINANCIAL PERFORMANCE															
FP-12	Workforce stabilization	Wade	RED	RED	RED	RED								Contract negotiations underway for GD/GM separation. Retime deliverables.	
FP-13	Snag reduction program	Wade	RED	RED	Green	Green								Initial team meetings scheduled for May. First focus on New Zealand	
FP-14	Eliminate need for Zero/Zero Gate	Wade	Green	Green	Done	Done								Deliverables rolled into FP-13	
FP-15	Realistic input to new contracts	Ball	Green	RED	RED	RED								Delay caused by Legal not getting PO agreement amended. 4 months late.	
FP-16	Inventory management	Weatherbee	Green	Green	Green	Green								Implementing 'A' class control. LT model review.	
FP-17	Improve performance to budget	Sampson	Green	Green	Green	Green								Budgets established recognizing GD transition. Considering end of year reduced orders.	
OPTIMIZE OUR PROCESSES															
OP-18	Business process improvements	Ellison	Green	Green	Green	RED								Monthly meetings happening. Not institutionalized. CIP, IFE moving to Financial	
OP-19	Commonize weld practices	Henny	Green	Green	RED	RED								Definition of targets and plan delayed. Retime. Process Engrg. could own.	
OP-20	Lead time material with Mowag	Weatherbee	Green	Green	Green	Green								On track for April. Workshop being planned for May at Mowag	
OP-21	Paint process commonality	Schulz	RED	RED	RED	RED								Unresolved how paint will be handled with Process Engineering group.	
OP-22	IT enhancement plan	Weatherbee	Green	RED	RED	RED								Delays due to GD transition, Deliverables need to be rescheduled.	
OP-23	DFM and design reviews	Schulz	RED	RED	Green	Green								Timing commitment for workshops in September. IR&D budget issues.	
OP-24	GMDA material availability at site	Weatherbee	Green	Green	Green	Green								Developing new process for MBOM	
OP-25	Develop ME organization	Harvey	RED	RED	RED	RED								Headcount filling behind schedule. Comprehending end-of-year order slowdown.	
CONTINUOUS IMPROVEMENT															
CI-26	Facilities and equipment	Sampson	Green	Green	Green	Green								Deliverables for GD transition (planning stage) are on track. AR for part 1 issued.	
CI-27	Common std. hour metrics global	Henny	RED	RED	RED	RED								Financial assistance to define measurement method and alignment with GDLS	
CI-28	Implement competitive manufacturing	Schulz	Green	RED	Green	Green								First workplace organization workshop started in maintenance.	
GROW THE BUSINESS															
GB-29	I R & D portfolio for manufacturing	Schulz	RED	RED	RED	RED								Lower budgeted funding. Damaging delay of Legal not getting PO agreement.	
GB-30	Source management	Ball	Green	Green	RED	Green								TNT warehouse source management agreed to with PMC owning responsibility	
GB-31	Integrate with Mowag Production	Harvey	RED	RED	Green	Green								Weekly calls on track with business plans and best practices integrated.	
GB-32	GD transition and integration	Taff	RED	Green	Green	Green								Locomotive transfers completed 2/28. Transitions plan on track. Metrics alignment next.	
GB-33	Franchising the Business	Schulz	Green	Green	RED	Green								Timing may be aggressive. Lessons learned activities with GDLS SH and Mowag	
	Legend:		Green	= All deliverables are on schedule or retimed to customer satisfaction.											
			RED	= If at least one deliverable in the Initiative missed its due date, or is in jeopardy of missing due date.											
			Done	= If all deliverables are completed.											

Metrics Scorecard

Purpose: On one page, shows whether the organization is achieving their targets for performance.

- VISUAL CONTROL of where the organization is performing to target and where it is not (Green or Red)
- Forecasts whether or not year end targets will be met
- Clearly identifies who is responsible
- Clearly identifies what the target performance needs to be achieved (both monthly and year-end performance)
- Enables mid-year adjustments as business conditions unfold
- Each metric usually has a graph or chart as the next layer of detail if needed
- Year-end performance is documented as soon as the December performance is logged

Central Manufacturing Engineering Metrics Scorecard - 2000

Metric	Monthly Target	Owner	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year End Target	YTD
IMPROVE SAFETY PERFORMANCE																
Ergonomics: Hazard Elimination (# of projects > 60 days)	Zero	Bowling	7	7	7	2	2	0	0	0	0				0	0
Ergonomics: Permanent Improvement (# of projects > 6 mo)	Zero	Bowling	17	13	12	14	15	12	11	9	8				0	8.0
Recordables within C.M.E. (red if current month > rate) **	Rate < 5.17/100/yr	Schaefer	0.0	16.3	0.0	11.0	0.0	0.0	9.3	16.5	6.5				<5.17 **	6.3
Lost Work Days within C.M.E. (red if current month > rate)	Rate < 1.41/100/yr	Schaefer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				<1.41 **	0.0
REDUCE MANUFACTURING COST																
Operating Expense to Budget (\$K variance)	> Zero	Hoebbel	13	-265	40	-8	-100	-18	-121	16	850				> 0	2489
CIP to Target for GMLG (\$M)	> Priorate to \$ 10.5M	Hoebbel	2.6	0.6	1.3	0.5	1.21	0.0	0.8	2.8	n/a				> 10.5 M	16.1
CIP to Target for CME (\$K)	> \$ 97 K	Hoebbel	15	1	97	160	80	0.0	216	1	193				> 1,170 K	776
Utility Cost to Budget (\$K variance)	> Zero	Shaffer	152	105	85	3	17	-40	-75	-27	-63				> 0	156
IMPROVE RESPONSIVENESS																
Past Due on LaGrange Cranes (count: last week)	Zero	Sykora	0	0	0	0	0	0	0	0	0				0	0
Past Due on LaGrange Mobile Equip. (count: last week)	Zero	Sykora	240	36	0	0	0	0	0	0	0				0	0
Closure on Safety Action Item List (count at end of month)	< Prorated opens	Sykora	352	274	268	286	296	295	224	263	254				< 200	263
Business Plan Missed Deliverables (% deliverables <u>met</u>)	< 5.0 %	Harvey	33	57	50	3.0	3.0	2.0	3.1	3.8	4.2				< 5.0	3.8
Supplier delivery to schedule - LaGrange (K PPM) **	< 30K PPM	McKinley	27	36	28	33	29	34	24	29	33				< 30 K *	31.8
Supplier delivery to schedule - London (K PPM) *	< 30K PPM	McKinley	48	26	28	34	29	31	27	32	27				< 30 K *	30.3
IMPROVE QUALITY																
Unscheduled Interruptions to LaGrange (std hrs lost)	Zero	Coons	25	12	0	462	0	0	0	0	0					
Housekeeping Audit Performance (# areas > 88%)	at least 8 of 10 areas	Sykora	1	1	0	0	0	1	1	1	1				8	1
Rework Situations (count / month)	Zero	Coons	4	0	2	2	0	1	1	0	0					
Engine Plant Penthouse Supply Blower Status (count)	< 5% down	Heldorn													< 5% down	2
Supplier quality - LaGrange (PPM) *	< 800 PPM	McKinley	1046	907	680	645	219	294	185	664	677				< 800 *	451
Supplier quality - London (PPM) *	< 1000 PPM	McKinley	419	304	625	1059	840	674	1548	816	605				< 1000 *	654
HIGHER LEVELS OF EMPLOYEE PARTICIPATION																
Suggestion Process Rate within CME (%)	> 60%	Minott	19	29	21	49	59	81	77	86	90				> 60	90
Suggestion Participation within CME (%)	>Prorate to 30%	Minott	4	0	16	20	27	33	34	37	47				> 30	47
Suggestion Referral within CME (days)	< 60 days	Minott	98	103	100	98	95	77	86	25	25				< 60	25
Training to Plan (average hours / individual)	3.3 hours	Farmer	0.9	3.0	2.4	3.6	2.3	5.2	1.9	4.0	4.3				40	29.8
Controllable Absenteeism (%) **	< 2.0 %	Schaefer	2.2	1.2	2.1	1.8	2.2	2.8	2.9	3.2	3.2				< 2.0 **	2.2
Visual Control Coverage (workshop area covered in K sq ft)	6.7 K ft ²	Anderson	2.8	3.3	10.7	1.2	1.5	9.8	30.9	436	0				80	490.5

* Year end target is a six month rolling average
 ** Year end target is a twelve month rolling average

Central Manufacturing Engineering Metrics Scorecard – Year 2000

Metric	Monthly Target	Owner	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year End Target	YTD
IMPROVE SAFETY PERFORMANCE																
Ergonomics: Hazard Elimination (# of projects > 60 days)	Zero	Bowling	7	7	7	2	2	0	0	0	0				0	0
Ergonomics Permanent Improvement (# of projects > 6 mo.)	Zero	Bowling	17	13	12	14	15	12	11	9	8				0	8.0
Recordables within C.M. E. (red if current month > rate) **	Rate < 5.17/100/yr	Schaefer	0.0	16.3	0.0	11.0	0.0	0.0	9.3	16.5	6.5				<5.17 **	6.3
Lost Work Days within C.M.E. (red if current month > rate) **	Rate < 1.41/100/yr	Schaefer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				< 1.41 **	0.0
REDUCE MANUFACTURING COST																
Operating Expense to Budget (\$K variance)	> Zero	Hoebbel	13	-265	40	-6	-100	-18	-121	16	850				> 0	2489
CIP to Target for GMLG (\$M)	> Prorate to \$ 10.5M	Hoebbel	2.6	0.6	1.3	0.8	7.1	0.0	0.8	2.8	n/a				> 10.5 M	16.1
CIP to Target for CME (\$K)	> \$ 97 K	Hoebbel	15	1	97	160	80	0.0	216	8	193				> 1,170 K	770
Utility Cost to Budget (\$K variance)	> Zero	Shaffer	152	105	85	3	17	-40	-75	-27	-63				> 0	156
IMPROVE RESPONSIVENESS																
Past Due on LaGrange Cranes (count: last week)	Zero	Sykora	0	0	0	0	0	0	0	0	0				0	0
Past Due on LaGrange Mobile Equip. (count: last week)	Zero	Sykora	240	36	0	0	0	0	0	0	0				0	0
Closure on Safety Action Item List (count at end of month)	< Prorated opens	Sykora	332	274	266	286	296	285	224	263	254				< 200	263
Business Plan Missed Deliverables (% deliverables red)	< 5.0 %	Harvey	3.3	5.7	5.0	3.0	3.0	2.0	3.1	3.8	4.2				< 5.0	3.8
Supplier delivery to schedule - LaGrange (K PPM) *	< 30K PPM	McKinley	27	32	28	33	29	54	24	29	33				< 30 K *	31.1
Supplier delivery to schedule - London (K PPM) *	< 30K PPM	McKinley	42	26	29	34	29	31	27	32	27				< 30 K *	30.3
IMPROVE QUALITY																
Unscheduled Interruptions to LaGrange (std hrs lost)	Zero	Coons	25	12	0	462	0	0	0	0	0					
Housekeeping Audit Performance (# areas > 88%)	at least 8 of 10 areas	Sykora	1	1	0	0	0	1	1	1	1				8	1
Rework Situations (count / month)	Zero	Coons	4	0	2	2	0	1	1	0	0					
Engine Plant Penthouse Supply Blower Status (count)	< 5% down	Heidorn								19	2				< 5% down	2
Supplier quality - LaGrange (PPM) *	< 800 PPM	McKinley	1046	907	680	645	219	294	185	664	677				< 800 *	451
Supplier quality - London (PPM) *	< 1000 PPM	McKinley	419	304	625	1059	840	674	1548	816	605				< 1000 *	654
HIGHER LEVELS OF EMPLOYEE PARTICIPATION																
Suggestion Process Rate within CME (%)	> 60%	Minott	19	29	21	49	59	81	77	86	90				> 60	90
Suggestion Participation within CME (%)	> Prorate to 30%	Minott	4	9	16	20	27	33	34	37	47				> 30	47
Suggestion Referral within CME (days)	< 60 days	Minott	98	103	100	98	95	77	56	25	25				< 60	25
Training to Plan (average hours / individual)	3.3 hours	Farmer	0.9	3.0	2.4	3.6	2.9	5.2	1.9	4.0	4.3				40	28.4
Controllable Absenteeism (%) **	< 2.0 %	Schaefer	2.2	1.2	2.1	1.8	2.2	2.9	2.3	3.2	3.2				< 2.0 **	2.2
Visual Control Coverage (workshop area covered in K sq ft)	6.7 K ft ²	Anderson	2.8	3.3	10.7	1.2	1.5	9.8	30.9	436	0				80	490.5
* Year end target is a six month rolling average																
** Year end target is a twelve month rolling average																

Resource Allocation Matrix (done once at the beginning of the year)

ASSESSMENT (March 16, 2000)

Headcount allocation to Initiatives

SAFETY

	D HARVEY	F WEST	T BUMP	D KOZAK	Supplier Quality	Contract	R. KUMAR	M McKINLEY	Supplier Dev.	Contract	S COONS	Ergonomics	Facilities Plan	IE Operations	CIP admin	Contract	K SCHAEFER	K ERICKSON	Plant Engineering	Contract	G SYKORA	Grounds & Equip	Contract Housekeeping	K KIRK	Construction	W HEIDORN	Utilities	J KAPS	Environmental	Contract	R YONKER	R FARMER	Cost records	E STRONG	Launch support	Contract	K IRWIN	R KOZIEL	TOTAL									
S-1 Ergonomics											0.1	0.7	0.2	0.6		0.4	0.1	0.1	0.8	4.5	0.0	0.1	0.1	0.1	0.2		0.1	0.1	0.1														8.3	TOO HIGH				
S-2 Safety reports													0.1	0.1	0.2	0.1		0.0	0.0		0.1	0.2	0.6	0.1	0.1	0.0	0.1			0.1																1.8		
S-3 Director safety audits	0.1																				0.0				0.0																					0.2		
S-4 People involvement													0.1	0.1						0.6	0.6	0.1	0.3	0.4	0.1	0.1	0.1	0.2		0.0																2.6		
S-5 Designed in Safety												0.1	0.1					0.0											0.1	0.0	0.1																0.4	

COST

C-1 CIP for GMLG											0.1	0.2	3.0	0.9	0.8		0.0	0.0	0.2	0.4	0.0			0.0		0.0	0.2	0.1	0.0																	5.9	TOO HIGH			
C-2 CI mfg equip											0.1		0.2	2.5	2.9		0.1	0.1	1.2	0.3	0.0	0.0	0.2						0.1																			9.3		
C-3 Machine replacement													0.1	0.5	0.0						0.0	0.1							0.0	0.1																		1.5		
C-4 Next gen mfg.	0.1													0.1																																	0.5	TOO LOW		
C-5 Utilities use and cost																			0.1								0.0	0.4	0.1	0.4	0.2																		1.2	
C-6 DFM: SD89MAC	0.1					0.5					0.1			0.6																																		1.4	TOO LOW	
C-7 Suppliers outside N.A.			0.1	0.0	0.0		1.0	0.0	0.0									0.0																															1.1	

RESPONSIVENESS

R-1 Business practices	0.1	0.2									0.1			0.7			0.1				0.1			0.0					0.0																			1.5		
R-2 Project work thru-put											0.1		0.9		0.6		0.1		0.1	0.0	0.0		0.1	0.1	0.1	0.0			0.0	0.0	0.2																		3.8	
R-3 On-time PM																			0.1		0.1	1.5			0.0	0.1	0.0	0.1		0.0	0.1																		2.0	
R-4 Facilities plans	0.1										0.1	2.6	0.3	1.5			0.1	0.2	0.1			0.1	0.0	0.0	0.0			0.1	0.0	0.2																			5.4	
R-5 H engine			0.2	0.2	1.4	0.2	0.0	0.0	0.6				0.1	0.4			0.0	0.1	0.3	0.2								0.1																					5.3	
R-6 New business	0.1												0.4	0.2					0.1								0.0	0.0																					1.3	
R-7 Supplier delivery			0.4	0.1	0.6	0.1	0.0	0.6	6.0	2.0																																							9.8	

QUALITY

Q-1 Improve facilities											0.1	1.2	0.5	0.1			0.1	0.2	3.1	2.7	0.2	1.9	1.3	0.2	2.0	0.4	0.8	0.0	1.0	0.5																			16.3	TOO HIGH	
Q-2 Environ & recycling													0.2		0.1				0.4	0.2	0.0		0.1	0.0	0.1	0.1	0.2	0.1	1.4	0.6																				3.5	
Q-3 ISO 14001	0.1																		0.4							0.1	0.1			0.3	0.6	0.3																		1.9	TOO LOW
Q-4 Emissions Programs	0.1		0.1	0.0	0.8	0.2	0.0	0.0	0.0				0.2					0.0	0.2	1.2	1.0				0.0	0.1	0.0	0.1	0.0	0.1																			5.1	TOO LOW	
Q-5 Business continuity														0.2															0.0																					0.3	
Q-6 Supplier Quality			0.2	0.7	3.7	2.5	0.0	0.4	0.4	1.0																																								9.1	

EMPLOYEES

E-1 Suggestions												0.2	1.6	0.2			0.1	0.1	0.6	0.7	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.1																			4.3	TOO HIGH			
E-2 Workplace org.												0.6	0.4	0.1				0.0		0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.3																						2.0		
E-3 Training plan																		0.0	0.0	0.1								0.6																							0.8	
E-4 QN strategies	0.1	0.1										0.1									0.0								0.0	0.1																					0.4	

ADMIN - MISC.

	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.8	0.1	0.4	0.3	0.1	0.6	0.5	0.3	0.8	0.4	0.3	0.6	0.2	0.4	0.1	0.3	0.2	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	TOO HIGH
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TOTAL NEEDED

	1.0	1.0	1.0	1.0	7.0	3.0	1.0	1.0	7.0	3.0	1.0	1.0	7.9	12.6	1.0	7.2	1.0	1.0	9.6	11.8	1.0	5.2	3.4	1.0	3.6	1.0	3.8	1.0	4.7	2.4	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	0.2								115.4	
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BUDGETED H.C.

	1.0	1.0	1.0	1.0	6.0	3.0	1.0	1.0	6.0	3.0	1.0	1.0	6.0	10.0	1.0	7.0	1.0	1.0	7.0	9.0	1.0	4.0	3.0	1.0	3.0	1.0	3.0	1.0	3.5	1.8	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	0.2								98.5	
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VARIANCE

	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	-1.9	-2.6	0.0	-0.2	0.0	0.0	-2.6	-2.8	0.0	-1.2	-0.4	0.0	-0.6	0.0	-0.8	0.0	-1.2	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-16.9	
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