



**CUSTOMER
MANUFACTURING
GROUP**

DEVELOPING A FULLY INTEGRATED, EFFECTIVE PRODUCT DEVELOPMENT PROCESS

A CUSTOMER MANUFACTURING GROUP CASE STUDY

**Process development
was time and activity
optimized with a
downstream eye
focused on the overall
consolidated process
optimization.**

A Cautionary, Advisory Note:

A Process Improvement (PI) project will produce changes, for example, in activities, in responsibilities, in activity or event times and timing, in objectives, in information requirements, and most importantly in performance and performance measurement.

“Change” often creates its own inertia due largely to the fear of it. It also brings to the surface many cultural and internal operations constraints that must also be resolved along with the functional and technical aspects of the process itself. In CMG’s experience, management in general and senior management in particular are often the most affected by change which in-turn may surface some of the hidden barriers and reluctance to implement a new process. A company’s culture often becomes evident when change is introduced.

The following case example is a synopsis of the functional and technical aspects of this client’s processes. But make no mistake, the necessity of taking executive management’s willingness to change into account in the project work was a significant consideration.

The Background:

A well-recognized developer and manufacturer of branded, high volume consumer products realized that their end-to-end life-cycle process (from product conception to delivery) was taking “too long” and placing them at a disadvantage in their highly competitive market.

The Company:

The company had designed and developed a unique concept for the design and manufacture of its products. The design aspect had distinctive appeal to its target market and provided its customers with a novel approach in learning how to use the products in a creative and constructive manner.

The products were marketed primarily to both national and international large retail stores as well as co-marketed through specialized sales sources. They also enjoyed a smaller volume of sales through their own on-line resources. The products were developed for various market types depending on the consumer and channel(s); standard and non-standard, licensed and non-licensed, etc.

Their Issue:

Many of the company’s large retailers were characterized by long lead time buying cycles ahead of their targeted shelf dates, which were quite often fore-shortened in order to be competitive with seasonal customer buying. In addition, these consumers often changed their minds on which of the company’s products they wanted to stock, again depending on their assessments of pending customer demands. There were also other types of “interrupts” that caused the company to frequently revise its design and manufacturing processes.

The impact of these changes often brought the company’s design, production, and mar-

keting resources to a stand-still, stopping some activities entirely, re-prioritizing their internal operation activities, and adding additional cost to the finished products.

Further, the company's own lengthy internal processes often put them at a delivery disadvantage with their larger competitors and frequently put many activities on-hold well after design and production had already been committed.

Customer Manufacturing Group's Role:

Based on CMG's reputation and experience, particularly in the area of Sales/Marketing Process Improvement, the company's CEO engaged us to assist them in an end-to-end process improvement project, the full scope of which would be determined after CMG had the opportunity to assess their needs.

CMG would employ its Process Improvement Development procedures and protocols to serve as the skeletal framework or model around which the company's employees would provide the content-rich elements comprising the process. It was CMG's responsibility to teach the "process-process" to the client's personnel, and to guide and assist them in each process improvement step along the way (and to play the role of sergeant-at-arms at times to keep the troops pointed at and moving toward the objective).

CMG's Process Improvement (PI) process involves two overall major activities with the client's project personnel: 1) Defining, discussing, flowing and diagramming the current "As-Is" process and then, 2) Developing the required (or at least desired) "Should-Be" improved process along with its detailed work flow, functional and departmental responsibilities, objectives and performance metrics.

In order to fully flesh-out the As-Is (AI), the company's team was required to identify and quantify (to the best of their ability and information systems) the time and resources required in each process activity or event. This was truly an eye-opener for all involved.

As we initiated the Should-Be (SB) process we began to employ the process improvement principles outlined at

the conclusion of this case study, Process Improvement Techniques Utilized.

In both the AI and SB processes, we adhered to the management principle of, "You can't manage what you can't measure nor measure what you can't define." Such measurement — of what needs to be measured — replaces the anecdotal "we think" with an objective "we know," or in the case of the SB, "what it needs to be."

CMG's engagement with the client consisted mostly of two half-day, on-site sessions a month, with some full-day team meetings. The overall project for CMG lasted for nearly ten months. This turned out to be a larger participation than originally anticipated for reasons explained in the following section. Our participation was concluded when the SB processes were approved by our client's corporate management as ready to begin process implementation

What We Found:

The project was initially thought to be a single process called "The Line Process" and the initial AI activities were begun on this basis. However, by the conclusion of the second PI meeting with the process teams it was obvious to all — most importantly to the client — that we were really dealing with three distinct processes that when integrated formed the overall (newly named) "Product Life Cycle" process.

This master process was broken down into three component processes of 1) Product Concept to Financial Review; 2) Generating Consumer Demand, and; 3) Line Planning Process. The necessary integration of these became readily evident with the many cross-over and information exchange points and activities. Nevertheless, each of these had many areas of required improvement, and their SB process development was time and activity optimized with a downstream eye focused on the overall consolidated process optimization.

Accordingly, the client's overall process improvement team personnel were broken down into three corresponding

process teams, and due to the high level of process integration, at least one member in each team was appointed as liaison with at least one (sometimes two) of the other teams.

The total activities of all three teams involved information development and exchange, communication and integration with five of the company's major functional activities: Design Packaging and Engineering, Operations, Marketing/Web/PR, Finance, and Sales. Each of the three teams had some activities and events distinctive to their specific areas of responsibility with one or more of these functional areas, and as stated previously, integrated sharing with each other.

This was an enormous undertaking for everyone involved. And, as the team members decided, the PI activities (for both the AI and SB) would be regarded as a major part of their duties, and not as an adjunct to them. As a whole, this was considered to be a chance for the company to tackle and resolve an increasingly larger operating problem as the company grew — the lack of integration and coordination and the huge amount of wasted time and effort in false starts, re-starts, changes, etc.; *it had* to be fixed and *they* would fix it.

Improved Processes

Each of the three processes had their own as well as integrated process short-comings, and because one flow-stream fed another, the enormous consumption of time and error-prone processing and decision-making multiplied as products and related information stumbled through the overall AI system.

Process flaws and their causes and effects abounded throughout, some unique to a particular process and many common to all three. Here are some examples of the AI constraints that were eliminated in the SB processes overall:

1. Repetitive/redundant reviews (product design, financial, uncertainty, etc.)

In two of the three processes, with a total of 148 activities/events, there were 74 internal review/approval gates,

or 30% of activities. These consumed enormous time with the effect that product insertion into the market was often substantially delayed.

These were reduced to 30 reviews overall or 12% of the total activities. As a category, this reduction was one of the most significant process time reductions.

2. Status quo management (the bane of process improvement — and many other things for that matter)
3. Timing misalignment of planning information delivery to executing departments
4. Delayed decision making resulting in much work-in-process stacking up
5. Lack of formal analysis of product demand causing multiple reviews and revisions
6. Incomplete new planning year data in timely fashion causing panic drills later on
7. Doing everything on absolute best-case basis causing instant capacity overload in all affected departments throughout
8. Manufacturing-driven capacity planning without regard to realistic product demand (“just in case”) causing excessive WIP, slow-moving inventory, unbalanced line, etc.
9. Constantly starting/stopping projects to “put out fires” with constantly changing priorities
10. Lack of non-standard product processes and late ROI review and approval causing wasted effort and erroneous capacity analysis
11. Lack of standard, formal processes for new license products resulting in inconsistent and inaccurate information, error-prone inventory builds and false capacity loads through all functional departments

- 12. Frequent wait or queue time delays from department-to-department or work cell-to work cell for lack of information of various types
- 13. Lack of CEO and executive management approval criteria for new planning year; a wait-and-see approach causing information and execution delays resulting in wasted resource utilization through moving ahead with the wrong stuff
- 14. People not empowered to make critical go/no-go decisions at approval gates
- 15. Lack of Stage-Gate criteria to approve or drop projects; gate “deliverables” not defined

The Results:

Process Flow Times

Below is the achieved bottom-line process improvement evidenced by the overall SB process, remembering that the project objective was to significantly reduce the amount of time required to move a product from ideation to consumer-ready.

These times are representative composites of the many different types of products mentioned at the beginning of this paper (consumer and channel(s); standard and non-standard, licensed and non-licensed, etc.)

	Best Case ^A	Worst Case ^B	Difference
Project As-Is; standard time (days)	117	251	134
Project Should-Be; projected time (days)	24	151	127
Time Reductions (days)	93	100	7
% Improvement	79%	40%	

A. Best Case: Line (and other resources) not at full capacity, no customer product or schedule interrupts (example; consumer wants Christmas season product moved up to Halloween or even Fourth of July), no senior manage-

ment re-prioritization, product design changes, and so on. Some allowances for anticipated changes.

B. Worst Case: Full capacity, unanticipated customer changes, internal design changes, competition-driven product changes, packaging changes, various senior management interrupts.

Quality of Decisions and Work Accomplishment

In addition to the substantial compression of process time, once the company realized the benefits that could be achieved through improved processes, the project was expanded to include not just the “whats” of the processes but also to tackle the more detailed levels of the processes and to address many of the “hows.” For example, each process team defined the new measurements and their metrics that were to be used to monitor process performance and to guide them in making continuous improvements to the flows, decision-making, and performance quality.

This would translate to producing the right products, at less cost, to the right markets and consumers, at the right time.

Process Improvement Principles Employed:

There are many PI principles that can be utilized in improving a process, whether it be in the product/process/information flows, managerial decision-making, eliminating stagnant or status quo thinking, resource utilization, and so on. These are the most productive PI principles Customer Manufacturing Group employs in its clients’ PI projects.

Process Management (PM)

PM defines that all work is done via documented processes with controls, feedback, and performance measurement.

Constraint Analysis (CA)

CA defines how to allocate resources such that total system throughput is optimized.

Continuous Improvement (CI)

CI defines the mentality and processes for discovering how to continuously improve the performance of each activity within the process . . . and of the entire process.

Lean Thinking (LT)

LT describes the attitude of applying ‘just enough’ resources to an activity to get the job done with *no waste*. Within the *Customer Manufacturing System*® philosophy, we apply LT to the entire process as a whole and combine it with CA, in effect “balancing the line” from start to finish with just the right amount of appropriate resources applied at the right time.

Process Improvement Techniques Utilized

CMG used a few of the many recognized tools of PI to enable the client to achieve their desired performance improvements. We have incorporated three of these tools — and modified them somewhat — to better serve our clients in assisting them in redesigning their business processes. These tools are:

1. **The “A3” Document.** It is a document format that is used to identify the project, goals and objectives, background, current conditions/situation, target condition and team for each specific process to be improved. It is a crucial PI starting document.
2. **Process Flow Chart Activity Mapping.** This identifies each event and activity, what it is, who does it, when is it done, and how much time is required. Further drill-downs can include measurement metrics. It identifies the input to the event/activity (from whom or where) and its output (what to whom or where). Flow charts are done for both the As-Is and the Should-Be processes.
3. **Cause and Effect Diagram.** Sometimes referred to as the “Fish Bone” diagram and “Ishikawa Chart” (after its creator Ichiro Ishikawa), it is used to present a graphic representation of current AI problems or conditions in a

process and their apparent causes. Its use is to identify the root cause of a problem; what you want to solve.

These documents and their supporting materials are contained in CMG’s “Process Improvement Development Kit” which we employ on-site with our PI clients.

4. **Check Sheets.** These are not only one of the easiest-to-use quantitative process measurement tools, they are an excellent place to start your practice of gathering and analyzing data. They can also serve to begin to instill a rigorous approach to collecting factual data on a consistent, reliable, accurate (if done correctly) and continuous basis.

Other Process Improvement Measurement Tools Available

For more detailed information on the above tools and for additional measurement tools such as Control Charts, Histograms, Pareto Charts and Scatter Diagrams, please refer to our Website and the “Free Stuff” White Papers section on ‘Process Management.’

More Information About CMG

If you would like more information about how to apply a process to improve your marketing/sales function, simply contact us and we’d be happy to help you get started. From sweeping marketing/sales management process strategies to specific branding or product launch services, Customer Manufacturing Group can help.

If you’d like to learn more about Customer Manufacturing Group, or for a complimentary subscription to Customer Manufacturing Updates, give us a call at (800) 947-0140, fax us at (408) 727-3949, visit our website at www.customermanufacturing.com, or e-mail us at info@customerfmfg.com.

We have offices in major cities in the United States, and our experts travel extensively throughout the world. If you’d like to schedule a meeting when we’re in your area, just let us know.