Affiliates News

July / August 2009

Insyte consulting

Inside:

Going "Green?" — Insyte can help 716.636.3626

Kee Reduces New Product Time-to-Market by Over 50%

Getting a new product to the customer on a timely basis is a common concern among manufacturers. Delayed product introduction may cause missed opportunities for creating revenues or customer dissatisfaction. Learn how one WNY company reduced their new product time-to-market by over 50% while generating company growth.

The Kee Safety New Product Development Team refines a product development plan using a Milestone chart.

Kee Safety, Inc. is a leading global supplier of components and custom systems for railings, barriers, roof edge protection and fall prevention. Their products must meet strict requirements from OSHA and other regulatory agencies. The North American headquarters, located in Buffalo, NY, employs approximately 30 people and operates as an independent subsidiary of a global company based in the United Kingdom (UK). Kee Safety's products are sold via specialized industrial product distributors, dealers and manufacturers' reps.

Situation—A Challenge to Quadruple New Products and Halve Development Time

Historically, new products for the U.S. market were developed and manufactured in the UK and introduced to North America at a modest pace of about one product per year. The U.S. product introduction process involved testing to ensure compliance with U.S. safety and building code requirements. In some cases designs had to be modified and U.S. suppliers qualified for manufacture in the U.S., subsequently lengthening time-to-market. Fortunately the limited number of new products enabled Kee Safety's staff to handle the new product process on an as-needed basis, among their other responsibilities.

In late 2008, the UK Corporate Headquarters evolved its strategy to place greater emphasis on growth via new products, and to permit Kee Safety North America to develop new products to meet U.S. market needs and hopefully be sold worldwide. The initial Kee Safety North America goal for 2009 was to introduce four new product line extension products and a major new product line. Mike Mumau, President, quickly recognized that their current process of handling new products was not scalable to meet the challenge of introducing multiple new products in 40% to 50% less time. Mike concluded that he would need a more robust product development process, and that his New Product Development Team (Team) could benefit from training and guidance in managing a new process for rapid product development and introduction. He contacted Insyte Consulting for assistance as a result of a referral from another WNY company.

Kee Safety continued on page 7

President's Message

Where are YOU looking for change?

by Benjamin Rand

There is an old joke about a man searching for his keys one night under a streetlight. A passerby stops to help and after a few fruitless minutes he asks, "are you sure you dropped them here?" "Oh no," says the man, "I dropped them way over there, but the light is much better here." Many companies use similar logic when they seek to make improvements by focusing on what they can most easily see (or measure) rather than what is most important. For example, many manufacturers look for cost and cycle time improvements on the manufacturing floor, in part because they can measure and track these things easily. Certainly these are important items, but are they your biggest opportunity? W. Edward Deming himself, the father of modern quality thinking whose teachings are at the heart of the Toyota Production System, believed that the factory only offers 3% of the improvement opportunities for a company, meaning 97% were elsewhere in the company. So where are they?

Consider your office for a moment. That beehive of activity is really a series of processes, many of which may be poorly understood and documented, but processes nonetheless. These processes are often hard to see, "hidden" in cubicles and conferences rooms, unlike manufacturing processes which are in full view in large, open shop floors. Yet some of your most important business processes are office processes-engineering, design, marketing, estimating and product development to name a few. These processes are critical to your success and are usually run by some of your most valuable and expensive people – senior managers, engineers and marketers. Because relatively few companies map, measure and track these activities well, there is no "streetlight" shining on these processes. As a result, few recognize that improving a certain office process may be their biggest, highest value opportunity. What if you could develop and launch twice as many new products in a year? What if you could quote work faster and/or more accurately than your competitors?

I know what you are thinking "please, not another improvement program!" Yes, this is an improvement program, but not a flavor-of-the-month idea. Office improvement is based on and uses the same thinking and tool set as the lean/six sigma process improvement work that many companies, especially manufacturers, have been using successfully for years. It is not rocket science or alchemy, it is basic blocking and tackling DMAIC (Define – Measure – Analyze – Improve – Control). By taking these concepts into the office, you take them beyond the realm of manufacturing and make them applicable to services, healthcare, construction or any other business with office processes.

The only challenging part is the change itself, especially when it comes to you – the senior management of the business. Doing things differently is never easy on an organization and change will simply not happen unless the boss is committed to it. And everyone knows whether or not you are committed to it. They read it in everything from your body language to your tone of voice. There is no fooling your own people. So my advice is only take-on an office improvement project if you are really committed to making a positive change. Otherwise, just keep looking under that streetlight and you will save yourself a lot of time and trouble. After all, as Deming said: "It is not necessary to change. Survival is not mandatory."

Insyte Consulting is a not-for-profit economic development organization that receives significant financial support from the New York State Foundation for Science, Technology and Innovation (NYSTAR), New York's high-technology economic development agency, and the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP). Insyte Consulting serves as NYSTAR®'s designated Regional Technology Development Center for the Western New York Region and one of nearly 350 MEP locations across the country and works directly with regional companies to increase their competitiveness and profitability.

Preventing Feature Creep in Product Development

by Robert Kosobucki

Feature Creep Costs Time-to-Market and Money

"What's taking so long to complete the new design?" and "Why is the product cost so high?" are often heard complaints from managers, sales people and customers regarding new products under development. Frequently, delays and increased product cost are caused by the addition of features that were not in the original specifications such as higher quality, greater reliability, or increased capability.

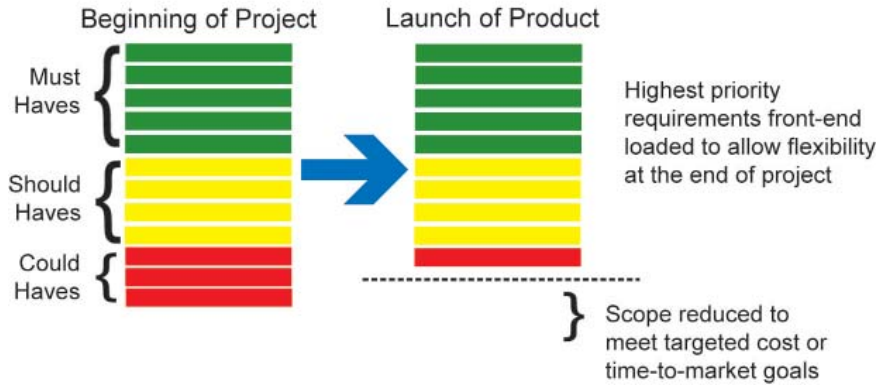
We Have Met the Enemy, and It Is Us?

Who's the guilty party that adds these 'extra' requirements? Well, any of the following are possible:

- Top managers may dictate inclusion of features based on a discussion with one irate customer.
- Sales people may insist on particular features because their absence was the perceived cause for the recent loss of a sale.
- Marketing people may want to ensure that they can also sell to the wider range of users.
- Company founders may insist on features because of their 'gut feel.'
- Customers may ask for extra features without understanding their true need, or the impact of their request on cost or delivery.
- Development engineers may include extra features because:

1. It's a 'cool' feature; so who wouldn't want it.
2. I'll include a particular feature 'just in case.'
3. The customer will eventually ask for it once they see it.
4. No one told me not to include it.
5. That's the way we've always done it.
6. We were 'burned' that one time fifteen years ago when we didn't include something like this for that customer who has since gone out of business.

Figure 1



Doing Less to Get More Done

One successful technique for completing development on time is to completely specify the product up front. That is:

1. Highly define and prioritize features for narrower market application instead of one version for everyone.
2. Investigate the priorities among customer requirements and differentiate between 'nice to have' and 'should have' requirements.
3. Focus development work only on the pre-defined set of specifications. Also identify design aspects which are at risk of changing during the design, and focus on bringing certainty to them.
4. Lay out a product roadmap of a series of product models or feature additions to be released over time. Design around a product 'platform' with reusable or modifiable sub-modules to increase design efficiencies and generate more new products and upgrades faster.

Must-Should-Could Technique for Sorting Out Features

A long list of product requirements can be categorized as follows to prioritize development efforts:

Must Have:
No one will buy the product, or it may not work, without these features.

Should Have:
These requirements are highly valued and some may exceed what is competitively available, but they differentiate the product in a meaningful way to the targeted customers.

Could Have:
Sometimes referred to as 'nice to have' features, these items may not be requested nor are they highly valued by most customers even though they differentiate the product.

Figure 1 shows how requirements can be prioritized for completion. The product can be brought to market faster by spending time on Must Have require-

Product Development continued on page 8

WNY Companies Receive $6.5 Million for Innovative R&D

Small businesses in the WNY region received almost $6.5 million in 2008 through the U.S. Small Business Innovation Research (SBIR) and Small Business Technology Transfer Research (STTR) programs.

As detailed on the table on page 5, fourteen local companies received twenty-two SBIR/STTR awards in 2008. Award amounts ranged from $80,000 to $749,955 and covered a wide range of technologies. The data in the table were compiled by Insyte Consulting from the websites of the eleven federal agencies that participate in SBIR/STTR.

The SBIR and STTR programs provide grants and contracts to U.S. businesses with 500 or fewer employees to conduct innovative research and development with strong commercialization potential. These programs awarded over $2 billion nationwide in 2008.

Agencies that participate in the program issue solicitations for proposals throughout the year on a wide variety of research topics. Proposals are evaluated based on their fit with the solicitation, degree of innovation, technical merit and capabilities, and commercialization potential.

Insyte Consulting is the NYSTAR-designated SBIR/STTR specialist for the Western New York and Finger Lakes regions. Insyte provides information and assistance to local companies including help identifying appropriate solicitations, coaching about proposal development, and commercialization assistance. Because of NYSTAR's financial support, there is no charge for this assistance. Contact us at 716.636.3626 for more information or to be added to our SBIR email information list. ❖

Three Phases of SBIR/STTR

Phase	Typical Funding	Work Period	Objectives
Phase I	Up to $100,000	Six Months	Proof of Feasibility
Phase II*	Up to $750,000	18-24 Months	Primary R&D / Develop to Pre-Production
Phase III	No SBIR Funding	Ongoing	Commercialization

* Only Phase I winners will be considered for Phase II funding.

SBIR Profile

Company: Kinex Pharmaceuticals, LLC

Year Founded: 2004

What They Do: Kinex is developing next generation cancer drugs. Among them is KX2-391, which completed Phase 1 human clinical trials. Several Phase 2 clinical trials are expected to begin this year.

SBIR Funds Received to Date: $1,062,063

Most Recent SBIR Award: $955,063 from National Institutes of Health in 2009 to fund research and development efforts to identify and develop biomarkers for potential use in monitoring disease in patients receiving KX2-391.

Other Funding Raised: Kinex has raised approximately $14 million in other equity and grants. ❖

SBIR Profile

Company: Nanodynamics, Inc.

Year Founded: 2002

What They Do: NanoDynamics, Inc. develops and markets technologies, advanced materials and products that provide clean technology solutions addressing today's global challenges. With a principal focus on the energy, environmental and infrastructure markets, NanoDynamics offers products for portable and distributed power generation, water, air, and soil remediation, and highly advanced materials for infrastructure and other applications.

SBIR/STTR Funds Received to Date: $3,186,869

Most Recent SBIR Award: $733,000 Phase II SBIR grant from the U.S. Army to continue development of nano-scaled materials for use in defensive obscurants.

Other Funding Raised: Has raised over $50 million in private equity since inception to fund the development and commercial launch of technologies, materials and products. ❖

SBIR/STTR Awards FY 2008 - Buffalo/WNY

Company	Topic	Agency
AndroBioSys, Inc.	Circulating Prostate Cancer Progenitor Cell Assay Development	DOD, Army
Buffalo Molecular Target Laboratory	Ultra-HTP Multiplex Approach to Small Molecule Screens	NIH
Calspan Corporation	Pedestrian Exposure Measurement Technology Development	DOT
ENrG	Space Power and Propulsion	DARPA
	Energy Storage Systems for Very High Altitude Very Long Endurance Solar Aircraft	DARPA
Esensors Inc.	High Resolution Tunable Receiver for Remote THz Sensing	NSF
First Wave Technologies, Inc.	Use of GtfB as a Diagnostic for Caries Activity	NIH
Innovative Biotechnologies International	Simple & Rapid On-site Molecular Detection of Mycobacterium Tuberculosis	NIH
Janya Inc.	Consolidating Entity Information from Heterogeneous Text Sources for Multi-INT Fusion	DOD, AF
	Customizable Text Extraction for Warfighters	DOD, AF
	Advanced Time-Stamping of Events from Unstructured Text for Battlespace Awareness	DOD, AF
L.K. Industries, Inc.	Modeling & Simulation for Optimization of Heavy-Fuel Micro Rotary Engines	DOD, OSD
Lam Design Management, LLC	A 3-D Robot Design to Overcome Arm Dysfunction in Stroke	NIH
Nanodynamics, Inc.	Nano-Scale Materials for use in Defensive Obscurants	DOD, ARMY
Therex, LLC	Improved Tissue Regenerative Device for the Oral Cavity	NIH
Therapyx, Inc.	Co-encapsulation of Iron and IL-12 as an Extra-intestinal E. coli Vaccine	NIH
	Delivery of Nanoencapsulated TGFbeta and ATRA for the Treatment of IBD	NIH
United Environment & Energy, LLC	Continuous Flow Fixed-bed Biodiesel Production from Algae Oil	NSF
	One-Step Biodiesel Production from Yellow Grease	USDA
	Structured Catalyst for Biodiesel Production	DOE
	Intensified Process for Biodiesel Production	DOE
	High Efficiency Low Cost Nitrogen Fertilizer Production from Fly Ash	NSF

DOD = Department of Defense, NIH = National Institutes of Health, DOT = Department of Transportation, DARPA = Defense Advanced Research Projects Agency, NSF = National Science Foundation, USDA = United States Department of Agriculture, DOE = Department of Energy

Tools to Improve Your Office Continue to Evolve - Part 3 by Thomas Quinn

Einstein once said that if he had one hour to save the world, he would spend fifty-five minutes defining the problem and leave five minutes to figure out the solution. I'm not sure if I agree with the distribution of hours, but experience has taught me that the chances for a successful project are significantly enhanced when the objectives have been clearly defined early on. The second article in this three part series introduced the DMAIC approach and the tools associated with the Define and Measure phases of this approach. The final article of the series will focus on the utilization of tools associated with the Analyze, Improve, and Control phases.

As you begin the Analyze phase, you will have previously created your high level project plan and objectives, collected and validated some data, and begun to understand the relationships between some of the key process inputs and outputs. The Analyze phase will utilize many different lean and six sigma tools to further identify and explore opportunities for improvement leading to a prioritized list of potential solutions. Findings often include non-value added process steps, sources of variation, and root causes of current problems. Included in table 1 are some of the most commonly used tools in the final 3 phases of the DMAIC process.

The example used in the second article of this series focused on a customer complaint relating to their displeasure in filling out the order form. It was determined in the Define and Measure phases that the customer felt it was taking too long to complete the form. A target time of 5 minutes or less to complete the form was established as the measureable objective for this project. Table 2 is a complete set of hypothetical actions that could be taken which utilize the DMAIC method to understand the "real" problem and establish a plan leading to the resolution of this complaint.

The DMAIC methodology is a very simple approach that can be applied to just about every situation or problem facing your organization. Transactional or service-related process changes are challenging because these initiatives often span multiple departments and require some form of consensus to begin the project, let alone implement changes. Insyte's experience with a wide variety of local companies will allow us to quickly help you through the challenging first

Tools continued on page 7

Table 1

STAGE	TOOLS
ANALYZE	Histogram / Pareto Chart
	Value Stream Map Analysis
	Statisitical Analysis
	Cause and Effect Diagram
	Fishbone Diagram
	Swim Lane Process Map
IMPROVE	Kaizen Events
	Design of Experiments
	Simulation Software
	Workplace Organization
	Mistake Proofing
	Failure Modes & Effect Analysis (FMEA)
CONTROL	Control Charts
	Management Review
	Process Measures
	ROI Calculations
	Control Plans

Table 2

STAGE	DMAIC Actions in Response to Complaint
DEFINE	Quantify overall number of complaints related to this form
	Categorize type of complaints associated with this form
	Confirm requirements and objectives of this form
	Determine customer's desired time to fill form
MEASURE	Confirm maximum time typical customer will allow to complete form
	Confirm average time for customer to complete form
	Validate integrity of complaint data for accuracy
	Establish target total time to complete form
ANALYZE	Perform statistical comparison of types & frequency of complaints related to form
	Generate process map to identify waste in form completion process
	Identify root causes of non-value-added time to complete form
	Establish desired future process and components of new form
IMPROVE	Coordinate brainstorming sessions & kaizen events to implement changes to form
	Validate that completion times of new form meet established targets
	Pilot test utilization of new form with targeted customers
	Train staff and then formally introduce new form
CONTROL	Utilize control charts to monitor completion times and complaints on new form
	Ensure weekly or monthly management review of key performance measures
	Define process owner to review & ensure continuous improvement of form
	Establish 6 month follow-up meeting to ensure original objectives are met

Case Study

Kee Safety continued from page 1

The Solution—Implementing a Simple but Disciplined Project Management Process

Kee Safety engaged a consultant from Insyte Consulting who not only had substantial experience in new product development, but was also familiar with the company's markets and had access to training tools from the MEP system (Manufacturing Extension Partnership).

Over a series of six sessions the Team covered:

1. Concepts for Lean Product Development
2. Mapping of the current product development process
3. Development of a desired future state development process
4. Tools and techniques for efficient and effective Project Management
5. Product Management methods for reducing product cost and prioritizing activities
6. Best Practices, and "Dos and Don'ts"

The Team was trained and guided via a series of successive sessions covering product management techniques so, that over the course of the project, they were actively managing all their new products to meet their 2009 goals. Tools included customized Action Item Lists to drive completion of tasks to schedules, Gantt Charts to plan the entire new product process from Idea to Marketing Rollout, and Milestone Charts to oversee progress of multiple new products. To accelerate the Team's successful use of the New Product Process, a Projects Manager was designated and coached in leading the Team and process.

> **"The project met our objective of having a new product process in place and operating successfully within 90 days. I am especially pleased at how the materials were adapted to meet our particular needs."**
>
> **Mike Mumau, President**

Results—Mission Accomplished

Shortly after completion of the consulting project, the Team was fully engaged in regular management of multiple new products using Action Lists, Gantt Charts and a Milestone Chart. In addition, the Team has set aside a regular scheduled day and time to meet each week and manage progress against goals.

Previously, the Team felt challenged to introduce approximately one product every 12 months. However, with the discipline of a new product process, a trained Team and Team leader, and the commitment of top managers to use the process, the Team is confident that they can easily handle both an increased number of new products and ensure time-to-market in 6 to 10 months. This equates to over 50% reduction in time-to-market for new products. In addition, the Team anticipates quadrupling the number of new products introduced in the first year, with an anticipated 20% increase in revenues.

According to Annette Sweet, Project Manager, "It's really impressive how the disciplined use of a few simple tools gives us complete control over managing the development, operations ramp-up and marketing rollout of multiple products." ❖

Firm Benefits

- Over 50% reduction in time to market for new products
- Quadrupling the number of new products introduced
- 20% plus increase in revenues is anticipated
- A robust, sustainable process that can handle an even greater number of new products
- A trained Team that can adapt the processes to pursue even more challenging new products and market opportunities

Kee safety's Weightanka product enables quick setup, portable fall-prevention.

Tools continued from page 6

steps of establishing the foundation of a successful project. If you've failed in the past trying to implement office-related changes, please give us a call. Some new perspectives on how to approach the same problems may be all that is missing.

Thomas Quinn is an Insyte consultant with over 20 years of experience in the technology field. His strengths and expertise lie in strategic business decisions involving IT-related systems and equipment and the ability to provide proven tactical plans supporting the vision of an organization. ❖

Insyte consulting

726 Exchange Street
Suite 620
Buffalo, New York 14210
web: insyte-consulting.com

Nonprofit Org.
U.S. Postage
PAID
Permit No. 1745
BUFFALO, N.Y.

a NIST MEP | Network Affiliate
&
NYSTAR awarded Regional Technology Development Center (RTDC) New York State Office of Science, Technology & Academic Research

Affiliates News

Insyte Directory

726 Exchange Street, Suite 620
Buffalo, New York 14210
Phone: 716.636.3626
Email: info@insyte-consulting.com
Web: insyte-consulting.com

Karen A. Delius | Editor, Affiliates News

Benjamin L. Rand | President

For information contact

Erie, Chautauqua, Cattaraugus Counties
John W. Murray
716.864.8675

Niagara, Allegany Counties
Bill Shepard
716.984.7949

Insyte Consulting is a Western New York Technology Development Center, Inc. company.

This publication is funded in whole or in part by NYSTAR. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of NYSTAR.

Product Development continued from page 3

ments, followed by the top Should Haves. A decision can then be made as to how many Should Haves have to be completed before releasing the product. Alpha versions of a product under development typically have the top Should Haves for testing by customers. Beta versions of a new product typically have almost all the features that will be included in the final release version, but which may not have been fully tested.

Who Decides

For organizations that require the continuous development of new products, a position called Product Manager or Product Marketing Manager is very helpful for sorting out feature decisions. The responsibilities of the Product Manager are to investigate and understand the market needs; to define and prioritize product requirements; to plan and manage completion of the project to the schedule; and to strategically plan product and market roadmaps that enable a company to use its engineering resources efficiently – and win in the market over the long term. In many organizations these tasks are often left to sales or engineering persons who may not have sufficient time to do them adequately, thereby leading to many of the issues above.

Robert Kosobucki, a consultant with Insyte Consulting, has over 20 years experience in product development, marketing, sales and strategic planning with technology and manufacturing companies, in both domestic and international markets. ❖

Mark Your Calendar!

2009 ASQ Buffalo "Lean Six Sigma" Conference

Tuesday, October 13 – Wednesday, October 14 – Millenium Airport Hotel

Stop by the Insyte Consulting booth to learn how Insyte can help your business become more profitable. For more information or to register visit: http://www.asqbuffalo.org/ ❖