Greetings. I hope this message finds you well. The summer is flying by. Thanks to all who volunteered to help on our leadership team. This includes Cedro Torro, our new networking chair who is leading an effort to define and improve our networking value stream. Thanks again to Alan Mendelssohn for his leadership in coordinating the booth activities at the ASQ World Conference on Quality and Improvement in Dallas, TX. Also, thanks to Mark Baker, who is putting together our new LED Awards and Recognition Program. Congratulations to Mark for being named the new executive director of the Shingo Institute, one of our partners in Lean Certification.

Thanks to Nick Vyas and Kam Gupta, our global strategy co-chairs; we are going to have a presence at the Global Supply Chain Summit hosted by USC this September in Los Angeles, CA. We have also begun to develop a network of overseas liaisons to help us improve and expand our reach in South America, the Middle East, and Asia. These are members who are willing to share case study examples of lean applications in their countries and translate our newsletter and training offerings into their local languages.

In August a few of our leaders will meet together in Milwaukee, WI, to develop a strategic plan to achieve our 2020 Vision, which I shared with you in our December 2013 newsletter. And of course plans continue for the Lean and Six Sigma Conference in Phoenix, AZ, March 2 – 3, 2015, with David Behling, LED program chair, coordinating the review and selection of presentations.

We are deep into the analysis of the ASQ Member Satisfaction and Loyalty Survey, which concluded at the end of June. We will be using those results to inform our strategic planning off-site in August. We will also share our analysis and action plans with you in our December newsletter. Thanks to all who participated and provided feedback. For those of you who did not get a chance to participate and desire to do so, please let us know how we are doing. Send me an email at fmurdock@fkmconsultingllc.com.

Thanks for your membership in the ASQ Lean Enterprise Division, and please let us know how we can help you and your organization on your lean journey.

Sincerely,

Frank Murdock
Chair, ASQ Lean Enterprise Division
Note From the Editor
Wow! That’s what I have to say to say about the most recent World Conference on Quality and Improvement that took place in Dallas, TX, in early May. As usual, there were fantastic learning and networking opportunities for all attendees. There were numerous preconference workshops as well as special training and events for ASQ member leaders. I had the amazing experience of presenting a session based on my upcoming book on the Kano model only to discover that Dr. Kano himself was in the audience! Needless to say, I was alternatively panic stricken and then relieved when he got up to speak afterward and gave me positive feedback. Only at WCQI could this type of thing happen! And of course, the division hospitality suites offered further opportunities for socializing and networking.

In this issue, I am very excited to introduce you to three first-time newsletter authors. Our feature article this issue is “In Search of Quixote,” by Kurt Stuke. Coming from the exhilarating and at times somewhat surreal experience of WCQI, I wanted to anchor this issue with a reflective piece on our sometimes quixotic journey in search of continual improvement through the deployment of lean principles. Next, we have an article from Jd Marhevko, who is known by many active ASQ members. She presents a T³ article on Paynter Diagrams. This article was actually the subject of her WCQI session. Our third first-time author, Mohit Sharma, shares wisdom garnered in India in “Identifying Wastes Through VSM.” Additionally, you will find an interesting article on lean implementation shared with us by Gary Vansuch of the Government Division at http://www.crainsdetroit.com/article/20140601/NEWS/306019913/halfway-into-project-lean-teams-look-for-quick-wins#.

In this issue, you will see photos and read about the conference in our WCQI recap section as well as learn what is new and exciting in the division in our “Lean Bytes” section. Additionally, David Behling allows us to “Learn From the Experience of … Pascal Dennis.” We will also share the latest webinar schedule including descriptions of the upcoming topics. Now with WCQI behind us, planning has begun for the ASQ Lean and Six Sigma Conference, March 2 – 3, 2015. Look for preliminary information on the conference in this issue, with more to follow in later issues.

Finally, thanks to all of you for taking the time to read our newsletter. Please continue to let us know how we are doing, what you like, and what we can do better. Until next quarter, take care.

Kind regards and safe travels,
Lance B. Coleman
Newsletter Editor
lance@fullmoonconsulting.net
Volunteers Wanted! Contact membership chair Maria Stoletova at mstoletova@hotmail.com if interested in volunteering.

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- Full page: US$500 per issue
- Half page: US$300 per issue
- Quarter page: US$150 per issue

For submissions or questions about multiple ad discounts, contact Lance Coleman,
lance@fullmoonyconsulting.net.
### Newsletter Publishing Guidelines

**Main Factors**
1. Technical merit
   - Includes correct facts
   - Relevant to our mission
2. No selling of services
3. Nothing offensive
4. Original content only. Nothing previously published or presented.

**Additional Factors**
1. Not too similar to something recently done
2. Desired subject matter – how timely is material?
3. Well written (not requiring extensive editing)
4. Needed length

**Categories** — Newsletter submittals should fit into one of the following categories:
- A Case for Lean (ACL) – case studies and articles on successful deployment of lean in business
- Lean in Life (LL) – examples of lean outside the workplace
- Tools, Tips, and Techniques (TT) – practical applications of specific tools
- Lean in Print (LIP) – book reviews
- Lean Bytes (LB) – event coverage, announcements, and other news

**Length** — Desired length for tips, book reviews, articles and case studies is 600 to 1,200 words. Tips and book reviews would be in the 600- to 800-word range, articles in the 800- to 1,200-word range and case studies 1,000+ words. If a submittal goes beyond 1,200 words then we may look at breaking it into more than one part. For longer submittals, there is also the option of writing a 1,200- to 1,400-word piece for our quarterly lean column in Six Sigma Forum Magazine.

**Review and Selection Process** — All submitted works will be reviewed by at least two members of the subcommittee. The subject for a book review should be approved in advance by either two members of the subcommittee or by the subcommittee chair. Upon approval of a submitted work, the subcommittee forwards the piece on to the ASQ LED newsletter editor for final review, approval, and release. The newsletter editor will determine when accepted articles will be published.

**Other** — All articles containing photos should be submitted with the photo(s) as a separate jpeg attachment.

**Calendar/Main Theme(s)**
(Submit to the main theme receive priority)

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<th>Issue</th>
<th>Content</th>
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<td>February 1</td>
<td>Submit content by December 1 – preview of Lean and Six Sigma Conference</td>
</tr>
<tr>
<td>May 1</td>
<td>Submit content by March 1 – preview of ASQ’s World Conference on Quality and Improvement</td>
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<tr>
<td>September 1</td>
<td>Submit content by July 1 – training, certification, and back-to-school</td>
</tr>
<tr>
<td>December 1</td>
<td>Submit content by October 1 – year-end reflection/looking ahead to next LSS conference</td>
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### In Search of Quixote

*by Kurt Stuke*

In this brief article, the viability of employing the character of Don Quixote as a role model for quality is explored. The article sketches the alternative framing of quality that might result from prioritizing imagination, commitment, and passion fused with purpose within our practice.

Borrowing from the work of James G. March, a professor emeritus at Stanford University, what insights concerning quality can be drawn from observing Cervantes’ character of Don Quixote?

Given Quixote’s penchant for storming windmills, he seems an unlikely source of guidance. If his inability to differentiate between a giant and a windmill were not enough to question the worthiness of Quixote as a role model, there is also the glaring inconsistency with most of his observable traits to any reasonable code of ethics. Quixote is quick to love, quick to judge, and quick to battle. He is inconsistent, biased, and often unpredictable. In addition, while the character of Quixote considers himself a champion of what we might call process improvement, Quixote is far more likely to cause pain than improvement. What lessons can be drawn from observing such an unreasonable character?

**The Role of Imagination and Wonder**

Imagination and wonder expand our horizon; these quixotic lenses can reshape not only how we see the world but how we interact with it. Imagination and wonder enable us to break through and beyond traditional patterns of understanding and any dependent approaches to problem solving; they encourage us to seek innovation and uncover previously hidden possibilities.

It should be noted that calling for quixotic lenses is not the same as suggesting “anything goes!” Even without the benefit of a “goodness-of-fit” test, we can all agree that we should not use our scientific calculators as makeshift lances and charge our client’s buildings. Infusing our action with imagination frees us to consider new and potentially better approaches. Innovation may emerge. As John Dewey noted in his *Recovery of Philosophy*, the inverse also applies: “In a complicated and perverse world, action which is not informed with vision, imagination, and reflection is more likely to increase confusion and conflict than to straighten things out.”

Consider the task of drudging through a less than favorable voice of the customer (VoC) survey. What if we turned from a sense of wonder best characterized by “how many different ways can a customer possibly express their sentiment of ‘you stink’” and more toward the unbounded sense of wonder that moved Quixote? The resulting experience would differ in at least three profound ways.

First, our attention would turn from what has been toward what might be. Imagination, unlike reason, is inherently forward facing. In the case of reviewing VoC data, it is possible that we could become so energized by the possibility of what might result, that real differences, i.e., improvements that make a genuine difference to somebody, somehow, and somewhen, could be realized. Imagination presses upon our attention the need to saddle up for the sake of what lies ahead.

Second, imagination, more readily than rationality, tends to induce the contrary state of optimism. Like Quixote, when we are “on our game” (or better yet immersed “in our game”), we believe whole-heartedly that we will succeed. Time itself can be transformed from the “graveyard of our hopes” into the “playground of our activities.” In this light, our quality quests could ...

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`cont. on p. 5`
be more like imaginative journeys born in faith than exercises of pure reason with an output of data-based decisions.

Third, quixotic imagination spurs us to storm the “giants” of the “tried and true.” Once freed from the yoke of well-worn expectations, our role transitions. We are freed from a largely passive role in which our primary responsibilities were to preserve and respect the old ways. We become actors upon “the stage of the living drama of life.” Within this newly found “moving present,” meaning and use are not pre-set but are dynamic expressions of creativity born through the “audacity of our imagination.”

The optimal way to engage the VoC survey, for example, is not pre-ordained; the power of imagination suggests that it is highly unlikely that a single answer or approach exists. Predetermined lists promising insight into the singular “truth” aside, the answers born of imagination, i.e., the truths, are as plural as the possible contexts and purposes.

Undoubtedly, there is at least one additional level of engagement to consider. We must, at some point, face the equally formidable beast of entrenched company habits. Both fronts of engagement will be drawn-out affairs. Both will offer very little promise of success and the unattractive guarantee of injury and repeated failure. Observe that Quixote, the exemplar of the unreasonable, donned armor and a helmet prior to charging!

**The Role of Commitment**

Given the number of defeats and painful lessons that would surely follow from emulating Quixote, it would also be fair to question the wisdom of following Quixote. At the novel’s conclusion, Quixote meets his death quietly and, in full humility, admits meekly, the madness of his ways. Why emulate failure?

In order to judge Quixote adequately, consider what March has referred to as the logic of action. We are accustomed to assessing success through the evaluation of outcomes. For example, we might want to reduce the defects per million opportunities (DPMO) from a current level to a future state of less than 3.4 per million. Failure to meet and maintain the stated goal becomes central in evaluating success. However, is such an evaluation of the consequences sufficient?

Quixote offers us an inverted logic of action in which the focus is turned from consequences. Instead of focusing on results, quixotic commitment challenges us to take sustenance from our ideals. From this vantage, failure to meet a goal is not the worst thing that could happen; allowing failure to define us and to turn us away from what nourishes us—from what is truly needed—is a far worse outcome. To use the example above, if we want to move a company towards a Six Sigma goal, then cultural change (commitment) must precede and drive the change. From this view, we should focus on the ideals that drive the culture if we desire real change. To focus solely upon the DPMO measurement is to prioritize an abstraction over a cultural reality.

Quixote, when assessed through the inverted logic, was not a failure. He becomes a champion of authenticity. His commitment reflects not only consistency to his values but an ethical courage that is rarely witnessed. He stayed true to his cause and was unmoved by a consequential logic even when it would have been reasonable to surrender.

When we witness quixotic commitment, we tend not to remember outcomes but the commitment itself. For example, when we witness an Olympian compete, the result seems secondary to the sense of awe inspired by such commitment. What lingers is a stirring best articulated as a visceral sense of possibility. Prompted by a sense of “what if,” we can be so moved by another’s commitment that we, too, dare to challenge limits. We take the opportunity to rededicate ourselves to what we feel is important.

Through his commitment, Quixote reflects what Margaret Wheatley has termed the “messiness and beauty that name us alive.” We, like Quixote, are flawed, unpredictable, and so often mistaken. Our lives are rarely linear; effect is only sometimes proportional to cause. Emulating Quixote, therefore, is not to emulate failure but to embrace the wholeness of who we are, and, who we might dare to become.

**The Role of Passion and Purpose**

What if in our practicing of quality, we, too, were moved by the passionate sense of purpose that guided Don Quixote? Most of us would object to the prioritization of purpose. There is a long-standing assumption in quality that reason is “first and foremost” and that all decisions should be reasonable, i.e., data driven. What should count, according to the traditional view, are the “facts” of the matter.

On the contrary, Deming asserted within his *The New Economics* that what counts the most is not objective fact but the purpose at hand. Deming employed an analogy of counting people in a room to support his claim. Ordering the correct number of lunches for the inhabitants of a room is a vastly different problem (and entailed different rules of counting, operational definitions, and procedures).
than counting the number of people in the room in order to assess compliance with fire and safety codes. Given that the “facts” of the matter differ depending upon purpose, Deming concluded “there is no such thing as a fact concerning an empirical observation.”10 In other words, facts are dependent upon purpose. Purpose, therefore, ought to be prioritized.

By extension, if we desire what has been termed profound by Deming, we should be moved by an impassioned sense of purpose. If we were merely human calculators, approaches to quality based on reason alone would be sufficient. But we are more than the sum of our thoughts. We engage the world in ways that cannot be captured through cognition. The assertion that “we think and therefore we are” is not wrong but is incomplete. We should also observe that we breathe and therefore we are. We love and therefore we are. We try and sometimes we fail and therefore we are. A truly profound sense of quality should embrace the fullness of human experience. One possible route to recognize the proposed reconstructed sense of quality is through the prioritization of purpose.

Postscript
When infused with the vitalities of imagination, commitment, and purpose, quality is reconstructed. The reconstructed sense of quality is not limited by consequences, not defined by reason, and not determined through convention. Quality becomes a craft and we, as practitioners, become quixotic artisans. The vision is also reconstructed and is admittedly unreasonable: people are more than human calculators; quality is more than the sum of data-driven decisions; and process improvement is real possibility that cannot be contained by the static logic of fixed bodies of knowledge.

References

About the Author
Kurt Stuke is a quality manager for AdeccoUSA. In his role, he is responsible for finding creative ways to drive positive change. He has a doctorate in leadership as well as master’s degrees in philosophy and theology. Stuke is an ASQ member, a member of the International Society for Process Improvement, and is certified as a Quality Auditor (CQA), Manager of Quality/Organizational Excellence (CMQ/OE), and Lean Six Sigma Black Belt. Current research interests include the philosophy of quality, the philosophy of leadership, and American philosophy.

T³ Tools, Techniques, and Templates: Predictive Warranty Using Paynter Charts
by Jd Marhevko, VP Quality and Lean Systems, Accuride Corporation
MBB, ASQ Fellow, CMQ/OE, CSSBB, Past Chair ASQ QMD

Developed in the early 1980s by Marvin (Marv) Paynter at Ford Motor Company, a Paynter chart is a graphical tool often used to both analyze product failure and be used to predictively minimize any ill effects. Some key points about Paynter charts:

• Paynters rely on time of manufacture (TOM) of the product. This can be by year, month, week, hours, etc. There is usually some form of Julian timing methodology attached to the product being reviewed.

• Paynters are visual. There is often a color-coded matrix of failures or a series of stack-bar charts, which are run over the time of manufacture.

• Paynters are largely used in tandem with Pareto charts to support root cause analysis and Chi² (χ²) analysis to predict if there is a change in the rate of return(s) being experienced.

At the end of the day, Paynters help to verify the effectiveness of corrective actions (CA) over time and to mitigate business risk in terms of uncontrolled expense. Paynter variations have multiplied across the past 30 years. However, there are two main types:

Matrix Charts
These charts “bucket” the failure data by TOM and by type. For effectiveness, the data results are typically Pareto’d, and color coding is used to denote the onset and effectiveness of CA.

Section 1A and 1B:
This is a list of the types of failures being experienced within the process (1A). It is key that an effective measurement system analysis (MSA) be conducted in advance of data collection. In this case, the symptoms are a blend of variable and attribute concerns. Variables MSA is conducted via a gage repeatability and reproducibility (GR&R) analysis. An attributes MSA is called an attributes agreement analysis (AAA). If there is not reliable clarity on how the failures are being assessed, then the data becomes suspect and the effectiveness of actions being taken may be improperly interpreted.

The “total” column in the top right corner of the matrix graphic depicts the Pareto results (1B) of the findings. By sorting the findings in “worst first” order, the team can determine which symptoms to address in order to rapidly reduce the failures being observed.

cont. on p. 7
**Predictive Warranty Using Paynter Charts**  cont. from p. 6

**Section 2:**
This inset is sometimes used in lieu of Section 3. It depicts the total percentage failure for the buckets of time being analyzed. While easy to follow in terms of trend analysis, Section 3 provides an additional layer of visual feedback.

**Section 3:**
This is a stack bar of the types of failures being observed over the timeframe. The key benefit with a stack bar in this area is that visual analysis can rapidly identify both effectiveness of corrective action and/or if a new symptom is beginning to occur. Caution must be taken if the population size varies widely. A user may have a stacked graph of the physical quantities (such as in this example) or for a more reflective evaluation, may use stacked percentages instead. In the example shown, the production rate is fairly consistent and the team used quantity on the y-axis.

**Section 4:**
The data collection matrix is set up according to TOM. Regardless of the time frequency used, the product must be assigned to its relevant bucket for proper analysis.

**Section 5:**
The data matrix reflects either the quantity or percentage of findings of a particular symptom for that TOM. A key component in this section is to use a defined color methodology to identify when CAs have been applied. In the example, pink is used to show that CA has been started. Black denotes zero failures. In the example of row 1 for scorch, a CA was effectively applied and a secondary cause arose necessitating an additional CA. In a case like this, the team may opt to show two symptoms for scorch; scorch due to X and scorch due to Y. As shown in the example of an additional CA, a third color is sometimes used to denote an interim impact such as 50 percent reduction of the symptom. This can help as a visual aid to verify the speed of the effectiveness. In the case of contamination, it took five TOMs until a 50 percent impact was achieved.

**Section 6:**
This part of the Paynter overview records the history of CAs that were implemented in conjunction with each symptom. Data usually includes the date of change and a brief description of the fix.

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**Matrix Charts**

**Symptom Matrix**

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<th>T2</th>
<th>T3</th>
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**Corrective Action Tracker**

1. T4…PM change
2. T4…New lubricant
3. T5…DOE on heat settings
4. T5…Changed fixture. New PM
5. T7…Supplier repaired equipment
6. T12…Repair TCs

**Example of Additional CA in Section 5**

<table>
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<th>Symptom</th>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Corrective Action Tracker**

1. T4…PM change
2. T4…New lubricant
3. T5…DOE on heat settings
4. T5…Changed fixture. New PM
5. T7…Supplier repaired equipment
6. T12…Repair TCs

---

*Lean Enterprise Division Newsletter*
Stack-Bar Paynters

Stack-bar Paynters are typically used in warranty analysis after the product has left the facility. Products must have some type of date coding so they can be bucketed into TOM. Stack-bar Paynters can provide indicator feedback of either improving or worsening trends. Along with Pareto analysis on the types of returns, stack bars also leverage Chi\(^2\) \((\chi^2)\) analysis to determine if there really is a difference in the rate of return.

In the example below, red depicts the part per million (PPM) rate of units returned in physical year of manufacture. Often called “infant mortality,” our team refers to these as “boomerangs.” Something went wrong with the unit in a very short timeframe. If we compare the height of the red bars year over year, things were fairly consistent for “year 1” returns in years A-D. However, in year E, there was a significant increase or boomerang of “year 1” returns.

“Year 2” returns depicted in pink show units that came back after it was in the field for two years. The rate of return also translated into “year 2” returns for units made in year E. Had Paynter charts been in effect, the issue could have been identified via \(\chi^2\) analysis and better contained along known supply channels much sooner. The issue continued to manifest itself in units that were returned in their “year 3” of field life (light gray). In this example, a change in supplier caused this effect: The penny saved cost a bundle … for years! If a Paynter had been in use, the issue may have been identified via \(\chi^2\) within a few months of release.

The supply chain item was addressed in December of year E and Paynter tracking was initiated in January of year F. The process quickly returned to pre-year E results in year F. However, with the power of combining both Pareto and \(\chi^2\) analysis to the living results, the team cut the year G “year 1” returns in half. “Year 1” results for year H were again cut in half compared to year G “year 1” returns. It is common to run a stack-bar Paynter of averages for performance comparisons.

\(\chi^2\) \((\chi^2)\) is a quick analysis to determine if there is a difference or not between two populations. Shown above is a sample template offered to members for free by the ASQ Statistics Division.

A key value of stack-bar Paynter charts is the ability to conduct TOM to TOM comparisons to predict business risk. If returns for “year 1” and “year 2,” etc., continue to decline, less reserves may be needed. Or, a marketing advantage may be shared with potential customers. If the reverse happens and a spill occurs, controlled containment can be affected at minimized costs to the business.

Another benefit is that an empirical bathtub curve can be generated to validate the effectiveness of design testing and to better set warranty timing to optimize business results. Year-over-year expenses can be estimated and a cost profile can be generated.

One of the largest benefits of a Paynter chart is a more appropriate projection of business risk due to warranty. Financial systems typically track returns by the day it returns to our backyard (ROB). This does not enable predictive nor preventive

---

**Paynter Stack-Bar Chart**

**Rate of Return by TOM**

**Rate of Return by Age in Field**

---

**ASQ Statistics Division \(\chi^2\) \((\chi^2)\) Template**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>125</td>
<td>142</td>
<td>267</td>
</tr>
<tr>
<td>Scrap</td>
<td>4</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>129</td>
<td>149</td>
<td>278</td>
</tr>
</tbody>
</table>

**Summary Results**

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Observed 125</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>Expected 123.8957</td>
<td>143.1043</td>
</tr>
<tr>
<td>Scrap</td>
<td>Observed 4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Expected 5.104317</td>
<td>5.895683</td>
</tr>
</tbody>
</table>

**Calculated Values**

- Number of Rows: 2
- Number of Columns: 2
- Degrees of Freedom: 1
- Chi Square: 0.464132
- P Value: 0.4957
- Confidence: 0.5043

It is unlikely there is a difference between categories.
Predictive Warranty Using Paynter Charts

Paynter Stack-Bar (TOM) wrt ROB

<table>
<thead>
<tr>
<th>TOM prediction</th>
<th>TOM (ppm)</th>
<th>ROB (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Planning. See the pros and cons in the table and chart above:

1. Operations looks like a hero because prior low sales volume reduced the ROB return rate “x” months later.
2. Operations is struggling to explain why the ppm went up when, in fact, the process is the best it has ever been.
3. Prediction data is based on past return performance.

The pink or “ghost” bars are prediction amounts based on past performance. A Paynter chart is always a snapshot in time. When dealing with returned goods, a similar TOM matrix is developed to capture data as time evolves as shown at right.

1. Take the return information from each month and “allocate” it into the TOM.
2. Evaluate if the return rates “hold up” based on the CAs implemented.
3. Generate a stack bar by establishing a percent and/or ppm table.
4. Determine an approximate and meaningful “historical” average (i.e., most recent two months).
5. Create the stack bar with “ghost bars” to estimate potential future returns.
6. Evaluate the potential and assess if this is what is wanted for the business or if additional improvements are necessary.

Ghost bars (#6) help to visualize the potential risk. Depending on the process type, the rate of change can vary significantly. If that is the case, a longer TOM average (e.g., four to six months) may be needed to build in robustness. Ghost bars can be used for previous timing when a Paynter is being “started in the middle.”

To get the benefit of using a Paynter, it is key to assess product and “bucket” it as soon as it is returned. This enables a “pre-sponse” and controlled reactions to minimize business losses and/or the sharing of positive news.

This team experienced a 33 percent reduction in warranty for “year 1” to “year 1” items. Warranty expense was also reduced by 37 percent across the two-year timeframe.

Capture Data as Time Evolves

<table>
<thead>
<tr>
<th>Age</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
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<tr>
<td>Mo 1</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>5</td>
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<td>2%</td>
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<tr>
<td>Mo 2</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>5</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
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<td>2%</td>
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<tr>
<td>Mo 3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
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<tr>
<td>Mo 4</td>
<td>5</td>
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<tr>
<td>Mo 5</td>
<td>5</td>
<td>3%</td>
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<tr>
<td>Mo 6</td>
<td>2%</td>
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</tr>
</tbody>
</table>

Paynter Pointers

1. Use Paynters for CA verification in the field. When appropriate, conduct containment on your terms in order to mitigate cost.
2. Conduct the relevant MSAs prior to implementation.
3. Once you have a working system, automate it.
4. Paynters require thought. Use $X^2$ to assess for change.
5. Ensure that system fixes are sustainable or they’ll show up again.
6. Tie results to cost of goods sold (COGS).
7. Color code!

About the Author

Jd Marhevko is the vice president of quality and lean for Accuride Corporation. She is a business and operational excellence executive with more than 25 years of operations, QA, and lean experience in a variety of industries including automotive, aerospace, plastics, and machining. Marhevko is an ASQ Fellow, a Certified Manager of Quality and Organizational Excellence (CMQ/ OE), a Certified Quality Engineer (CQE) and a Certified Six Sigma Blackbelt (CSSBB). She is also a trained Master Black Belt (MBB). Marhevko has been a senior Baldrige System assessor for the state of Michigan for several years. She has a BS in engineering (BSE) from Oakland University in Michigan and a master’s of science administration (MSA) from Central Michigan University. Marhevko is a past chair of ASQ’s Quality Management Division (QMD)—a 24,000-member global professional organization. If you have questions for the author you can email JdMarhevko@AccurideCorp.com or view her WCQI session M26 - Predictive Warranty Using Paynter Charts.
Lean Bytes

Membership Update:
We started 2014 as the third largest ASQ division, with 5,689 members. We have maintained a steady membership with a slight uptick since 2009 (when we had 5,642 members) despite the overall ASQ membership declining 3.3 percent from 79,042 to 76,396 during the same time period. This year we signed up over 20 new members throughout the recent WCQI conference, and expect more to sign up during the following weeks.

Dr. Terra Vanzant-Stern, chair-elect, has recently developed a structured and robust onboarding procedure for division leader that has been ratified and will be implemented going forward in 2014. Also, we would like to welcome Ana Bailey, Carla Konzel, Michael Levenhagen, and Jim Thompson as new members of the division leadership team.

Conference Exhibit Booth Improvement Project (CEBIP):
Headed by Dave Harry, marketing chair, the goals of the CEBIP were to (1) optimize the visitor experience for conference attendees visiting the LED booth and (2) ensure that the messaging that the division delivers is consistent with our mission statement. In addition to Dave Harry, the team included Dr. Terra Vanzant-Stern, Alan Mendelssohn, Tammy Miller, Scott Smith, Don Smith, and Lance Coleman. The project deliverables included:

- New brochure for individuals new to lean and the LED
- Talking points to allow those manning the booth to deliver a consistent message
- New acrylic table-top displays
- New and improved booth assembly instructions
- New laminated lean tool learning aids

The roll-out of the new exhibit booths and protocols was piloted during the Lean and Six Sigma Conference in Phoenix, AZ, and fully implemented during WCQI in Dallas, TX. The project was deemed successful in our conference wrap-up meeting and the project will be considered closed upon final report out by Dave Harry. What was nice about participating in this project was working with other members of the leadership team—with whom we don’t usually interact—to be able to put into practice lean concepts such as effective teamwork, planning ahead with Gantt charts and checklists, using standard work, 5S, and continuous improvement, all as part of successful project implementation. This project may even end up in someone’s Lean Bronze Certification portfolio.

Education:
The Education Committee is developing curriculum for those interested in becoming proficient lean practitioners with a secondary emphasis on lean certification. Chris Hayes, webinar chair—in conjunction with Tony Manos and Jeff Fuchs—is leading the effort. The course will offer the learner a comprehensive understanding of the principles and tools of lean as well as the ability to apply them in a practical setting—allowing the participant to bring value to the organization immediately upon completion of the course. The course is being designed as a blended model that will offer face-to-face learning, e-learning, and project work. It is the first of its kind being created for ASQ and fully supported by the subject matter experts within the Lean Enterprise Division. Don Smith, education chair, is leading the efforts to coordinate this endeavor with ASQ’s Learning Institute.

Webinar chair Chris Hayes also led the Lean Enterprise Division’s second Lean Bronze Certification Exam Review Course as one of the preconference workshops at WCQI in Dallas. The LED is supporting the growing demand for lean certification in industry by helping to ensure that those sitting for exams are prepared. The review course was offered in tandem with a portfolio review session that offered those ready to submit the second portion of their certification requirements, the portfolio of five projects, one-on-one coaching on meeting the requirements of the portfolio review as well as 24-hour turnaround on the portfolio assessment compared to a one-month standard turnaround. Congratulations to the exam and portfolio review participants who all successfully passed.

Publications:
The Publications Committee is proud to publish four issues of the newsletter this year for only the second time since the newsletter was established in 2003. We would also like to thank program chair David Behling for suggesting and implementing the “Learning From the Experience of…” column that we have all benefitted from during the past year. Upcoming in 2015, we are working on the first-ever Spanish-language edition of our newsletter to be released in conjunction with our 2015 Lean and Six Sigma Conference. We also currently have a lean column in the following publications:

- ASQ Six Sigma Forum Magazine
- QNewZ, the newsletter for the New Zealand Organization for Quality

Webinars:
Did you know that the LED-recorded webinars are on the open-access portion of our division website as well as on YouTube? Now, you can share this valuable resource with colleagues who are not members of the LED. Contact chayes@getimpacts.com for more information.

ITEA Finals:
Nearly a dozen LED members served this year as judges in ASQ’s International Team Excellence Award Process. ITEA is the only international team recognition process of its kind in the world. To become a final-round judge is very competitive, as only 40 judges are selected each year from the 400 who volunteer to judge the final-round ITEA Process at WCQI. We thank the our 10 LED member volunteers (Geetha Balagopal, Barry Bickley, Daman Bozzacco, William Eberhardt, Dave Harry, James Johnson, Samir Joshi, Gary Lawson, Patty Trapp, and Chad Walters) for stepping up to support the 2014 ITEA Process at WCQI in Dallas. These volunteers also gave their time to judge ITEA preliminary rounds across the country last fall (at their own expense). Since 1985, more than 1,000 teams from Argentina, Australia, Brazil, Canada, China, Colombia, Costa Rica, Germany, Guatemala, India, Japan, Mexico, Philippines, Singapore, South Korea, Thailand, the United Arab Emirates, and the United States have participated in this outstanding process! For more information on becoming an ITEA judge contact one of the LED members above or go to wcqi.asq.org/2014/team-award/index.html.
Learning From the Experience of … Pascal Dennis

by David Behling, LED Programs Chair

This column brings you interviews with some of the top lean, improvement, and leadership individuals at the forefront of our field.

I recently had the pleasure of speaking with Pascal Dennis, a professional engineer, author, and advisor to companies making the lean leap through Lean Pathways, Inc. He is the author of the Shingo Prize-winning books, Lean Production Simplified and Getting the Right Things Done: A Leader’s Guide to Planning and Execution, and most recently, Reflections of a Business Nomad. Pascal developed his lean skills at Toyota Motor Manufacturing Canada and by working with lean masters in North America and Japan. He has supported lean implementation at leading international companies in sectors as diverse as automotive, process industries, heavy equipment, construction, and healthcare. The focus of his lean implementation work is strategic planning and execution (strategy deployment), quality, delivery and cost management, health and safety, and business process improvement.

I would like to thank Pascal Dennis for providing me the opportunity and time to conduct this interview.

What have you been recently reminded of that is important to remember when practicing lean?

The importance of humility and saying, “I don’t know.” The most obvious recent example of this occurring is the healthcare.gov fiasco. It underlies the importance of saying, “I don’t know” and challenging their thinking, especially where there is a group of smart people. It is likely that no one had the guts to come up and say, “I really have no clue what we’re doing; we’ve never done this sort of thing; we really need to think about this very carefully before we move forward and pretend everything is OK.” I see this happening all the time in our consulting work.

If you were going to explain to someone (or an executive) what lean is, what would you say?

A business system invented in America and Japan that seeks to involve all team members in the reduction of waste and variation, so as to reduce the lead time of a process.

What do you think is the biggest misunderstood concept concerning lean within society?

Lean = headcount reduction; lean is about cutting people and shrinking our way to prosperity. In my view, lean is a growth strategy. It is about bringing back jobs that have been lost; people feel really good when that happens. We can’t shrink our way to prosperity, we need to grow. It takes a lot of humility, tenacity, and fortitude to accomplish.

What do you think is the biggest misunderstood concept within the lean community?

Lean is a set of tools, and once I’ve learned the tools, I know lean. The mentality is “been there, done that” and individuals feel that they know “it” after a one-day class. My sensei at Toyota told me it took him 40 years to understand PDCA (problem solving). Nowadays, most people want everything to be a sound bite.

If you could have an organization adopt only one lean behavior or teach only one lean tool, what would it be?

“Make problems visible, make them ugly.” Make people go, “Ooohhh, did we make that? We should do something…” “Make it ugly” is a very good embedded test to show you what’s going on within your company and management. It relates to “I don’t know.”

What is your greatest concern about the lean movement?

That it will devolve into a set of tools. Lean is a way of thinking and a way of being. I was trained by the Japanese, and before that I trained in the martial art of aikido for 15 years. Everything fits together, and lean is so much more than just the tools. I think the giants—Deming, Juran, and Drucker—felt the same way, and I feel that is why they had such longevity. Many technical professionals have been taught to think and be trained in tools. A carpenter knows how to use all of his tools, and his skill is inputting all of them together to create a dresser, cabinet, or work of art.

How can we accomplish that?

We need good senseis who will be tireless proponents and continually reinforce the fundamentals and concepts. They will be a “burr in the saddle,” afflicting the comfortable and willing to make it ugly.

What is the biggest opportunity for lean in today’s world?

That it will devolve into a set of tools. Lean is a way of thinking and a way of being. I was trained by the Japanese, and before that I trained in the martial art of aikido for 15 years. Everything fits together, and lean is so much more than just the tools. I think the giants—Deming, Juran, and Drucker—felt the same way, and I feel that is why they had such longevity. Many technical professionals have been taught to think and be trained in tools. A carpenter knows how to use all of his tools, and his skill is inputting all of them together to create a dresser, cabinet, or work of art.

How can we accomplish that?

We need good senseis who will be tireless proponents and continually reinforce the fundamentals and concepts. They will be a “burr in the saddle,” afflicting the comfortable and willing to make it ugly.

What is the biggest opportunity for lean in today’s world?

The opportunity to translate the “profound system of knowledge” into entirely new fields, i.e., healthcare, universities, public service, and disciplines, such as law, finance, and insurance. If we’re humble, stick to the fundamentals, and do as we have been taught without jumping to conclusions and telling people what to do, we can move lean into new fields. This is the great fun, challenge, and wonder of it all.

About the Author

David Behling is the programs chair of the Lean Enterprise Division. He has worked extensively in the lean, improvement, and quality fields helping to transform companies. He is currently the director of process improvement at Goodwill Industries of Southeastern Wisconsin and Metropolitan Chicago in Milwaukee, WI.
Identifying Waste Through VSM

by Mohit Sharma

Value stream mapping (VSM) is a lean tool that helps us to visually understand the flow of material and information as a product makes its way through the value stream. At Genpact, we use this tool extensively to not only identify processes where waste occurs but also identify the sources of those wastes. Let me explain the concept using an example of streamlining the mail room process for one of Genpact’s customers.

The example: All F&A and employee services claims come through the mail room process. This process had 23 staff (13 skilled, nine semi-skilled, and one team leader) to render these services.

The following issues are observed:

• Huge backlog of approximately 2,000 cases
• Some of the teams in the mailroom were consistently working for 10+ hours
• Strong follow-ups from suppliers and staff due to delay in mailroom processing
• Loss of physical invoices

The VSM project team’s goal was to process 98 percent of invoices in three days using a current state VSM.

Current state VSM highlighted three major sources of waste: **level loading** of work among the teams, **extra processing** due to duplication in the process, and **transportation wastes** (i.e., a lot of physical movement of invoices, which led to damage and loss of invoice).

Let us see how this lean tool helped to solve for the above-stated wastes.

### Mailroom – VSM Current State

| Cycle time: | Data verification and entry | 0.75 minutes |
| No. of FTEs: | 4 |
| Batch size: | 1 |
| Cycle time: | SAP inward | 0.33 minutes |
| No. of FTEs: | 4 |
| Batch size: | 1 |
| Cycle time: | Scanning | 0.33 minutes |
| No. of FTEs: | 3 |
| Batch size: | 50 |
| Cycle time: | Indexing | 0.33 minutes |
| No. of FTEs: | 3 |
| Batch size: | 50 |
| Cycle time: | Dispatch | 0.33 minutes |
| No. of FTEs: | 2 |
| Batch size: | 1 |

VA = 0.75 + 0.33 + 0.33 + 0.33 + 0.33 = 2.07 minutes
NVA = 0.32 * (2172) = 694.72 minutes
VA/NVA = 0.3%

### Solution 1

We used **heijunka** concepts to fix level loading problems, as some teams had more volume compared to other teams. (Heijunka is the leveling of production by both volume and product mix. This system does not build products according to the actual flow of customer orders. Heijunka takes the total volume of orders in a period and levels them out so the same amount and mix are being made each day.) We used concepts like cross skilling and work allocation by dedicated resources (mainly team leader).

**cont. on p. 13**
The team leader’s role was enhanced and some extra responsibilities were given to him—such as morning team huddles—to discuss the volumes received and targets for the day, exception handling, error handling, random audits, and MIS reporting.

**Solution 2**

This solution mainly focused on reducing the extra process (duplication) in the main process; some rules were laid down to solve the problem.

- Rule 1: No data entry in inventory stage
- Rule 2: Upfront scanning
- Rule 3: Removal of SQL macro-based workflow
- Rule 4: Move data entry to SAP
- Rule 5: Automate SAP inward and index using fusion

Streamlining and standardization of the process helped greatly in reducing duplicate invoices.

**Solution 3**

The third solution focused on reducing transportation waste, with three people transporting invoices from the main gate to the scanning room three times a day in two different shifts.

- The mail room was shifted close to the main gate, where couriers would deliver the mail directly and hence loss/delay of invoices received were eliminated.

**Solution 4**

Inclusion of automated tool (jidhoka), which reengineered the way the entire process worked. The tool is called fusion and has delivered a business impact of $170,000.

| Inventory In | • Inventory in team to receive walk-ins and couriers. No data entry at this step. 1.3 full-time employees (FTEs) were required to receive documents. |
| SAP inward | • SAP inward will be as is. Data entered into SAP will be auto populate macro tool. Three FTEs required for SAP input. |
| Scanning | • No change in scanning. Three FTEs for scanning. |
| Indexing | • Only inward not entered. The rest is auto-populated by fusion. One FTE required. |

**Current State vs. Future State With Fusion**

**March 2013**

- **Inventory In**: 23 (13 skilled + 9 semi skilled +1 TL)
- **SAP Inward**: 19 (11 skilled + 7 semi skilled +1 TL)
- **Scanning**: 3 FTEs for scanning.
- **Indexing**: 3 FTEs for scanning.
- **Team Leader**: Trend Chart

**July 2013**

- **Inventory In**: 2 FTEs reduction
- **SAP automation**: 2 FTEs reduction
- **Indexing automation**: 2 FTEs reduction

**Team Leader**

- Change in the layout of the department, with teams sitting in a semicircle—team members could turn around and talk to each other.
This project was a success—providing an excellent example of usage of basic and advanced lean tools. A lot of data were collected and analyzed—reflecting a good mix of Lean Six Sigma methodologies used together in one project.

**Tips**

All lean VSM projects should not just limit themselves to identifying waste but also to extend the scope to understand the sources of those wastes. Through their project, Black Belts should be able to identify root causes and solutions for different sources of wastes.

The project that has been described in this article was successfully implemented by Yoganand Malik.
World Conference on Quality and Improvement (WCQI) Recap

Those able to attend benefitted from another great WCQI this May in Dallas, TX, where there were:

• 2,198 attendees representing 46 countries
• 335 exhibitors
• 88 concurrent plus five after 5 sessions

LED leadership strongly supported the conference programming by conducting six of the 88 concurrent sessions as shown below, in addition to one of the 12 preconference workshops.

• Process Improvement Strategy Deployment
  M14 at 1:30 p.m. on Monday, May 5
  Patricia Morrill

• The Customer-Driven Organization: Using the Kano Model
  M24 at 3:00 p.m. on Monday, May 5
  Lance Coleman

• Improvement Kata: Wax On, Wax Off
  M35 at 4:15 p.m. on Monday, May 5
  Chris Hayes

PowerPoint presentations for these sessions and all others can be downloaded from the conference website by conference attendees by clicking the “2014 Program” button and inputting the code provided during WCQI. Recorded sessions are available for purchase by attendees and non-attendees alike also by visiting the conference website.

On Sunday, May 4, we reviewed the 2020 Strategic Vision during a successful business meeting attended by 12 member leaders and four member attendees. For more information on the 2020 Strategic Vision contact division chair Frank Murdock at frank@fkmconsulting.com.

Ten LED members—Geetha Balagopal, Barry Bickley, Daman Bozzacco, William Eberhardt, Dave Harry, James Johnson, Samir Joshi, Gary Lawson, Patty Trapp, and Chad Walters—helped judge the International Team Excellence Awards during this year’s WCQI.

The LED was able to sponsor one student with free WCQI registration. Our hospitality suite provided additional socializing and networking opportunities for several hundred conference attendees. Our suite was open for three days; and many attendees said LED had the best hospitality suite. Special thanks to immediate past chair Kiami Rogers for all of her hard work in planning, liaising with the Hilton Anatole staff, serving as hostess, and just generally schlepping things around to make it all come together. The prize raffle drawing was done Tuesday evening in the hospitality suite, and the winners were:

• Mark Foster – SBA Communications: “Lean Handbook”
• Richard Neighbarger – Enterprise Testing Consulting: $50 Walmart Gift Card

We scanned the badges of nearly 300 attendees who came through the exhibit hall. Thanks to the following member leaders for helping out at the booth.

• Ana Bailey
• Javed Cheema
• Lance Coleman
• Dave Harry
• Chris Hayes
• David Hight
• Michael Levenhagen
• Kathryn Melver
• Alan Mendelssohn
• Patricia Morrill
• Frank Murdock
• Kiami Rogers
• Don Smith
• Scott Smith
• Terra Vanzant-Stern

Special thanks to Fellows nominating chair Alan Mendelssohn for his hard work in serving as the conference project manager and for manning the booth full time, education chair Don Smith for being the other full-time booth staffer, and marketing chair Dave Harry for generally filling in the inevitable gaps whenever and wherever they appeared.
Please consider the environment. Do you really need a paper copy of this newsletter? Please send a message to jbecker@asq.org with “Electronic Only” in the subject line.

UPCOMING WEBINARS

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Topic</th>
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<tr>
<td>September 10</td>
<td>Chad Vincent</td>
<td>TPM: More Than Painting and Labeling Machines</td>
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<tr>
<td>October 8</td>
<td>Lance Coleman</td>
<td>Lean Forward: An Introduction to Lean Methodology</td>
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<td>November 12</td>
<td>David Hicks</td>
<td>Components of a Successful Lean Management System</td>
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<td>December 10</td>
<td>Dr. Tony Kern</td>
<td>Blue Threat: Human Error Prevention</td>
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T³ – Suggestion Systems – Chad Vincent
Feature: Blue Threat – Dr. Tony Kern
Learning From the Experience of … Rosabeth Moss Kanter
LSS Conference Preview
Lean Bytes
Webinar Update