MANUFACTURING INSIDER

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HACKERS TURN ATTENTION TO MANUFACTURING SECTOR

A wave of hackers is anticipated in an industry dependent on sensitive data, intellectual property and trade secrets.

Maintaining a high level of cyber security is vital for the manufacturing industry. Generally defined as companies in the automotive, electronics, textile, and pharmaceutical space, these companies struggle to protect their sensitive data; intellectual property, trade secrets and details about their customers. The threat to their business mainly exists as "bad actors", hackers focused on manipulating, stealing, or deleting sensitive information are causing manufacturers to spend considerable resources on cyber security. Manufacturers are spending more money each year trying to pinpoint where hackers can potentially infiltrate their systems. In order to stave off the anticipated wave of hackers as well as prevent or mitigate any damage, manufacturing companies must adopt a relevant framework, protect their data, educate employees and implement official cyber policies.

According to an IBM X-Force Research study, over the next few years the manufacturing sector is expected to be one of the most targeted industries for hackers, largely due to the wealth of manufacturing companies' intellectual property. Installing antivirus software and firewalls is not enough. With threats becoming more and more sophisticated, manufacturers need to develop the capabilities to manage such threats before they affect their business. The IBM study found that manufacturers are more vulnerable to older attacks, such as SQL Injection, and Shellshock. SQL injection remains the most prominent form of attack being waged against manufacturers. In addition to these brute force attacks manufacturers also face the threat of malware. The top malware distribution method in manufacturing environments remains web-based downloads, accounting

The next level of service

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for 58 percent of malware. Targeted theft of intellectual property is real and has financial implications. Other cyber-attacks that either purposefully or accidently corrupt critical systems could have more immediate damaging effects. For example, a cyber event that corrupts the configuration file for a robot controller software forcing the robotic arm to draw a line that is 2 mm off while welding the valve of a natural gas grill, could result in a product recall or a lawsuit from an accidental death.

So what are manufacturers expected to do? The first step is to develop a cyber program that looks at the problem from an enterprise risk management perspective. Developing a practical cyber program should come even before installing firewalls and antiviruses. This initial step will do more to protect information than the most expensive firewall. The cyber program sets out a plan to ensure that your company as well as your computer systems are adequately protected. Companies should adopt an operating framework that identifies the most critical risks and implements a program to reduce your critical risks. There are multiple frameworks to choose including the

National Institute of Standards and Technology Cybersecurity Framework and International Organization for Standardization 27000. Developing a risk based cyber program provides you the roadmap so that you can understand your risks and adopt the components of the framework that best suits your company's security needs.

The next step is to protect your information. One of the greatest cyber threats is malicious code; computer programs designed to harm your systems. There are many products in the market that protect your information, from encrypting your data to preventing malware from entering your environment. Selecting the right one is just as important as selecting the right email system; it has to be effective without disrupting your business. Critical to protecting your information is protecting your company from the Internet. The most common method is by installing a hardware firewall between your internal network and the Internet. One of the most common mistakes is failing to update software products with patches provided by the major software vendors. Software vendors identify security vulnerabilities in their products on a periodic basis and send out updates that correct security problems. Not patching your software exposes you to bad actors that review the patches and accompanying information and specifically target companies that do not patch. Additionally one of the most practical information protection methods is to have a disaster recovery plan. Computers die, hard disks fail, employees make mistakes, and malicious programs can destroy data on computers. Having a disaster recovery plan and a backup of information will allow you to recover a loss of data.

Finally, equally critical to a cyber program is educating employees. Individuals with access to your computers and networks can do great harm. Individual employees - even those without any hacking credentials or intentions - can install malicious

software, or engage in other forms of actions harmful to your company. Employees, more often than not, inadvertently create risks for your company. Making employees aware that their actions either increase or decrease your cyber risk is one of the most effective investments you can make to better secure your company.

Technology alone will not assist your organization. Holding employees accountable for how they interact with technology can enforce a consistent cyber workforce. Cyber augment the technical tools and techniques and document how employees need to interact with data and the possible penalties for violating those policies.

As we continue to integrate technology into all facets of the workplace, we also increase our risk. There is no perfect tool, policy or procedure that can protect your organization from every cyber event. However establishing a program with a solid framework will lead you down the path of protecting your data. Without a program you are at the mercy of the bad actors. Today and in the future, practical cyber means practical protection for your systems and employees.

By Warren Zafrin, Managing Director (New York, NY)

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CONTINUOUS IMPROVEMENT: PRODUCTIVITY IS KEY IN 2018 AND BEYOND

At the end of 2017, the largest corporate tax cuts in United States history were passed thus reducing the top corporate rate from 35 to 20 percent. This will allow repatriation of billions of dollars from overseas and many corporations to pass along bonuses and pay raises to their employees, boosting wage growth with average hourly earnings rising to 2.9 percent in January from a year earlier. Combining wage growth with an unemployment rate of 4.1 percent created the best outlook heading into 2018 for employees in almost a decade.

However, with all of this good news, the single biggest threat on the horizon is inflation. New tariffs on steel and aluminum enacted in March are causing an increase on prices for raw materials. There is also competition for employees with specific skills, which will begin to force wages higher causing wage inflation. The higher cost for raw materials and wages will then be passed on to consumers by raising the prices on goods and services causing price inflation. To combat the negative effects of inflation, all companies—especially US manufacturers—need to increase productivity to create a competitive advantage.

Unfortunately, the United States Bureau of Labor Statistics saw only a 0.8 percent productivity gain for the manufacturing sector from 2007-2017. This is the smallest productivity increase during the last 30 years[1]. Novelist and writer Franz Kafka wrote, "Productivity is being able to do things that you were never able to do before." Based on these statistics, some manufacturers need a jump start to get back on track and start doing things they were never able to do before. There is so much to gain from focusing on productivity, but where do you start?

CREATE YOUR ANTHEM
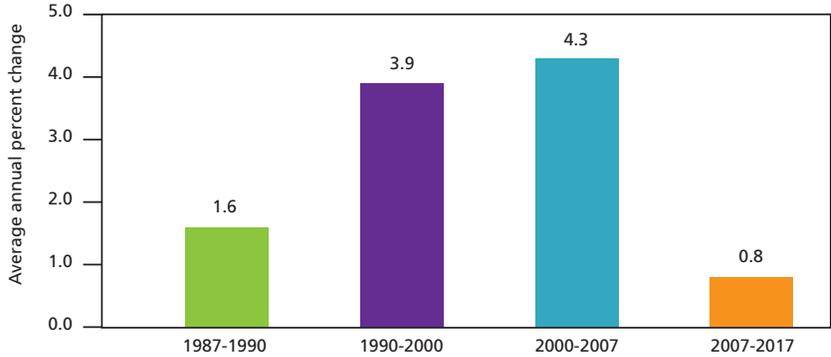The first, and possibly most important step to increasing productivity is to create your company's anthem. Anthem,

Table 1: Productivity change in the manufacturing sector, 1987-2017

as defined by Dictionary.com, is a rousing or uplifting song identified with a particular group, body, or cause. Your company's vision and strategy is its anthem. It is a rallying cry for everyone who spends their days (and some nights) working for or with you. Anthems unite and inspire people for a shared purpose or cause. Yours should ignite passion for everyone – leadership, employees and customers. Think about it, who doesn't feel inspired when you hear songs like "Eye of the Tiger" by Survivor, "We Will Rock You" by Queen, or "Don't Stop Believin'" by Journey. They are inspiring and memorable. Yours should be, too.

Unfortunately, most companies either do not have a defined vision and strategy or employees (even leadership) cannot remember the statements even when they are posted. Your anthem needs to be well stated, communicated and understood by employees at all levels to begin improving productivity. Research shows that employees who find their company's vision meaningful have engagement levels of 68 percent, which is 18 points above average[2]. That's a pretty big competitive advantage.

How do you know if you have the right anthem? How can you create one that will inspire and be remembered?

Analyzing your anthem against the Golden Circle is a good place to start (depicted in Figure 1). Simon Sinek developed the Golden Circle which explains that "people do not buy what you do; they buy why you do it." Your anthem has to articulate 'Why?' you exist and the higher purpose your organization seeks to serve. This is usually the hardest to articulate. The 'why' creates the emotional link between the company, the employees and the consumers. It is the foundation to sparking employee engagement, which is essential for increasing productivity.
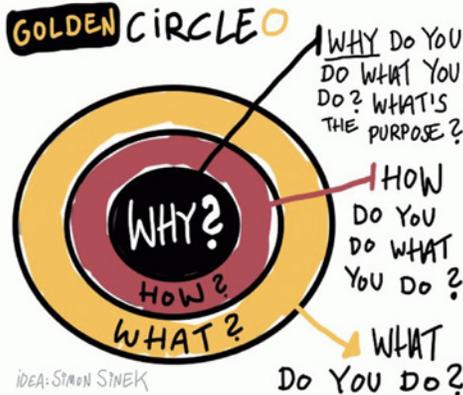

Figure 1: The Golden Circle by Simon Sinek

[1]See table 1 from the U.S, Bureau of Labor Statistics.
[2]Joseph Folkman, '8 Ways To Ensure Your Vision Is Valued', www.forbes.com/sites/joefolkman/2014/04/22/8-ways-to-ensure-your-vision-is-valued/

The 'How?' is the strategy of your organization. It includes proprietary processes, intellectual property (IP), unique selling propositions (USP), and the company's approach to productivity. It sets you apart from your competition and creates a competitive advantage in the marketplace. Your company and products need to be competing on style, functionality, and perhaps the most important and highest differentiating factor, price. The 'What?' is simply what you do; the products or services you offer. By developing an anthem that encompasses the 'Why?', 'How?', and 'What?', you will have a rallying cry to inspire your people and guide you through a market and economy that is experiencing upward price pressures from raw materials and wages. Now that you have your anthem, how do you take it from inspiration to tactical execution?

IMPLEMENT A CONTINUOUS IMPROVEMENT PROGRAM

Ken Blanchard, author and management expert, stated "the productivity of a work group seems to depend on how the group members see their own goals in relation to the goals of the organization." This is very important to remember when trying to increase productivity. Your anthem is there to guide you, but you need to develop programs that will help engrain it in your organization while also allowing your people to see how their contribution impacts the big picture. A structured continuous improvement program will help you accomplish this goal.

There are many continuous improvement programs available in several forms. A successful one not only places the employee first to drive ownership of operational metrics, it also includes behavioral routines that allow employees to suggest and design process solutions. UHY's Optimal Performance Management System (OPMS™) depicted in Figure 2 is a great example. Continuous improvement ties into the corporate strategy and

looks at business processes from the employee perspective (i.e. Gemba which is a Japanese term meaning the factory floor in manufacturing). By going to the Gemba in your organization, you can observe the actual work being performed and identify 'hidden factories.' These hidden factories are activities that reduce the quality or efficiency of a manufacturing operation or business process, but are not initially known to managers or others seeking to improve the process[3]. These important observations are used to design key performance indicators (KPIs) that focus on quality and productivity (e.g. first pass yield and overall equipment effectiveness).

Figure 2: UHY's Optimal Performance Management System Structure

Operational managers need to use KPIs to challenge the employees by asking for their suggestions on how to improve productivity, and then encouraging and incentivizing active employee participation. Since adults learn about 70 percent through on-the-job experiences[4], it's important to let them try their new ideas even if it means a few small failures along the way to many larger successes. Using a 'visual factory' to publish metrics creates transparency throughout the organization, and key learnings keep the employees engaged and encouraged to participate. The other key element is communication. George Bernard Shaw said "The single biggest problem in communication is the

illusion that it has taken place." Visual factories, along with frequent verbal and written forms of communication, will help you successfully communicate. Last, but not least, Celebrate!!! Employees derive a higher level of job satisfaction from feeling important, receiving recognition and being allowed to work at their full potential. Gamifying or creating a sense of competition between functions or operational shifts can also have very positive effects on the entire company.

CREATE AND SUSTAIN A CULTURE OF CONTINUOUS IMPROVEMENT

By simply having a well-defined anthem and approach to continuous improvement, companies can achieve an almost immediate thirty percent (30%) improvement in productivity. Though some of this can be explained by the Hawthorne Effect that states individuals will modify an aspect of their behavior in response to their awareness of being observed. Meaning, some individuals and functions will simply wait for the organization to stop observing and revert back to their previous performance. There is a phrase originated by Peter Drucker and made famous by Mark Fields, former President and CEO at Ford Motor Company, "culture eats strategy for breakfast." How do you ensure your continuous improvement program is sustainable and that productivity will not decline once people are no longer being observed?

You need commitment at all levels to ensure sustainability. Your anthem and approach to continuous improvement must be engrained into every facet of your organization. From the shop floor to the C-suites, everyone must talk the talk and walk the walk. If you want productivity to remain high, your anthem and a focus on continuous improvement **must** become part of your culture. It takes time and discipline to do this effectively. For example, some automobile factories assemble small

[3]http://www.businessdictionary.com/definition/hidden-factory.html
[4]Charles Jennings, former CLO of Reuters

teams before work each week to talk about one tiny change they are going to implement to improve productivity. These week-long improvement efforts (known as kaizen) help set the foundation for the company's culture along with ensuring frequent and effective communication. You can also help embed a sustainable culture of continuous improvement by tying it into annual performance reviews, future job promotions and newly posted positions. Creating a new culture will not happen overnight, but with dedication, patience and the right inspiration, you will be successful.

AGGRESSIVELY DRIVE CHANGE
It takes deliberate work to create an anthem, develop and implement a continuous improvement program, and change the culture of an organization. However, according to Lee Iacocca if you "start with good people, lay out the rules, communicate with your employees, motivate them and reward them. If you do all those things effectively, you can't miss." Be aggressive and take a thoughtful

approach to change by outlining the stakeholders and communication methods using well-defined change management and communication plans. Be transparent with your employees and actively seek their input in open forums. Encourage everyone to sing your anthem and take ownership. Disrupt the status quo and eliminate phrases like "this is how we have always done it." Constantly challenge your people by asking, "What are the benefits from the current process?" If they cannot articulate the benefits, it's usually an 'aha' moment. Then they suddenly stop defending it and are more receptive to changing processes. Change needs to be planned and deliberate or it leads to confusion and chaos. Change is hard, but without change, productivity will not improve. In today's competitive market you need to use what you have more efficiently.

PRODUCTIVITY IS KEY
The remainder of 2018 still has the brightest outlook for economic growth in more than a decade, but upward cost pressures raw materials

and wages are going to test your ability to remain competitive and productive. Companies that have an inspiring anthem and focused culture coupled with a continuous improvement program and plan for change management, will be fierce competition in the manufacturing industry. Remember, productivity will only improve if: 1) your anthem ignites passion for everyone – leadership, employees and customers; 2) your continuous improvement program places the employee first; 3) your entire company embraces a culture of continuous improvement; and 4) your plan for change management is deliberate. Be purposeful when developing all of these elements. Communicate often to keep everyone informed and engaged. This will create a competitive advantage for your company and improve productivity. Make productivity a priority in 2018 and beyond!

By Cynthia Hannafey, Managing Director and Michael R. Heilman, Senior Manager (Atlanta, GA)

CURRENT STATE OF THE MANUFACTURING INDUSTRY

According to a new Standard & Poor's report, there are two key indicators that will tell you what kind of shape the manufacturing industry is in. The first is the Institute for Supply Management's Purchasing Manager's Index and the second is the Federal Reserve's Capacity Utilization Index for motor vehicles and parts. A reading above 50 percent for the ISM index indicates that manufacturing is expanding in the US, and below 50 means that it is contracting. History shows that each time since 1983 that the index fell below 43 percent "speculative grade" automotive companies began to panic. Similarly any time the Fed's utilization rate dropped below 72 percent during that period, it caused stress to automotive companies. Let's take a look at where we stand as of March 2018:

ISM Purchasing Managers Index: 59.3%

Fed.Capacity Utilization Rate: 78.1%

MANUFACTURING INDUSTRY INSIGHT

UHY LLP recognizes that manufacturing companies require their auditors, tax specialists and business advisors to add value to financial reporting activities. That is why we combine the strength of business and financial expertise with a hands-on, "shop floor" approach to solving complex business decisions in these key segments:

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