

SIX SIGMA

SCENE 1.

CG: FBI warning

SCENE 2.

Tape 40, 01:00:00-01:00:12

ANI: SME logo

MUSIC UP THEN UNDER

SCENE 3.

series opening title:  
Manufacturing Insights  
opening music

NARRATION (VO):

MANUFACTURING INSIGHTS, MANUFACTURING ENGINEERING  
MAGAZINE'S VIDEO SERIES FOR PROCESS IMPROVEMENT.

SCENE 4.

program title:  
"Six Sigma" Supered lower 1/3<sup>rd</sup>  
over BG under Program footage in  
mortise

THIS PROGRAM EXAMINES THE QUALITY METHODOLOGY "SIX  
SIGMA" AND ILLUSTRATES ITS IMPACT ON MANUFACTURING AND  
OTHER BUSINESS OPERATIONS AT...

SCENE 5.

Gretag bldg. exterior in mortise,  
top 1/2, lower 1/3<sup>rd</sup> super:  
"Gretag Imaging"

GRETAG IMAGING, A PHOTOGRAPHIC HARDWARE MANUFACTURER  
WHERE THEY SAY SIX SIGMA HAS BEEN SUCCESSFUL IN  
IMPROVING CUSTOMER SATISFACTION BY HELPING TO SOLVE  
DIFFICULT LOGISTICAL PROBLEMS.

SCENE 6

OCD Exterior in mortise, Super  
"Johnson & Johnson Ortho Clinical  
Diagnostics" lower 1/3<sup>rd</sup> over BG.

... AT ORTHO CLINICAL DIAGNOSTICS, A DIVISION OF JOHNSON  
& JOHNSON'S WHERE THEY BELIEVE SIX SIGMA WILL MAKE  
THEM NUMBER ONE IN THEIR INDUSTRY BY HELPING TO  
IDENTIFY, AND CREATE, PERMANENT SOLUTIONS TO ANY  
MANUFACTURING PROBLEM.

SCENE 7

Product & plant shots in mortise,  
top 1/2, lower 1/3<sup>rd</sup> super:

AND AT LOCKHEED MARTIN'S GOVERNMENT ELECTRONIC SYSTEMS

"LOCKHEED MARTIN"

PLANT WHERE THEY'VE SAVED NEARLY 3 BILLION DOLLARS  
OVER THE LAST THREE YEARS WITH A COMBINATION OF SIX  
SIGMA AND LEAN MANUFACTURING PROGRAMS.

SCENE 8  
DIS to

NARRATION:

SIX SIGMA HAS BEEN SIMULTANEOUSLY CALLED A REVOLUTION...  
AND... NOTHING NEW. INDEED, MANY OF THE TOOLS IN THE  
SIX SIGMA METHODOLOGY ARE THE SAME TOOLS USED IN A  
NUMBER OF OTHER QUALITY INITIATIVES.

Scene 9  
DIS to

THE DIFFERENCE APPEARS TO BE IN THE ORGANIZATION AND  
APPLICATION OF THOSE TOOLS... THE LIMITED STAFFING  
REQUIREMENT FOR IT'S UTILIZATION AND... ITS EMPHASIS ON  
SPECIFIC FIXED-LENGTH PROJECTS.

Scene 10  
Dis to

THE DEFINITION OF SIX SIGMA IS NOT SIMPLE... MORE  
ACCURATELY, SIX SIGMA HAS SEVERAL DEFINITIONS...

SCENE 11  
Dis to

FOR SOME, IT IS A QUALITY METRIC THAT CAN BE USED TO  
COMPARE PROCESSES; A QUALITY SYSTEM THAT CONTROLS  
VARIATION IN PRODUCTS; A PHILOSOPHY THAT USES  
COLLECTED AND TESTED DATA TO MAKE DECISIONS; AND AN  
OVERALL QUALITY IMPROVEMENT AND BUSINESS STRATEGY.

SCENE 12  
DIS to

SIX SIGMA IS A PROBLEM SOLVING METHOD THAT IDENTIFIES  
ROOT CAUSES AND HELPS DETERMINE PERMANENT SOLUTIONS.

SCENE 13  
DIS to

NARRATION:

SIX SIGMA STARTED AT MOTOROLA IN THE 1980'S AS A WAY OF REDUCING DEFECTS AND PRODUCTION CYCLE TIME. PRACTICED ONLY IN THEIR MANUFACTURING ENVIRONMENTS, MANAGEMENT LATER ESTIMATED THAT ANOTHER FIVE BILLION DOLLARS COULD HAVE BEEN SAVED IN THE EARLY YEARS BY IMPLEMENTING SIX SIGMA IN THE ADMINISTRATIVE AS WELL AS BUSINESS AREAS OF THE CORPORATION.

SCENE 14  
DIS to titles of companies..  
GENERAL ELECTRIC, ALLIED SIGNAL,  
LOCKHEED MARTIN, IBM, AND SONY

SINCE THAT TIME, SIX SIGMA HAS IMPROVED THE BOTTOM LINE AT SEVERAL HIGH PROFILE CORPORATIONS.

SCENE 15  
DIS to

THESE ORGANIZATIONS, AND OTHERS, ARE IMPLEMENTING SIX SIGMA IN MANUFACTURING AND TRANSACTIONAL AREAS LIKE SALES, SERVICE AND SHIPPING.

SCENE 16  
DIS to

THE BASIC 6 SIGMA PHILOSOPHY IS THAT ALL PROCESSES SHOW SOME VARIATION, WHICH CAN RESULT IN PRODUCT DEFECTS THAT COST TIME AND MONEY. THESE PROCESS VARIATIONS CAN BE REDUCED BY DESIGNING EXPERIMENTS TO METHODICALLY AND SYSTEMATICALLY IDENTIFY THE REAL CAUSE OF THE PROBLEM. THE RESULT OF CONTROLLING THE VARIATION CAN REDUCE SCRAP, DEFECTS AND REPAIRS, WHILE OPTIMIZING REPEATABILITY AND EFFICIENCY.

Scene 17  
DIS to

NARRATION:

THE TYPICAL IMPLEMENTATION OF SIX SIGMA BEGINS WITH  
THE TRAINING OF A MANAGEMENT LEADERSHIP TEAM.

SCENE 18  
DIS to

KEY PEOPLE ARE THEN TRAINED IN SIX SIGMA METHODOLOGY  
AND DESIGNATED AS GREEN BELTS OR BLACK BELTS DEPENDING  
ON THEIR LEVEL OF TRAINING. THE NUMBER OF GREEN AND  
BLACK BELTS IS DETERMINED BY THE ORGANIZATION.  
COMPLETION OF AN ACTUAL PROJECT IS A PREREQUISITE OF  
SUCCESSFUL SIX SIGMA TRAINING.

SCENE 19  
DIS to

SIX SIGMA TRAINING TEACHES OBSERVATIONAL METHODS AND  
SCIENTIFIC EXPERIMENTATION TECHNIQUES. EXPERIMENT  
DESIGN AND GRAPHIC METHODS OF ANALYSIS AND SPC ARE  
ALSO INCLUDED IN THE CURRICULUM.

SCENE 20  
DIS to

THE SIX SIGMA MOVEMENT HAS ITS CRITICS AND ITS  
SUPPORTERS, ITS ADVANTAGES AND ITS FLAWS, BUT SIX  
SIGMA IS DELIVERING PROVEN QUALITY AND COST  
IMPROVEMENTS ON ALL LEVELS AND IN ALL ASPECTS OF  
BUSINESS.

SCENE 21

NARRATION

GRETAG IMAGING, IN CHICOPEE, MASSACHUSETTS IS A  
MANUFACTURER OF PHOTO PROCESSING SYSTEMS AND IMAGING  
EQUIPMENT PROFESSIONAL. ITS PRODUCTS AND SERVICES

INCLUDE MINILABS, CENTRAL LABS, INTERNET APPLICATIONS  
AND SOFTWARE.

SCENE 22

THEY BEGAN THEIR SIX SIGMA PROGRAM ABOUT TWO YEARS  
AGO. THEIR DIRECTOR OF PROCESS MANAGEMENT, JIM MARKEY  
HAS A UNIQUE VIEW OF THE METHODOLOGY.

SCENE 23

DIS to Jim Markey OC with name and  
title super: Jim Markey, Director  
of Process Management, Gretag

**(1) MARKEY: ISO 9000 is the rules, and Six Sigma is  
the tools, so rules and tools is a good way to  
remember that. Six Sigma gives you analytical  
knowledge, understanding. It also gives you the soft  
skills such as project management, brainstorming  
techniques, change management, and so forth, to help  
people understand that this is not an efficiency, job-  
cutting exercise, it's actually to help them improve  
their processes and make life easier for them.**

Scene 24  
DIS to

**NARRATION:**

GRETAG USES SIX SIGMA IN THEIR MANUFACTURING  
PROCESSES, BUT GUIDED BY THEIR CUSTOMER SATISFACTION  
GOALS, THEY HAVE IMPLEMENTED SIX SIGMA IN OTHER AREAS  
AS WELL.

SCENE 25

DIS to Silvano OC with name and  
tile super: Rich Silvano, Process

**(2) SILVANO: One of the things that is somewhat**

Manager, Gretag

unique here is that we're using Six Sigma quite a bit more in the transactional side of our business than we are on the manufacturing side.

SCENE 26

DIS to Lambert OC with name and title super: Tara Lambert, Account Representative, Gretag

(3) Lambert: ...In the Customer Service Department we aren't making anything that you buy or sell, we are providing a service. And we are using the tools fairly well to find a way to interface with the customers and interface with the rest of the company. Purchasing, Planning, Accounting, IT, all of those things. It is applicable to any department...

SCENE 27

DIS to

NARRATION:

IMPLEMENTATION OF SIX SIGMA MUST BE TAILORED TO FIT THE ORGANIZATION. "PLEASING OURSELVES", A PHRASE USED AT GRETAG, IS A FRINGE BENEFIT THAT GOES ALONG WITH THE IDEA THAT ULTIMATELY SIX SIGMA MAKES THE JOB EASIER, IMPROVES QUALITY AND SATISFIES CUSTOMERS.

SCENE 28

DIS to

(4) MARKEY: The strategy here is to initially stabilize our processes. ISO 9000 is supposed to do that in theory, but again, it doesn't give you the tools to do that, so we're kind of stumbling blind in the dark until we came upon Six Sigma.

SCENE 29  
DIS to

(5) SILVANO: ... unlike TQM, where the notion was to spread the word for everyone within the organization. 6 Sigma is a much longer process, in that you take a handful of folks initially, depending on the size of the organization. -EDIT- Here we've got about a dozen folks involved in 6 Sigma initially that are spreading the word. They're learning the tools; they're getting involved.

SCENE 30  
DIS to

(5A) LAMBERT: The general goal first would be to maximize the internal processes of your business, utilizing the DMAIC process. Then it moves on outward to bringing the Six Sigma methodology to your vendors, in order to maximize their service to you, then eventually creating new processes that already have those measures and methodologies in place so that you can continue the improvement process.

SCENE 31  
DIS to

NARRATION:

THE SIX SIGMA PROCESS ENABLES OBJECTIVE PROBLEM SOLVING BY PROVIDING A CONTROLLED AND STRUCTURED APPROACH THROUGH A NUMBER OF STATISTICAL TOOLS.

SCENE 32  
DIS to

(8) MARKEY: What happens often in a non-Six Sigma environment is you'll get a bunch of people in a room and you're not in there 5 minutes and people will start talking about what solutions you're going to come up with. They don't even know what the problem is yet. They think they do. They know what the symptom is, but they don't know what the problem is. So they're throwing solutions up at symptoms, rather than causes. It's a crapshoot. You generally end up tackling the wrong thing and just adding variation into your processes rather than solving the problem.

SCENE 33  
DIS to

(9) LAMBERT: The thing about Six Sigma is, you want to take the people out of it. It's not the people doing the job, it's the process they're following.

SCENE 34  
DIS to

NARRATION:

THE NUMBER ONE PROBLEM AT GRETAG WAS A SITUATION THAT AROSE WHEN THE RIGHT SERVICE PARTS WERE NOT SENT OUT ON TIME. AS A CONSEQUENCE THEIR CUSTOMERS WERE NOT ABLE TO PROCESS FILM FOR SEVERAL DAYS AT A TIME. A CONDITION GRETAG CALLS "STORE DOWN". WHEN SERVICE PARTS ARE REQUIRED BY THE FIELD SERVICE TECHNICIANS THEY MUST MAKE SURE THEY ORDER SEVERAL SPECIFIC REPLACEMENT PARTS TO GET THE MACHINE UP AND RUNNING IN LESS THAN 24 HOURS.



SCENE 35  
DIS to

(10) SILVANO: What Six Sigma has done is help define an operational definition of the customer's request.

-EDIT- In essence, what Six Sigma allowed us to do is take an objective approach to this and said let's first define what our shipment schedule is based on the customer's request. Let's look at how well we do against that, and look at where our weaknesses are. It also pointed out that internally, if we had the parts, our process was probably a 4 or 4.2 Sigma process. But from a customer's perspective, when the parts were on back order, it was probably down around a 3 Sigma process.

SCENE 36  
DIS to

NARRATION:

SIX SIGMA DOES INCORPORATE A NUMBER OF TRIED AND TRUE QUALITY AND STATISTICAL METHODS BUT ITS OVERALL METHOD REPRESENTS A NEW APPROACH TO QUALITY, PROBLEM-SOLVING AND TRADITIONAL TECHNIQUES.

SCENE 37  
DIS to

(11) MARKEY: Traditionally in American business the firefighter has been rewarded, they're the heroes, they come in on white horses and put out the fire. But those gains are oftentimes short-lived, and often they'll solve the problem in one department and that problem will just be squeezed out to another department.

SCENE 38  
DIS to

NARRATION:

SIX SIGMA PROMOTES A DEEPER UNDERSTANDING OF PROCESSES AND THE ELIMINATION OF PROBLEMS ALLOWING TRUE CONTINUOUS IMPROVEMENT. THE REASON AND GOAL OF ITS STRUCTURED, PROJECT APPROACH IS LONG-TERM IMPROVEMENT, PERMANENT SOLUTIONS TO LONG-STANDING PROBLEMS AND BOTTOM-LINE EFFICIENCY.

SCENE 39  
DIS to

(12) LAMBERT: ... Six Sigma allows you a template to look at it and have it become realized, to allow people that aren't working in the process that you obviously need the backing of, such as management, to actually see, without doing the job, what's going on.

SCENE 40  
DIS to Cull OC

(13) SILVANO: ...these are problems that have been around for a long time and have had a variety of different solutions attempted, and in many instances they've only worked temporarily because they haven't really found the root cause of the issue. The notion of it being a project that has a start and end is critical to the overall success of Six Sigma within any organization.

SCENE 41  
DIS to

NARRATION:

WHAT MAKES SIX SIGMA SUCCESSFUL WHERE OTHER  
INITIATIVES FAIL?

SCENE 42  
DIS to

(14) MARKEY: ...you'd have 25 percent of your workforce that really excelled, 50 percent that maybe did so-so, and 25 percent that failed dismally at that TQM effort. What that caused was a lot of discontent, a lot of resentment, and I think it was rejected for that reason, that's one of the reasons. The other

reason is there was not a clear enough top-down driven philosophy with TQM, it was a bit looser than Six Sigma. There was also no reference to the bottom line, and that's probably the biggest reason Six Sigma is successful...

-FTB-

SCENE 43  
DIS to

NARRATION:

ORTHO CLINICAL DIAGNOSTICS, A JOHNSON AND JOHNSON COMPANY IN ROCHESTER, NEW YORK, MANUFACTURES AUTOMATED BLOOD DIAGNOSTIC EQUIPMENT FOR SCREENING, DIAGNOSING, MONITORING AND CONFIRMING DISEASE. THEY STARTED THEIR SIX SIGMA PROGRAM IN 1998 AND ARE EXTREMELY PLEASED WITH THE RESULTS SO FAR.

SCENE 44  
DIS to Oenick OC with name and title super: Marsha Oenick, Director of Design Support, Ortho-Clinical Diagnostics

(15) OENICK: ...you start seeing impact as soon as you start training your first wave of black belts, because they're going to start delivering business results immediately. (Otherwise they can't become black belts and you haven't chosen projects correctly.) In terms of getting the gain back from the training investment, really within 6-9 months you can start putting money right to the bottom line.

SCENE 45

DIS to Kirsch OC with name and  
title super: Andrew Kirch, Process  
Excellence Site Leader, Ortho-  
Clinical Diagnostics

(16) KIRSCH: The major benefits are a reduction in our waste, which is essentially a metric of quality, so our quality has improved as a result of our seeing less scrap. Another thing is productivity. Before we were reworking material, it was costing us a lot in terms of work in progress or downtime for machines. Now we're more of an even flow manufacturing facility, which fits into our lean principles too. -EDIT- We have taken our scrap, which was 16 million in 1998 and reduced it by 4 million over two years.

SCENE 46

DIS to

NARRATION:

WORKFORCE EMPOWERMENT AND MANAGEMENT COMMITMENT BOTH PLAY MAJOR ROLES IN SIX SIGMA BUT UNLIKE SOME INITIATIVES THE ENTIRE WORKFORCE DOES NOT HAVE TO BE CONVINCED TO BUY-IN OR EVEN TRAINED TO MAKE SIX SIGMA WORK.

SCENE 47

DIS to Henderson OC with name and  
title super: Derek Henderson,  
Process Excellence Site Leader,  
Ortho-Clinical Diagnostics

(17) HENDERSON: ...it's got to be interwoven tightly into the organization. It's a question of leadership and not buy-in. It needs to start from a relatively high level that understands the value of Six Sigma and

has some understanding of what is required to really  
deploy it effectively throughout an organization.

SCENE 48  
DIS to

(18) KIRSCH: The way employees are empowered  
basically is, we're providing them with a mechanism to  
generate data and use data to make decisions, and  
that's how you can make impact with management groups  
or leadership types. If you measure something and can  
show data, that is how you can make decisions.

SCENE 49  
DIS to

(19) OENICK: Management needs to be really invested  
in it so that they give their folks the opportunity to  
actually apply it, and without that it does become  
another fad. You can train everybody in the business,  
and if management doesn't let you use it, it's a big  
waste.

SCENE 50  
DIS to

NARRATION:

THE TRAINING ASPECTS OF SIX SIGMA ARE LESS EXTENSIVE  
THAN MIGHT BE IMAGINED; ONLY SELECTED INDIVIDUALS ARE  
TRAINED AND ONLY FOR A LIMITED TIME.

SCENE 51  
DIS to

(20) HENDERSON: ...here at OCD green belts go through two weeks of training and black belts go through four weeks of training. The bottom line is they're problem solvers, so we've given them the tools to go out and solve problems they run into on a day to day basis.

SCENE 52  
DIS to

(21) OENICK: One of the critical parts of that however, is to know which tools to apply to which problem. Some projects, maybe all you really have to do is a process map, and lo and behold you understand what the problem is. In other cases maybe you need to do a substantial amount of data mining, or a substantial amount of experimentation in order to really understand what the source of the problem is and how best to fix it.

SCENE 53  
DIS to

(23) KIRSCH: ... The core tools that we use are correlation regression, process capability studies, gage capability studies. Many times we'll find we think we have defect but it turns out to be measurement system noise. Other times DOE's are a big part of it.

SCENE 54  
DIS to

(24) OENICK: A big factor is keeping people from cause jumping, to go through it very methodically, because you end up solving the problem very differently if you really understand what the problem is.

SCENE 55  
DIS to

NARRATION:

OCD HAS LEARNED THROUGH SIX SIGMA THAT SOME MANUFACTURING PROBLEMS CAN'T BE FIXED BECAUSE OF FLAWS WITHIN THE DESIGN. THIS HAS LED THEM TO MOVE THE METHODOLOGY INTO THE DESIGN PROCESS.

SCENE 56  
DIS to

(25) OENICK: Design for Six Sigma has two basic goals. One is to delight manufacturing by delivering them products and processes that they don't have to start fixing as soon as R&D transfers it to them. But the really critical part of Design for Six Sigma is delighting the customer, really understanding what the needs of the customer are, and what it's going to take to make them happy.

SCENE 57  
DIS to

(26) HENDERSON: ...rather than getting a design and working on the floor to identify defects and quality issues, we can use the Six Sigma tool set up front in the design phase and identify those sources of variability and reduce the potential appearance of defects in manufacturing.



SCENE 58  
DIS to

NARRATION:

THE D-M-A-I-C PROCESS IS AT THE HEART OF SIX SIGMA AND GIVES IT THE STRUCTURE THAT MAKES IT WORK BUT ITS PROJECT ORIENTATION GIVES IT AN INSTANT GRATIFICATION ASPECT THAT PROVIDES THE REWARDS TO MAKE IT WORTHWHILE.

SCENE 59  
DIS to

(27) HENDERSON: Define, Measure, Analyze, Innovative Improvement, and Control. Those are the five basic steps, and it's really a problem-solving process that the DMAIC process outlines.

SCENE 60  
DIS to

(28) KIRSCH: The first phase is define, where you essentially define your defect and define your business and customer impact. Then you go into measure, which is where you learn about your process— you map it and list all your inputs and outputs. Then you go into analyze, which ones are our key variables. Then you go to improve, you might use some DOE's or optimization experiments, control those variables and find out where they need to be to give you optimum

output. Lastly, the most important phase is control, what are you going to do to make sure this variable never happens again.

SCENE 61  
DIS to

(29) HENDERSON: Project identification is crucial. The way we go at identifying projects, we look at several things. We want to have financial results through these projects, so it has to be important to the organization. That serves a dual purpose. One is we know that once a project is done, we will receive some sort of financial benefit back from it. The second thing is, if it's important to the organization, it will be aligned with what we need to do for that month, that year, or any particular strategy we have.

SCENE 62  
DIS to

NARRATION:  
  
PROJECT ORIENTATION ENABLES EFFORT AND ANALYSIS TO BE CONCENTRATED ON THE SOLUTION TO SPECIFIC PROBLEMS. SOLUTIONS THAT ARE VISIBLE, PROVIDE QUANTIFIABLE RESULTS, AND IN TURN, MOTIVATION TO THOSE INVOLVED.

SCENE 63  
DIS to

KIRSCH: That is one of the core principles of Six Sigma, breaking it down and sifting through all the process variables that are causing your defect or your

variability, and rooting out the key ones, so you can focus your project on those key areas and have an impact.

SCENE 64  
DIS to

NARRATION:

THE USE OF THE SIX SIGMA TOOL SET ENABLED OCD TO FIND AND FIX A PERSISTENT COMPRESSOR PROBLEM ON ONE OF THEIR DIAGNOSTIC ANALYZERS. AT THE SAME TIME, THE METHODOLOGY IDENTIFIED SOME COMMUNICATIONS ISSUES WITH THE VENDOR, THE Real CAUSE OF THE PROBLEM.

SCENE 65  
DIS to

HENDERSON:

We were having a defect or scrap rate of around 18 percent on that particular compressor. Compressors aren't cheap, so to have that level of defect is a financial burden on the organization. Through the use of the Six Sigma tool set—in fact, one of our black belts that went through the training used this as one of his projects to get certified—went through and identified what the cause was. There was a discrepancy between the supplier and OCD as far as what the specifications were. We also found that the measurement systems we were using weren't adequate, and we were able to use that information and redesign the compressor using design of experiments, to basically come up with a new and improved compressor design that had a scrap rate of less than 5 percent

SCENE 66  
DIS to

NARRATION:

OCD IS OBVIOUSLY COMMITTED TO SIX SIGMA AND EXPECTS GREAT THINGS FROM IT. THEIR IMPLEMENTATION IS AGGRESSIVE AND DEMONSTRATES THEIR FAITH IN THE METHODOLOGY.

SCENE 67  
DIS to

(30) OENICK: Design for Six Sigma is what's going to make us the number one player in our market, and that's where we want to be.

SCENE 68  
DIS to

(31) KIRSCH: ...ultimately we want to deliver a product to our customer that is never defective. For a business impact, ultimately we want to eliminate scrap and rework associated with product defects.

SCENE 69  
DIS to

(32) HENDERSON: Six Sigma is viewed as a very powerful tool here, a methodology within OCD, so we want to use it to drive results.

SCENE 70  
DIS to

NARRATION:

LOCKHEED MARTIN MANUFACTURES ADVANCED MILITARY EQUIPMENT AND SYSTEMS. THEIR GOVERNMENT ELECTRONIC SYSTEMS PLANT IN MOORESTOWN, NEW JERSEY PRODUCES

HARDWARE, SOFTWARE AND SYSTEMS INTEGRATION FOR THE  
NAVY.

SCENE 71  
DIS to

NARRATION:

**THEY HAVE BEEN IMPLEMENTING THE SIX SIGMA METHODOLOGY  
IN COMBINATION WITH LEAN MANUFACTURING FOR 4 YEARS  
ACROSS A CORPORATION OF ABOUT 130,000 PEOPLE WITH 18  
MAJOR SITES ACROSS THE UNITED STATES.**

SCENE 72  
DIS to Tracy Houpt OC with name  
and title super: Tracy Houpt, Lm21  
Subject Matter Expert, Lockheed  
Martin

(33) HOUPT: Our philosophy of using Lean and Six  
Sigma is to do it throughout your whole enterprise.  
We have projects in our Human Resources department, we  
have projects in our Finance department. We even try  
to practice what we preach and use the tools on us so  
that we improve our training over time (and our  
delivery).

SCENE 73  
DIS to Jackson OC with name and  
title super: Thomas Jackson, Lean  
and Six Sigma Programs Manager,  
Lockheed Martin, Government  
Electronic Systems

(34) JACKSON: Looking at it with both Lean and Six  
Sigma as tools in your tool kit, it just provides more  
capability for you to improve your processes.

SCENE 74  
DIS

NARRATION:

IMPLEMENTATION STRATEGY IN A COMPANY AS LARGE AS

LOCKHEED MARTIN IS A MASSIVE UNDERTAKING. IDENTIFYING THE RIGHT PROJECTS IS STILL CRITICAL. GETTING THE WORD OUT AND CLEARING RESISTANCE IS FUNDAMENTAL. BUT EQUALLY IMPORTANT IS THE SIMULTANEOUS INITIATION OF PROCESS ANALYSIS AND THE SIX SIGMA METHODOLOGY.

SCENE 75  
DIS

(35) HOUPT: I'm one of 17 consultants we have working for corporate staff to help spread Lean and Six Sigma across the corporation. -EDIT- ...we're there to help break down the barriers. We also have to have some type of leadership council that determines what projects to work on. At the same time you've got to get the activity started. At the very basis we're trying to understand how do we work, how do we do process invoices, how do we do an operation on the manufacturing floor. Really understanding how we do it and looking at it in terms of waste.

SCENE 76  
DIS to

(36) JACKSON: We're picking projects and picking improvement opportunities that are really critical to the business. They align with our strategic plan and they also are key indicators for a successful Lockheed Martin in the future.

SCENE 77  
DIS to

(37) HOUPT: Projects and events are highly important for a Lean Six Sigma deployment. They focus the activity so that you can start with an objective and

focus the resources and get that objective done in a key time frame.

SCENE 78  
DIS to

NARRATION:

PERMANENT SOLUTIONS TO PROBLEMS AND REDUCED PROCESS VARIABILITY ARE DIRECT RESULTS OF SIX SIGMA BUT SO ARE OTHER SECONDARY BENEFITS AS WELL.

SCENE 79  
DIS to

(38) JACKSON: ...it also improves the capability of your workforce. It's getting the knowledge into your workforce and having your workforce think about achieving solutions to problems using that toolkit and the tool set.

SCENE 80  
DIS to

(39) HOUPT: We get them involved in every project and kaizan event that we can, because they're the ones doing the work, they understand what it takes to improve that area. A lot of times we'll bring a black belt in that has the tools and knowledge to be able to sift through the data, but again, when it comes to the time of brainstorming, it's usually the workers that come up with the best ideas.

SCENE 81  
DIS to

NARRATION:

WHILE A KAIZAN EVENT IS NOT A STANDARD SIX SIGMA PRACTICE, LOCKHEED MARTIN FINDS THEM USEFUL. IT'S A GOOD EXAMPLE OF THE TAILORING THAT MUST BE DONE TO MAKE SIX SIGMA FIT THE ORGANIZATION.

SCENE 82  
DIS to

(41) JACKSON: There is no one set recipe that's going to work for every business. You will inevitably have to tailor some of your training techniques and materials to apply to the types of process that you work with. As far as tailoring, just utilize a relative approach and get people engaged up front and find out the types of problems they're struggling with...

SCENE 83  
DIS to

NARRATION:

LOCKHEED MARTIN IS USING SIX SIGMA IN TRANSACTIONAL AREAS AS WELL AS MANUFACTURING. THEY'VE USED A PHASED APPROACH TO IMPLEMENTATION AND LEARNED THAT BEING OVER-ENTHUSIASTIC CAN BE AS COUNTER-PRODUCTIVE AS RESISTANCE-TO-CHANGE.

SCENE 84  
DIS to

(42) JACKSON: ...engaging your top level management and providing a core level of knowledge into the business, that might be your first phase. Your second phase



might picking out your first initial targets and defining the scope of these targets. The third phase would be obviously training your teams to create the body of knowledge in your business, and the last phase would be deploying and measuring the results.

SCENE 85  
DIS to

(43) HOUPT: In terms of deploying it, the one warning would be not to get so excited about the tools and process and lose sight of what you're actually doing in a business. A lot of times we train the black belts, they know the tools in and out, but as they come in and try to make a change in their area, they just don't even know what that product or service is about.

SCENE 86  
DIS to

NARRATION:

LOCKHEED MARTIN'S SIX SIGMA PROGRAM IS EXTENSIVE AND LONG-TERM. THEY'VE SEEN IMMEDIATE RETURNS ON THEIR INVESTMENT AND THEY'VE LEARNED THROUGH EXPERIENCE WHAT IT TAKES TO MAKE IT WORK. HERE IS THEIR ADVICE TO COMPANIES THINKING ABOUT SIX SIGMA.

SCENE 87  
DIS to

(44) JACKSON: I would encourage companies not to rely on consultants. I would encourage you to create your own internal body of knowledge. These people will become your experts...

SCENE 88  
DIS to

(45) HOUPT: ...but you have to be careful, because if

you just rely on the black belts and green belts, a lot of times people will say well they're doing the changes, so I don't have to. To really get the culture change you want you have to get everybody involved. One of the key things we try to do at Lockheed Martin is get everybody to see something that's wasteful, be able to call it waste, and be able to get rid of it.

-ftb-

SCENE 89  
DIS to

NARRATION:

ANY PROCESS CAN SHOW VARIATION THAT CAN CAUSE PROBLEMS, WASTE AND INEFFICIENCY.

SCENE 90  
DIS to

SIX SIGMA'S OBSERVATIONAL PROBLEM SOLVING METHODS IDENTIFY ROOT CAUSES OF THOSE PROBLEMS AND ARE THEN USED TO DETERMINE PERMANENT SOLUTIONS.

SCENE 91  
DIS to

THE METHODOLOGY IS PROJECT ORIENTATED WHICH PROVIDES A "BEGINNING AND END" FEATURE, DELIVERING REWARDS THAT MAKE SIX SIGMA MEANINGFUL AND PROFITABLE.

SCENE 92  
DIS to

DESIGN FOR SIX SIGMA, A RELATIVELY NEW ASPECT, IS BEING USED TO IDENTIFY AND PREVENT DESIGN FLAWS BEFORE THEY CAN BECOME PART OF A PROCESS.

SCENE 93  
DIS to

SIX SIGMA IS PROVING TO BE AS ADVANTAGEOUS IN TRANSACTIONAL AREAS OF COMPANIES AS IT IS IN MANUFACTURING

SCENE 94  
DIS to

SIX SIGMA CAN PROVIDE IMMEDIATE RETURNS WHEN IMPLEMENTED PROPERLY.

SCENE 95  
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