AUTODESK **UNIVERSITY** 2014

# White is the new Black -Selling Clouds to Management

Andrew Warren – Bridgestone
***Panel:***
Michael Gulway – Advanced Solutions
Jason Barnett – Advanced Solutions
Rick Noriega – VACCO
Wayne Edwards – Autodesk
Eamon O'Gorman – Autodesk
Brett Moushon – Autodesk
Matt Wegmann - ECI
Orrin Bourne – Greenpoint
Avi Robbins - Porex

**BM7272** After you have bought in at AU and your Reseller has given you a wonderful demo now you have to Justify PLM. In this class we will discuss things such as ROI tools to help come up with the funding, Using industry standard savings and how to apply those to your company, Straw man of the selling process, where Autodesk can help and what others have done to make this happen. Tangible savings can be hard to identify since so much of the savings comes from not spending money from mistakes. How can you identify those areas that cost your company $$ now to save with PLM360? The idea of spending money in the cloud can be hard to wrap your mind around.

## Learning Objectives

At the end of this class, you will be able to:

- Finding savings at your company
- Applying an ROI to PLM360
- Pitfalls to watch out for when presenting this to management
- Teaching people to think differently about software vs. the Cloud

## About the Speaker

*Andy is a designer and software consultant specializing in implementation of CAD and data-management software and 3D design. Based in Nashville, Tennessee, he has over 15 years of experience with Autodesk, Inc., products. He leads a team that oversees support, training, implementation, and licensing for Bridgestone Americas, Inc. Bridgestone has over 1,500 users in 8 countries, along with long-range support worldwide. Andy supports numerous disciplines, from Revit software and ReCap software to Inventor software and Autodesk PLM 360 software. He has worked for Striker Systems, a computer numerical control software company focused on software implementations. He also was the Autodesk Authorized Training Center (ATC) manager for Striker Technology Solutions. He worked in the environmental engineering field and the retail store fixtures industry for several years. Certifications include Manufacturing Certified Implementation Expert, Inventor Professional, AutoCAD Professional, lean manufacturing, and certification in machine programming. Andy is president of Microsoft Test Automation User Group (MTAUG) Local Users Group.*

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## A little about this class…

This class will be a panel discussing different aspects of gaining approval for; Finical, political, technical, emotional, territorial, confidential and various other management hurtles for PLM360. We have brought together several different people for this panel. We will be taking questions and requests as we go along.

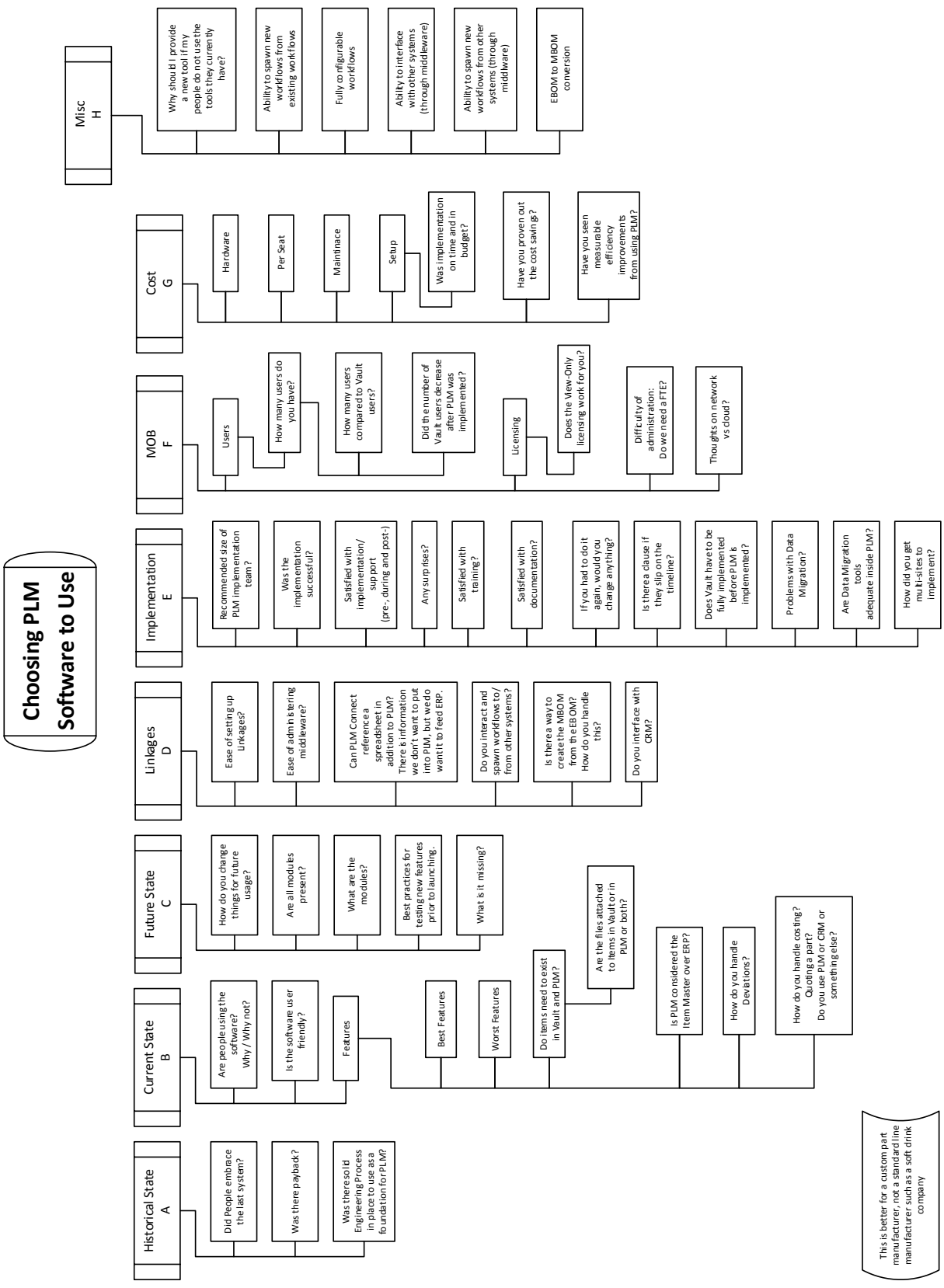
## Finding savings at your company

The only reason most companies will spend money is to either make money or to save money. There are a couple different was to find the savings to help pay for PLM. The first starts with your SME. Only you know your business and your company. Next is to get your reseller or Autodesk to do an assessment. This will help you find areas you may not even realize PLM can save you money. We knew we had many different systems at Bridgestone but it took the assessment to realize just how many there were.

Savings can mean many different things. You have areas where you can spend less i.e. your Engineers spend 10 hours a week each doing paperwork, PLM will cut that to 1 hour a week. Then you have Cost Avoidance i.e. you had five parts last month that had to be re-worked. This was due to the wrong drawing being used. With PLM you can reduce that by ensuring you always have the latest.

**Panel:**

- Why do you think you need PLM?
- Where are the current pain points you think you can eliminate with PLM?
- What were the main areas of savings in your company?
- Cost Savings vs Cost Avoidance
- Do you know how much time your company is wasting or just know you are wasting time?
- Do you know what you want PLM to do for you?
- What about compared to other divisions  or software?


Choosing PLM Software to Use
Historical State A
Did People embrace the last system?
Was there payback?
Was there solid Engineering Process in place to use as a foundation for PLM?
Current State B
Are people using the software? Why / Why not?
Is the software user friendly?
Features
Best Features
Worst Features
Do Items need to exist in Vault and PLM?
Are the files attached to Items in Vault or in PLM or both?
Is PLM considered the Item Master over ERP?
How do you handle Deviations?
How do you handle costing? Quoting a part? Do you use PLM or CRM or something else?
Future State C
How do you change things for future usage?
Are all modules present?
What are the modules?
Best practices for testing new features prior to launching.
What is it missing?
Linkages D
Ease of setting up Linkages?
Ease of administering middleware?
Can PLM Connect reference a spreadsheet in addition to PLM? There is information we don't want to put into PLM, but we do want it to feed ERP.
Do you interact and spawn workflows to/ from other systems?
Is there a way to create the MBOM from the EBOM? How do you handle this?
Do you interface with CRM?
Implementation E
Recommended size of PLM implementation team?
Was the implementation successful?
Satisfied with implementation/ support (pre-, during and post-)
Any surprises?
Satisfied with training?
Satisfied with documentation?
If you had to do it again, would you change anything?
Is there a clause if they slip on the timeline?
Does Vault have to be fully implemented before PLM is implemented?
Problems with Data Migration?
Are Data Migration tools adequate inside PLM?
How did you get multi-sites to implement?
MOB F
Users
How many users do you have?
How many users compared to Vault users?
Did the number of Vault users decrease after PLM was implemented?
Licensing
Does the View-Only licensing work for you?
Difficulty of administration: Do we need a FTE?
Thoughts on network vs cloud?
Cost G
Hardware
Per Seat
Maintnace
Setup
Was implementation on time and in budget?
Have you proven out the cost savings?
Have you seen measurable efficiency improvements from using PLM?
Misc H
Why should I provide a new tool if my people do not use the tools they currently have?
Ability to spawn new workflows from existing workflows
Fully configurable workflows
Ability to interface with other systems (through middleware)
Ability to spawn new workflows from other systems (through middleware)
EBOM to MBOM conversion
This is better for a custom part manufacturer, not a standard line manufacturer such as a soft drink company

# Sample PLM Needs / Wants List

Integrated Lifecycle Management System Coverage

| | Functional Requirement | PLM | Matrix | Univeem | SAP |
|---|---|---|---|---|---|
| **1.** | **Equipment Features** | | | | |
| 1 | Detailed, easily accessible and modifiable Equipment Hierarchy via an intuitive interface | X | | | |
| 2 | Ability to link and search via numerous types of information related to an equipment # (stock/non stock items, criticality, where used, cost center etc…) | X | X | | |
| **2.** | **Stores / Parts Management Features** | | | | |
| 1 | Standardize store item creation that allows searchablity by several criteria (Drawing #, Description, Equipment # used on, etc) | X | | | |
| 2 | Repairable Item Work Orders to manage repairable parts | X | | | |
| 3 | Vault Change Management activity triggers stores review activities. If a revision is made to a drawing, it will notify the stores manager to verify the part they have in stores is still usable and not obsolete now | X | | | |
| 4 | Standardize and consolidate barcode label management in CMMS (manage inventory, location, etc…) | X | | | |
| 5 | Nonstock item reference #'s are assigned automatically (manage locally) | X | | | |
| 6 | Multi-store management (multiple plants, as well as main stores + auxiliary locations within a facility) | X | | | |
| 7 | Parts issued to WO's that are not currently listed on the BOM associated to the equipment # will ask if it should be added. | X | | | |
| 8 | Warning when a requisition is entered for a part(s) that already has another requisition for it in the system being processed | X | | | |
| 9 | From Work Order, all users should be able to enter requisitions and receive status change notifications. | X | | | |
| 10 | Ability to view PO's in the frontend interface screen for viewing | X | | | |
| **3.** | **Work Order Features (General)** | | | | |
| 1 | Multiple classifications for Work Order types including RTM interaction | X | | | |
| 2 | Work Order routing and approval process specific to WO classification | X | | | |
| 3 | Defer to PM or Shutdown through one click | X | | | |
| 4 | Default views and parameters specific to users (Engineer, Maintenance Technician, Planner etc…) | X | X | | |
| 5 | Mandatory fields to populate with drop down menus when creating new WO's | X | | | |
| 6 | Error correction capabilities (with approval process) for WO's after the WO has been completed | X | | | |
| 7 | Notification sent out when WO exceeds estimated repair time so schedules can be adjusted accordingly | X | | | |
| 8 | Ability for all plant personnel (operators, staff, maintenance, etc…) to easily enter a demand for a maintenance job | X | | | |
| 9 | Ability to link multiple documents and file types to a WO from an external database (drawings, LOTO, procedures, etc…) | X | X | | |
| **4.** | **Preventative / Predictive Maintenance Specific Features** | | | | |
| 1 | Self generating Work Orders based on set frequency or counter (Ability to create manually as well if needed) | X | X | | |
| 2 | Auto initiate lesson request to manager if failure control workflow indicates a training weakness | X | | | |
| 3 | Ability to create PM's in a task based format vs. machine based when needed | X | | | |
| 4 | Ability to create maintenance route for multiple equipment inspections | X | | | |
| 5 | Ability to enter and/or receive uploadable data from vibration, thermal imaging, oil analysis, ultrasound and motor testing reports. | X | | | |
| 6 | PdM trends displayable in the PdM Work Order so technician can immediately see negative trends and notify supervisor | X | | | |
| **5.** | **Emergency Maintenance Specific Features** | | | | |
| 1 | When Work Order is created, technician is prompted with questions following the Failure Control Workflow | X | | | |
| 2 | Planners / Supervisors are prompted to answer questions based on the Failure Control Workflow input by the technicians | X | | | |
| 3 | When parts are issued to an Emergency WO, BOM correlation triggers horizontal inspection to similar equipment | X | | | |
| 4 | A list of historic or repetitive failure causes and adjustments are displayed to improve troubleshooting efficiency | X | | | |
| 5 | If "follow-up needed" is indicated when closing WO, system will recommend opportunities based on populated WO fields and future planned activity | X | | | |
| **6.** | **Work Order Monitoring & Follow-up** | | | | |
| 1 | Quick categorized status monitoring of all open Work Orders (ready to work, waiting on parts, scheduled, etc…) | X | X | | |
| 2 | Items that need follow-up (Kaizen, PM modification, etc…) after being prompted through the Failure Control workflow are tracked in WO with responsible person and due date. Open follow-up item WO's are trackable | X | | | |
| 3 | Track partial PM's & cancellations | X | | | |
| 4 | Kaizen needs trigger change request in Vault and PLM | X | | | |
| **7.** | **Maintenance Planning / Scheduling** | | | | |
| 1 | Extensive Scheduling Tool with filtering and simple adjustment capabilities. Scheduled work will track parts and manpower costs of each WO | X | X | | |
| 2 | Obsolescence reviews triggered from obsolescence field in SAP Plan data | X | | | |
| 3 | Ability to easily change the date of any planned WO's in a planned shutdown if the shutdown is postponed (modify a batch of WO's all at once) | X | X | | |
| 4 | If the WO is postponed it will schedule the next auto-generated WO per the inspection standard periodicity. | X | | | |
| 5 | Ability to generate detailed and customizable reports. (shift turnover report, WO's that need follow-up, WO schedule for each technician, etc…) | X | X | | |
| **8.** | **Mobile Solution Interface** | | | | |
| 1 | Review, Approve, Reject any BAMM promotion or retained task specific documentation from mobile device | X | X | | |
| 2 | Features and functions optimized for accessibility via multiple platforms | X | | | |
| 3 | Ability to take photos and edit them (insert arrows, circles, etc…) with device and link them to WO's | X | | | |
| 4 | Barcode processing from Mobile Device | X | | | |
| **9.** | **Reporting & Searching Capabilities** | | | | |
| 1 | Extensive Searching ability - able to create custom queries easily | X | X | | |
| 2 | Ability to have reports automatically generate on set frequencies as well as custom report development | X | X | | |
| 3 | Custom Maintenance and Engineering Dashboards (Down Now, A Calls, AB calls, AB DT, Total calls, Cost, schedule, resource allocations etc…) | X | X | | |
| 4 | Change order rollout status | X | | | |
| **10.** | **General Interface Aesthetics & Features** | | | | |
| 1 | Layout, color scheme, style etc.. decided by project group | X | X | | |
| 2 | Simplified user interface that enables full utilization of the efficiencies afforded through the SAP Plant Maintenance platform | X | X | | |
| 3 | All BAMM activity linked and traceable to user's domain login name | X | | | |
| **11.** | **Lifecycle Workflows** | | | | |
| 1 | Standardized new Equipment/Equipment Modification workflows and tasks | X | | | |
| 2 | Appropriate system connections to enable efficient participation | X | | | |
| 3 | Gated and automatic system triggered activity to improve process efficiency | X | | | |
| 4 | Forms, Documents and records standardized and properly archived by the system | X | | | |
| 5 | Workflow in direct alignment with Engineering Step Control and Initial Run control | X | | | |
| **12.** | **Service and Support** | | | | |
| 1 | In house Programmers | | | | |
| 2 | Bridgestone Staff to handle support calls | | | | |
| 3 | Customizable / Configurable | | | | |
| 4 | Dedicated support desk for end users | | | | |
| 5 | Training available in all languages | | | | |
| 6 | Dedicated local Servers | | | | |

**X- Integrated System Covered** **O- Not Integrated System Covered**

## Applying an ROI to PLM360

After you know for sure what you want and what your pain points are you know need to calculate the ROI. I have been doing ROIs for most of my career and most revolve around CAD and Engineering software. I have to say PLM360 was one of the most difficult to pin down an ROI.

We broke ours down into the four main areas we want to address with PLM360: Maintenance Labor, Repair parts, Engineering Labor and retiring other software's. The parts and softwares were the easy numbers; we knew exactly how many parts we buy and how many we use. So anything outside of that is considered waste. Next we know the other softwares and the maintenance cost associated to those. The labor is the hard part as it is a cost avoidance not a cost savings. We spent time analyzing work orders that lasted longer than the standard repair. We also spent time talking to the techs gathering anecdotal information. We then asked what was a reasonable number for savings (for the sample it would be 5%-10%) then we cut it in half. This creates a very conservative number so it is less likely people will question it. That is one way we calculated savings.

Most of the savings in the ROI are very subjective. My advice is to make sure that you go conservative on the numbers. Also ensure you have narratives of your savings stories to back you up. Autodesk has several very good people to help you work on your ROI. However they will never know your business as well as you know it. You have to be able to see the potential savings and identify the areas to have Autodesk help you with it.

**Panel:**

- How did you calculate your ROI?
- How much was Tangible vs Non Tangible?
- It is not a one size fits all ROI

# Sample PLM ROI

| | I. Maintenance Labor Costs | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| 1. | Time wasted by personnel looking for spare equipment parts: | 3% | 1.5% | 0.75% |
| 2. | Time spent looking for inormation about a work order: | 3% | 1.5% | 0.75% |
| 3. | Time wasted by starting wrong priority work order: | 1% | 0.5% | 0.25% |
| 4. | Time wasted by equipment not being ready to work on: | 2% | 1.0% | 0.50% |
| 5. | Total Wasted Time: | 9.0% | 4.5% | 2.25% |
| 6. | Total number of craftsmen: | 1250 | 1228 | 1219 |
| 7. | Total number of hours worked by craftsmen in one year, hrs: | 2,600,000 | 2,553,200 | 2,535,966 |
| 8. | Total number of "wasted" hours for craftsmen in one year, hrs: | 234,000 | 114,894 | 57,059 |
| 9. | Average labor rate per hour, including benefits for a craftsman, $/hr: | $ 40.00 | $ 40.00 | $ 40.00 |
| 10. | Potential Savings: | $ 9,360,000 | $ 4,595,760 | $ 2,282,369 |
| 11. | Percentage of Potential Savings obtainable: | 20% | 15% | 15% |
| 12. | Total Savings: | $ 1,872,000 | $ 689,364 | $ 342,355 |
| | **II. Maintenance Material Costs** | **Year 1** | **Year 2** | **Year 3** |
| 13. | Total dollar value of maintenance spares purchased per year: | $ 8,000,000 | $ 8,000,000 | $ 8,000,000 |
| 14. | % of time spares are already in stores when others are purchased: | 5% | 3.0% | 1.0% |
| 15. | Savings total (cost avoidance): | $ 400,000 | $ 240,000 | $ 80,000 |
| 16. | Estimated total inventory valuation: | $ 24,000,000 | $ 23,280,000 | $ 23,047,200 |
| 17. | Estimated inventory reduction: | 3% | 1.0% | 1.0% |
| 18. | Estimated one-time inventory reduction: | $ 720,000 | $ 232,800 | $ 230,472 |
| 19. | Property Tax savings on one time reduction: | $ 216,000 | $ 69,840 | $ 69,142 |
| 20. | Total savings: | $ 1,336,000 | $ 542,640 | $ 379,614 |
| | **III. Avoided Cost of Other Programs** | **Year 1** | **Year 2** | **Year 3** |
| 21. | Plant 1 | $ 150,000 | $ 22,500 | $ 22,500 |
| 22. | Plant 2 | $ 290,000 | $ 43,500 | $ 43,500 |
| 23. | Plant 3 | $ 85,000 | $ 12,750 | $ 12,750 |
| 24. | Plant 4 | $ 270,000 | $ 40,500 | $ 40,500 |
| 25. | Plant 5 | $ 10,000 | $ 10,000 | $ 10,000 |
| 26. | Plant 6 | $ 325,000 | $ 48,750 | $ 48,750 |
| 27. | Plant 7 | $ 200,000 | $ 30,000 | $ 30,000 |
| 28. | Plant 8 | $ 240,000 | $ 36,000 | $ 36,000 |
| 29. | Plant 9 | $ 270,000 | $ 40,500 | $ 40,500 |
| 30. | Total: | $ 1,840,000 | $ 284,500 | $ 284,500 |
| | **IV. Engineering Labor Costs** | **Year 1** | **Year 2** | **Year 3** |
| 31. | Increased efficiency in engineering programs: | 7% | | |
| 32. | Total number of engineering staff: | 550 | | |
| 33. | Total number of hours worked by engineers in one year, hrs: | 1,144,000 | | |
| 34. | Total number of "wasted" hours worked for engineers in one year, hrs: | 80,080 | | |
| 35. | Average labor rate per hour, including benefits for an engineer, $/hr: | $ 50.00 | | |
| 36. | Potential Savings: | $ 4,004,000 | | |
| 37. | Percentage of Potential Savings obtainable: | 20% | | |
| 38. | Total: | $ 800,800 | $ - | $ - |
| | **V. Total Savings and ROI** | **Year 1** | **Year 2** | **Year 3** |
| 39. | Total from Section I: | $ 1,872,000 | $ 689,364 | $ 342,355 |
| 40. | Total from Section II: | $ 1,336,000 | $ 542,640 | $ 379,614 |
| 41. | Total from Section III: | $ 1,840,000 | $ 284,500 | $ 284,500 |
| 42. | Total from Section IV: | $ 800,800 | $ - | $ - |
| 43. | **Total savings possible from BAMM:** | $ 5,848,800 | $ 1,516,504 | $ 1,006,469 |
| 44. | Total projected price for improvement program: | $ 7,995,000 | | |
| 45. | **Return on Investment:** | 1.367 | | |

The notes in these boxes give a reccomendation on the efficiencies that could be seen based on current state.

Ex: Line # 1 shoes that is you already have a Computerized Inventory and Manual Work Order System, you should see a 0-5% increase in efficiency (we entered 3% for the calculation)

The numbers were based on discussion amond Bridgestone teammates, and industry studies(including the pdf document supplied to you with this excel sheet "roi_for_maintenance_improvement_projects")

Orange Boxes are manually entered values

## Pitfalls to watch out for when presenting this to management

1. The number one issue I have had with my management was it was too good to be true. We have a company form that we are required to put a ROI into our template. We broke the form due to the ROI being too fast. The formulas could not handle that large of a payback that quickly. Remember most managers learn early in their career if it is too good to be true it probably is.

2. Next they want to know when are they going to see the money, or when are they going to see the ROI? This is a hard question to answer if you have never implemented a PLM software at your company or if you implemented one that you are replacing. Remember once you get done spending money on development, implementation, testing, training and the like, there will be a ramp up period. So if you have 12 months to get everything done it will be another 12-18 months before you see full savings.

3. What is your 5 or 10-year cost of ownership going to be? If you are doing this as a project you have the initial dev costs, but remember you have training and software costs every year after that. Then any kind of add on you may have such as tablets or smart phones that you don't already have.

4. Can do attitude! If you ask a sales guy in most any field if they can do something, they will more than likely say yes they can. I have found I am the same way with PLM, if management asks can PLM handle this or that the answer is usually yes it can. The problem with that is you can bite off more than you can chew. I am to the point where I am actually marking off things that PLM can do but I am going to say are outside of any future plans. If not it will grow into this huge unmanageable beast of a project that will never start due to its size.

5. How much of this is the "Cool" Factor? As a technology advantages for my company it is my job to find new technologies. But how do I prove that this is not just for my resume or the coolness that is the cloud. It is almost like you have to lead them to water and let them see the cool tools before suggesting doing them.

**Panel:**

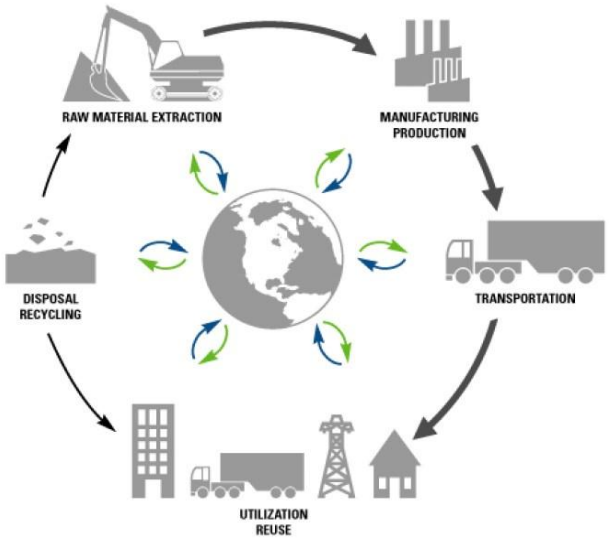
- Top 5 Gotcha's to watch out for
- Top 5 questions from Management that you did not expect
- Figuring out needs vs. wants

## Teaching people to think differently about Software vs. the Cloud

PLM is not software or Servers or the Cloud, but Product/Program Lifecycle Management.

In fact Wikipedia says:

> *In industry, **product lifecycle management** (**PLM**) is the process of managing the entire lifecycle of a product from inception, through engineering design and manufacture, to service and disposal of manufactured products. PLM integrates people, data, processes and business systems and provides a product information backbone for companies and their extended enterprise.*




I actually don't like the name PLM360 because it tends to confuse people. It blurs the line between; what it a software product and what is a process. Once you understand what is PLM and what is PLM software then you move onto the difference between terrestrial software and cloud software.

Next we have to get into security, in a small company this can be convincing an owner that PLM360is a safe platform. In an enterprise, it is a matter of dealing with Security Architects, Committees, out of date standards and even evil overloads. We were able to get around this by having the Vault store all of our IP on our servers. Next we use Windows Authentication to log into our PLM client. This gives us the two-layer auth that our IT requires.

**Panel:**

- What is your definition of PLM?
- To me you will never win the Cloud vs. local security battle, work around it, don't fight it.
- What are you allowed to do vs. what can you not do in the cloud.

## In conclusion

You are not alone! Obviously, you know that being here at AU surrounded by other PLM users and future users. But you have several different resources in your reseller, Autodesk, Peer groups, forms, etc. Ask for help you will need it. Autodesk has one of the simplest PLM softwares to use in PLM360, but that does not mean implementing PLM in your company can be easy. You will have many pitfalls to watch out for.

## Notes:

## Notes: