

Process to Excellence

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Premium Partners:



Microsoft

Definitions

- **PROCESS**

- A repeatable course of action intended to achieve a desired result ...

- **TO**

- giving direction towards ...

- **EXCELLENCE**

- top performance, distinction, superiority.

What does this mean?

A “process” is similar to a chocolate chip cookie recipe:

Ingredients

2 1/2 (1 ounce) squares unsweetened chocolate
1/2 cup butter
2 cups all-purpose flour
1/2 teaspoon baking soda
1 teaspoon baking powder
1/4 teaspoon salt
1 1/4 cups white sugar
2 eggs
1 teaspoon vanilla extract
2/3 cup sour cream
2 cups semisweet chocolate chips

Directions

oven

microwave

double boiler,

baking sheet

wire rack



What are the costs of PLM ?

- PLM investment is a mix of:

- Hardware
- Software

} Tools → One time cost

- Process
- Training
- Support

} Education → Ongoing costs

- Ongoing costs, *Cost of ownership*, will outweigh the cost of purchase in the long term!
 - These need to be managed effectively
- How we use the tools will influence operating costs throughout the life of the software/hardware
- There is an expected *benefit* from PLM investments.

PLM Tools - Software

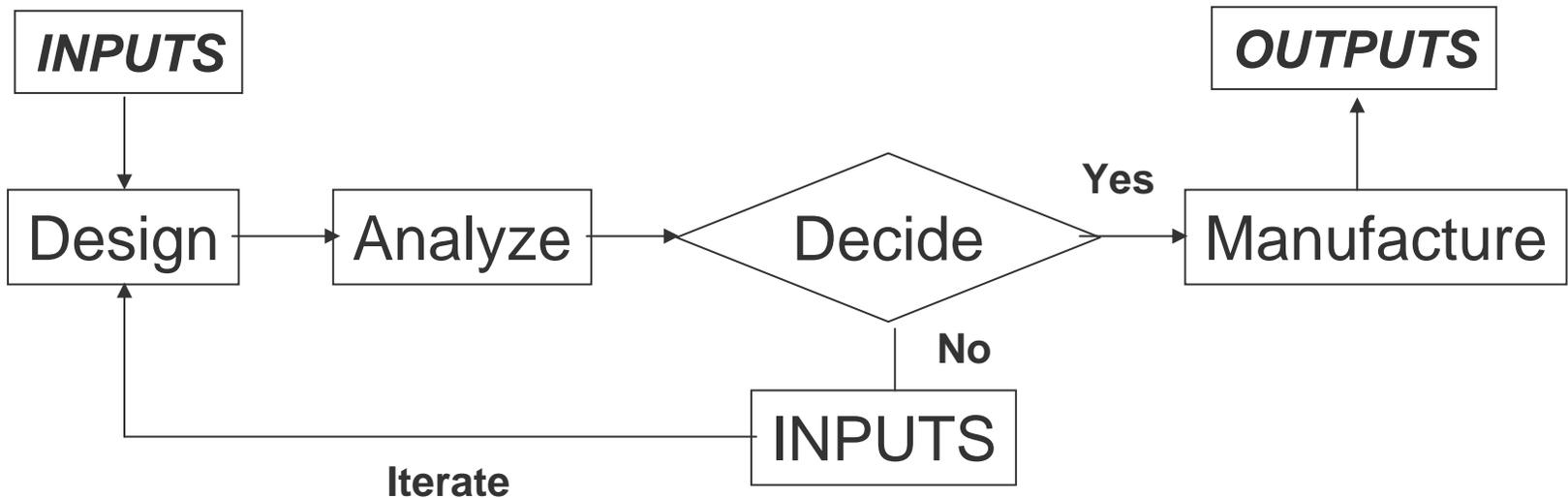
- At PLM World we can see software “*tools*” supplied by UGS and their partners, such as tools for ...
 - Product Data Management
 - Local Data Management
 - CAD/CAM
 - Analysis / Motion
 - Simulation
 - Product Visualization
 - Collaboration
 - ...and many many more.
- PLM applications are generic in nature
 - They can be configured for most every business.
- Companies “pick and choose” from available tools to suit business needs or project requirements.

Cost of Ownership Issues

- *How we use the tools will effectively control the of the Cost of Ownership through ...*
 - Process
 - Designed around the functionality of the tools.
 - Integrated into system (embedded)
 - Repeatable and Quality results
 - Ease of use
 - Education and Training
 - Representative of your business
 - Support
 - During transition
 - Administration
 - General User support

The Design Process

- Any process will have *INPUTS* and *OUTPUTS*
- A typical Design Process is illustrated below.



- Automating this process model is ideal.
 - Let the tools do the work (integrated process).

Process Design Considerations

- Major investments are made in modern PLM tools.
 - We put a lot of energy deciding which tools to use.
 - We need to concentrate on how the tools will be used.
- To maximize the benefits using these new tools we need to ...
 - understand our current and future business requirements
 - How can we benefit from using PLM?
 - examine the current processes
 - How do we work today?
 - How can we work efficiently with PLM tools tomorrow?
 - develop the PLM tools through
 - Process development and system integration
 - educate users and provide continued support.
- Effective design of *processes* will maximize business benefits and lower the *cost of ownership*.

Process Design Teams

- A couple of known truths:
 - We know what we know very well.
 - We don't know what we don't know.
- So who is best suited for process design ???
 - Consultants ???
 - Don't understand our business requirements
 - Current employees ???
 - Don't have a deep understanding of the software
 - Tend to stick to what they know best (Legacy Thinking)
- A mix of skills and expertise are required.
 - Teams may include program management, expert technical consultants, company technical experts, process designers.
- Teams should think Out of the Box
 - Be innovative and creative.

Re-defining the Process

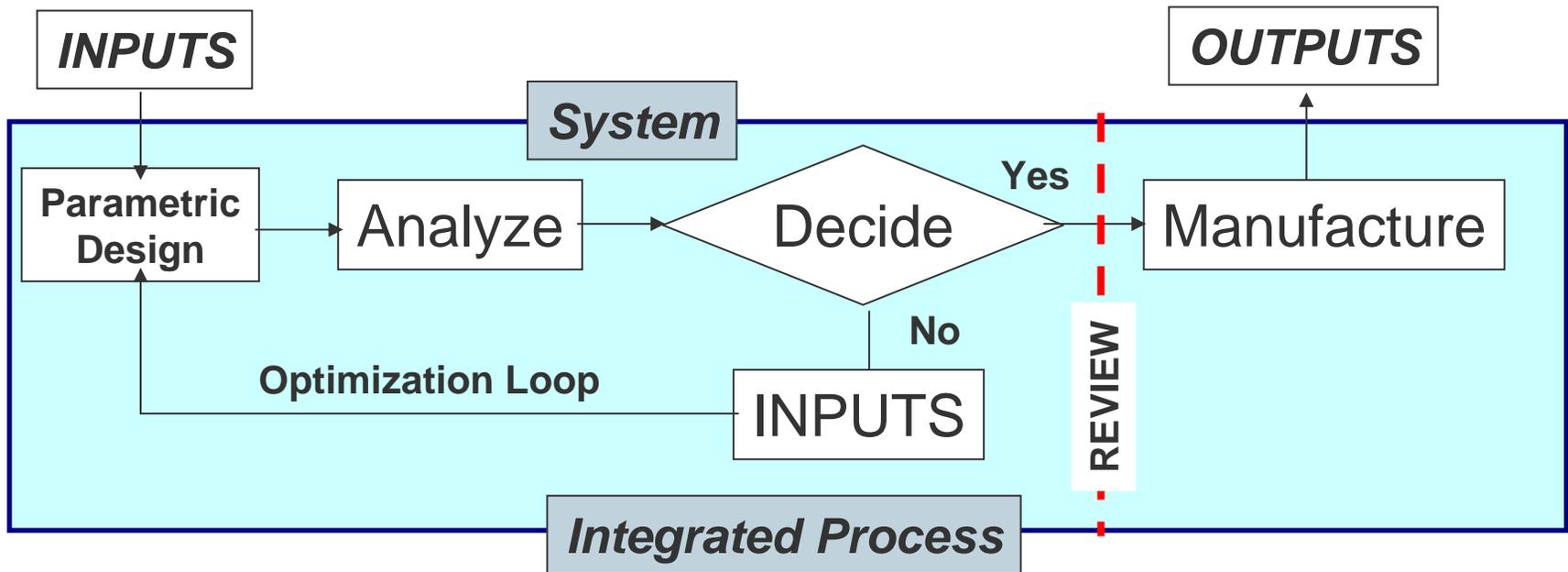
- Question existing ways of working
 - What is the existing process?
 - Do we still need the existing process?
 - Is there an element in the latest PLM toolset that can streamline this process; getting the most out of the tools?
 - How can we integrate the process into the system?
 - Do we have *authority* to change the process?
- New processes may be needed that are designed to take full advantage of the capabilities in the new PLM systems
 - Processes should be designed around how the tools can work best to produce repeatable results to a desired quality.
 - This will provide the mechanism to deliver ongoing benefits

Getting the most out of the process

- Can the process be *integrated* into the tools?
 - By system definition, design rules, workflow process?
 - Can Knowledge be embedded in the product definition?
- How can we ensure the process is repeatable?
 - Can, and do, we measure the benefits?
- How can we strive for continual improvement.
 - New tools on the market every year
 - Upgrades
 - Advanced education

The Ideal Process

- Product knowledge is “embedded” into system



- Product Specifications are fed in as *INPUTS*
- Design Rules* embedded into the system *parametrically* driven
- Application manages iterative loop with Integrated Processes
- OUTPUTS based on Product Specification and Design Rules
 - Knowledge driven – Repeatable - Quality Results

Embedded Processes

- Embedded processes can be illustrated with a modern Bread Making Machine.
 - Ingredients
 - Eggs, flour, baking soda, water, etc.
 - Tools
 - Bread Making Machine
 - Directions-
 - Put ingredients into machine and turn on.
- The tool has embedded processes that mix the ingredients, and cook the bread.
 - Based on design rules
- End to End process
 - Repeatable to a consistent quality

Legacy Ways of Working

- Existing legacy ways of working will not get the most out of a modern PLM system
 - But consideration is needed for business continuity.
- We should avoid using the new PLM tools exactly the way we used our old legacy systems.
 - CAD systems can do more than make models
 - Existing “Legacy” working practices need to be thoroughly examined
- The cost of change may be high but the cost of standing still is higher!
 - Our competitors are using the same tools, so it is HOW we use the tools that set us apart

Culture of Change

- Question:
 - What do we have that no other company has?
 - The answer is “Our people”
- Cultural changes are often neglected
 - Most people are not comfortable with change and may resist working differently
- Any IT solution alone is limited unless people *use* the tools.
 - We may need to foster a climate of change within our company.
- How we manage change has a direct effect on success
 - Driven from Top Down *and* Bottom Up
- There needs to be a *willingness* to change.
 - People need to understand why change is necessary.
- Communication is key to gaining acceptance to change.
 - Your users will ultimately deliver your benefits.

Education

- We may need to develop new expert skills within our organization.
 - System administration
 - Super-user
 - General or speciality training
 - System support
- We may need to work differently
 - New roles or responsibilities
- Include Process
 - How will new processes be communicated?
 - Training / Mentor
 - User Groups
 - Peer to peer knowledge transfer
 - How can users buy-into the process changes?
- Communicate the benefits to the users.

Integrated Training Approach

- In my experience students retain more of the training if they can relate to the training material.
 - Company examples used for exercises.
 - Role-base training.
- This implies a custom approach to training may be effective.
- Processes need to be embedded into training programs
 - So that users not only understand the tools (how to push the buttons), but also how they are expected to do their job.
 - Trainer must be fully aware of the specific company processes.
- This will shorten the learning curve for users and deliver benefits sooner.
- By the end of training users should know “how” to work differently not just learn what the buttons do.

Ineffective Training Costs \$\$\$

Investment in training is an investment in people!

- Ineffective training should be avoided
 - Formal training provided by software experts –
 - Button Pushing
 - Users train themselves (peer to peer)
 - Staff who learned software from another company
- Where will users learn HOW to do their job?
- No control over the results
 - Poor quality, duplication
 - Impact to schedule, quality
- *Ineffective training is an recurring cost that negatively impacts cost of ownership.*

Back to the cookies?

Our products are ...

- what we make.
- Ingredients are ...
 - what we make it from.
- Tools are ...
 - what we make it with.
- Processes ...
 - how we make it
- These are all essential to making a quality product.



Process to Excellence

- So what is the Process to Excellence?
 - *A repeatable course of action intended to achieve a desired result giving direction towards top performance, distinction, superiority.*
- How could we achieve this?
 - Investing in modern PLM applications
 - Define processes that get the most out of the tools
 - Integrating the processes into the system
 - Investing in people
 - Educate users on process
 - Develop essential skills
- What is the goal ?
 - Delivering benefits to the company