

HOW WRENCH CAN BENEFIT YOUR ORGANIZATION

4 examples of WRENCH functionality

1) THE PRODUCT DEVELOPMENT PROCESS:

Background: Every company has a defined product development process, built around the products it designs/manufacturers. This process is typically called APQP process and has the following steps:

Customer enquiry → Component information from customer → Technical feasibility → Cost estimation → Proposal to customer → Feedback from customer → Customer Order → Component modeling 2d/3d → Complete APQP product development process (Process flow diagram, PFMEA, Control Plan, Quality plan) → Tool \ Machine design → Fixtures and gauges design → Prototype submission to customer → Voice of customer → Capture and incorporate changes to proto → Pre-launch submission → Mass production → Post product changes → voice of customer → customer acceptance.

Processes are defined by the organization to ensure that the product meets all prescribed quality standards and requirements. Members of cross-functional product development teams execute these processes.

Current methodology: Processes are followed manually, with records of the process maintained as documents for evidence.

Challenges: The Organization cannot be 100% sure that each process is properly adhered to by every single members of the cross-functional team, especially when under pressure of delivery. This results in quality problems. Ideally, all output needs to be reviewed by senior management to prevent errors. Also, the documentation of the process is done mainly to show the Auditor, rather than for the customer.

BUSINESS IMPACT

- Quality problem in the product delivered to the customer
- Dissatisfied customers, loss or repeat orders.
- Senior mgt. wastes time in manually checking output

HOW WRENCH NPD CAN HELP

- Each process and its outputs can be defined in WRENCH-NPD, based on the company's typical workflow. WRENCH then makes these processes the default way of working, thus ensuring that they are strictly adhered to by all personnel. However, if so required, WRENCH also offers flexibility for necessary deviations in specific tasks which can be controlled by senior personnel.
- Once templates of all input and output formats (defined by either company or customer) are implemented in WRENCH, data processing becomes fully automated and hence error-free.
- For ease of use, WRENCH allows document owners to create, edit, review and approve their files in the original application environment – for e.g, an Excel spreadsheet can be opened and viewed in MS Excel within the WRENCH working environment itself.

BENEFITS

- Quality process and output as per company or customer format is ensured without deviation.
- Senior management can focus on customer and business development.
- Higher customer value because of the usage of the system.
- Differentiator against competition.

2) PRODUCT DEVELOPMENT PROCESS MONITORING:

Background: Each task in the product development process must be executed as per the schedule to meet the final delivery schedule. If any task gets delayed the final schedule will get affected. When multiple New product projects are going on it becomes difficult for team members to give priority to all the task, plus capturing the status of the task at any point in time becomes a challenge for the Project manager. Due to this, projects get delayed or a lot of fire fighting is done.

Current methodology: Although schedules have been defined in a Project management software, the status of the task is not updated by the respective resources - as this seen as extra work by the employees. Review meeting are therefore conducted to find out the status of each task.

Challenges: Managers find it very difficult to ensure timely completion of tasks. They cannot easily keep track of the schedule – or follow up on each task allocated to each member in the cross functional team.

During reviews, a 'reactive' plan (born of necessity) is quickly made to address the delays, which often becomes practically impossible to implement. Final result - delay of the project.

Resource utilization is not efficient. Some resources get over-loaded, and therefore productivity is affected, while others are under-utilized. This leads to very high pressure working environment which takes it toll on resources, management and final delivery.

<p>BUSINESS IMPACT</p> <ul style="list-style-type: none"> • Cannot commit to timely delivery. • Dissatisfied Customers. • Unhappy employees. • Inefficient use of expensive resources. 	<p>HOW WRENCH NPD CAN HELP</p> <ul style="list-style-type: none"> • WRENCH provides each user who is assigned a task with a To-Do-List. Thus, even the person is working on multiple tasks in multiple projects, he cannot forget, ignore or bypass any of the prescribed processes, thus ensuring that quality standards are met. • For managers, WRENCH-NPD offers proactive notification and escalation through email in-case of possible delay Even future or potential delays are calculated and foreseen and the manager in charge is alerted well in advance and can take appropriate preventive action, thus avoiding last minute firefighting. • WRENCH-NPD provides anytime online project status reports. This ensures that all project and senior managers have immediate access to latest information about the project. • All WRENCH users work directly on the system, so as and when work is accomplished, task status is automatically updated online, without any extra effort from the user. 	<p>BENEFITS</p> <ul style="list-style-type: none"> • Delays can be prevented and anticipated, thus ensuring delivery on time. • Customers are happy to get accurate timely reports and communication. • Employees can now focus on productive work and not get bogged down in routine tasks like updating status reports etc. • Differentiator against competition.
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3) REUSABILITY OF INFORMATION

Background: During the product development process, various types of data are handled by the cross-functional team. This data includes customer component drawings, technical feasibility documents, cost estimations, design (CAD) drawings, 3D models, APQP documents, process documents, tooling drawings, Bill of materials etc. All this gets modified and updated very frequently during the product development process.

Current methodology: Various kinds of software applications are used to create the different types of data, which is then usually stored by users in their local or user-specific locations. Review and approval of these data is done manually i.e. using hard copy, even though the documents themselves are created and stored electronically.

Challenges:

- High level of dependency on the resource that creates the data when it comes to locating and retrieval.
- No facility to ensure that the data accessed is the latest without confirming manually with the document creator.
- Very low reusability of information due to difficulty in retrieving information.
- Very high level of dependency on human agency for information.

BUSINESS IMPACT

- Delay in product development cycle time.
- Loss of time and cost due to possible error in manufacturing products by using wrong revision of data.
- Unable to reduce product development due to lower reusability of information and repetition of past mistakes.
- Knowledge developed during development is lost when the employee involved in product development quits the organization.

HOW WRENCH NPD CAN HELP

- Users can easily create, review and approve all data handled during the product development process online.
- WRENCH capture and stores all data systematically i.e. each document is stored with all its relationship and linkages as well as the data itself. Thus, users can search and retrieve a document through its references or relationships, and not just the file name or description.
- Data is captured automatically with minimum user entry.
- Users are assured access to the latest revision of the data only, and can view and print them without using the application. WRENCH-NPD automatically puts a watermark as "WORK-IN-PROGRESS" or "RELEASED" on the data printed with time and date.
- WRENCH-NPD proactively prompts for the nearest parts, Tools, Bill of materials, process, document, drawing etc., so that reusability is maximized. Past problems and solutions are also easily retrievable.

BENEFITS

- Greatly reduced product development time due to easy access to past data
- No need to reinvent the wheel, so users time is not wasted.
- Zero possibility of error due to use of wrong revision or data.
- Reduced possibility of repetition of past mistakes.
- A people-independent system which reduces the risk on company due to employee leaving the organization.
- A system for continuous up gradation of skills and intellectual capital which contribute to the organization's knowledge.

4) INFORMATION SECURITY

Background: In new product development, large numbers of drawings, documents, manufacturing data, quality data, tooling data etc., are produced. These documents are the knowledge base of the product being developed. Most of them are created and stored electronically, but processed (retrieved, reviewed, updated, shared etc.) manually. All members of the cross-functional team are provided access to store and copy files on the central server.

Current methodology: Any member of the cross-functional team who has access to the server can copy files from the server to the local machine and then take the data out by copying on a CD or on pen drive without the knowledge of the administrator. A user can also change the data of the approved files if given updating access.

Challenges: Control on document access is required based on user name, department, designation, stage of development, status of the data etc.,

BUSINESS IMPACT	HOW WRENCH NPD CAN HELP	BENEFITS
<ul style="list-style-type: none"> • Engineering knowledge getting to the hands of the competition can be disastrous. • New competitors can be created in case of security leaks. 	<ul style="list-style-type: none"> • All data is encrypted and stored in the server with no access possible directly by the user through the network other than logging in through WRENCH, which requires a password. • Data is encrypted and transacted over a secure network and, if required, can be encrypted using digital signatures for even higher security. • Security settings can be made to control access based on user name, user group or department or user profile. • Security settings can be defined based on document category and type. • Security of access can be controlled based on the stages of the workflow of the data. • WRENCH can specify about 10 different setting for access of the data such as View, view and print, copy, send by email, edit, move etc., • All transaction such as view, print, copy or access is recorded in the database and report can be generated for any review. 	<ul style="list-style-type: none"> • Total security for intellectual property of the company. • Prevent any possibility of theft of IP. • Reports on access and print can be used as evidence as legal document. • Accountability in case of misuse, shoddy work etc.