



# Resource Utilization and Planning

## Our Client

A manufacturing company who cater to aerospace and defence related organizations.

## Why they needed us

In order to increase profits, they conducted a cost cutting investigation which had a lot of revelations. One issue was that their machines had a lot of idle time i.e. the machines were left powered on even when they were not working. This was done due to the long start up and shut down time for their machines.

In that regard, they wanted to optimize the process in order to minimise the idle time and get a real-time factory level view of the machines with details such as machine ID, its state (running, idle, off), duration of such state etc.

Another issue was, due to the nature of their customers they had to get authorization/ verification after every stage of the manufacturing process to proceed to the next step and different products took different time periods to get approval and failed approval meant they had to redo the product. Hence, they were not able to accurately give deadlines for product delivery. This lead to missing deadlines and paying penalty. In this regard, they wanted to estimate the time to completion for any new product, factoring in the time for approval and for the finished products they wanted to know the list of operators who worked on that product.

## What we did

We built a Resource Utilisation and Planning Program, which consisted of an ERP system integrated with KOMPASS our Data Analytics Engine and KALEIDOSCOPE our data visualisation tool.

We used current sensors to detect and identify the state of the machines as running, idle or off and biometric sensors to authenticate the machine operators at the time of power on and powering down of machine and shift change.

When the customer and product details for any new product is entered into the program. The program gives a detailed view of the plan for completion of that product. Details such as

Raw Material A from Warehouse 1.A to Machine 1.1 at 8 AM on 3 rd Jan 20xx.

Machine 1.1 to finish the job by 3PM on 3 rd Jan 20xx.

The estimated wait time for approval for this type of job from this customer is 5 days.

The probability of denial of approval based on past history is 0.34

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Raw Material A from warehouse 1.A to Machine 1.1 at 8 AM on 11 th Jan 20xx for mass production.

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Estimated final delivery date for Product 1.2.3 to customer is 1 st March 20xx

Our client had the option to modify some information, example, they could change the estimated wait time for approval to 7 days and click "Add to Factory". Then, these tasks are added to factory plan.

If the wait time for approval were to later increase, a new estimated wait time for approval could be entered into the program and it re-plans accordingly.

There was also an option to enter the job detail, customer details and a deadline and the program gives a plan on how to meet that deadline and that too could be added to the factory plan.

The Resource Utilization and Planning Program also notified the appropriate personnel on when a particular machine had to be powered down and powered on, when the raw material had to move from the warehouse etc.

We built applications that offered product and machine visibility and control of appropriate levels to appropriate personnel, through the Resource Utilization and Planning Program. With the help of these applications an appropriate person would be able to get a real-time, factory level view of the state of machines, which includes information like, run time, idle time, the lot number, operator information and time for all the parts that were manufactured on that machine etc.

the state of different products which include information like stage of manufacturing currently in, state of approval, lot number, the operator information for all the operators who have worked on and who would be working on that product, estimated completion time of product etc.

Those applications ran on tablets with the floor managers, desktops with the machine operators, mobile and web environments for the factory manager to give appropriate visibility and control.

## How they benefited

Due to increased visibility of resource utilization for different kind of products they were able to make better quotes for tenders and get projects.

Due to better estimates of time to completion for different kind of products, they were able to give more accurate deadline to their customers and meet them, thereby avoiding penalty for missing deadlines.

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### About Redeem Systems

*Redeem Systems is a pure-play Engineering and Digital Services Company with focus on mission critical highly engineered + high availability systems. Our global presence spans Asia-Pacific, Middle-east, Europe and North-America.*

*Our focus verticals include – Tele-communications, Medical Electronics and Aerospace & Strategic Electronics.*

*Our Product Engineering competencies include Product Design and Development, Verification & Validation, Emerging Markets Strategy and Product Life-Cycle Extension through Value Analysis and Value Engineering*

*Our Digital competencies are focused on Industrial Internet-of-Things (IIoT), Engineering Big Data Analytics and Software Defined Networking (SDN)/ Network Functions Virtualization (NFV).*