

Yamaha Corporation

Company name: Yamaha Corporation
 Address: No. 1 No. 10 Nakazawa, Naka-ku Hamamatsu, Shizuoka city , Japan
 Founded: October 12 , 1897
 Capital: 28.5 billion yen (as of March 31, 2009)
 Business activities: musical instruments (pianos, electronic instruments, strings and percussion tubes equipment, educational instruments, audio equipment, soundproof rooms, music schools, English classes, music software, tuning),
 AV · IT projects (audio and telecommunications equipment), electronic components (semiconductors)
<http://www.yamaha.com/>



Through direct production progress feedback to the planning department lead times, WIP inventory and scheduling time were reduced by 30%

Since its foundation Yamaha has been known as a manufacturer of musical instruments and AV equipment. It has since expanded globally into other areas associated with sound and music. About one quarter of all instruments in the world are being made by Yamaha.

The Digital Instruments Division which implemented Asprova produces electronic musical instruments and professional audio equipments. In April 2008 they added á board-mounting process, which led to an even more diversified product portfolio and required complex processes. As a result a significant amount of time had to be spent on planning. Due to long lead times the stock levels tended to be higher than necessary.

Therefore the decision for Asprova was made aiming at a reduction in planning time and an effective production plan. We interviewed Mr. Kotake and Mr. Satoshi Miyata from the TPS department about the background & reasons for their choice and the effects of the project.

Implementation Goals

- Reduction of planning time and workload
- Reduction of production lead times
- Systematization of planning skills & know-how
- Prevention of overproduction
- Inventory reduction

Digital Instruments Division’s TOYOOKA plant produces electronic musical instruments and professional audio equipment. They added a board-mounting process to their production in April, 2008. Other project management tools were being used to plan the production, but due to high-mix low-volume production and complex production processes, it cost too much time to make a production plan. The plant had become too dependent on relying on the planners’ skills and expertise. Due to long lead times, stock levels were rising and creating waste. A Scheduler was considered as one mean to solve these problems. The decision for Asprova was taken in June 2009. After a 3 month trial period it was bought and usage started that December.

Reasons for choosing Asprova :

- Experience in connecting to SAP
- Another Yamaha branch has implemented Asprova in several of its plants in Japan and overseas.
- Other big companies also use Asprova
- “We received positive feedback from other Asprova users” said Mr. Kotake.



Asprova implementation effects

Work load can be checked quickly
 Optimal Order Sequences

Plan is being changed in time
 Stimulation of Communication

Sharing of process information

■ Asprova users



Yamaha Corporation
Digital Instruments Division
TPS office
Director Mr. Kodake (left)
Leader Mr. Miyata Satoshi (right)

On the basis of the hands-on training workshop, the users were able to manage the project very quickly

Yamaha uses SAP as their ERP. However Asprova also needs to incorporate data from outside of SAP's scope, especially as processes are being looked at in greater detail.

"We designed the system by trial and error, it cost us a lot of time because we entered hundreds of items' master data manually, and initially had a hard time adjusting dispatching rules." Mr. Miyata who was responsible for this project actively participated in the Asprova training. In July 2009, they started to evaluate Asprova with a trial version, started test-operation in November and went live in December. In total the project took five months until completion. "Once you learn the basics, you are able to operate it fairly smoothly. The perfect training system is one of the points that Asprova excelled in." (Mr. Miyata)

Designing operational procedures and visualizations according to shop floor needs, making sure that the transition is smooth

"Concerning the operational methods, the shop floor staff actively expressed their opinions. We made great effort to ensure shop floor acceptance of procedures and views. In regard to defective parts for instance, we gave the shop floor autonomy to decide if they produce an extra part individually or together with the next batch."

Other points that their feedback was incorporated in:

- Colors and layouts allow operators to grasp the situation immediately
- Using Asprova MES and DS, production progress is being collected and confirmed in real time

• Show free capacity, work results collection, etc.. to facilitate improvements.

• Comparison between plan and results to improve the accuracy of master data.

• Using a skill map for the inspection process, work is only being assigned to suitable resources.

Implementation effects and future development

At the end of each month work orders are being extracted from SAP by CSV and imported to Asprova to make the production plan for the next month. Previously 10 hours a week had to be spent on planning. Now it takes 30 minutes a day and work results can be reflected with greater accuracy. **Scheduling time, production lead times and WIP inventory have all been reduced by about 30%.**

By optimizing setup, machine downtime was reduced and work instructions on paper were completely eliminated.

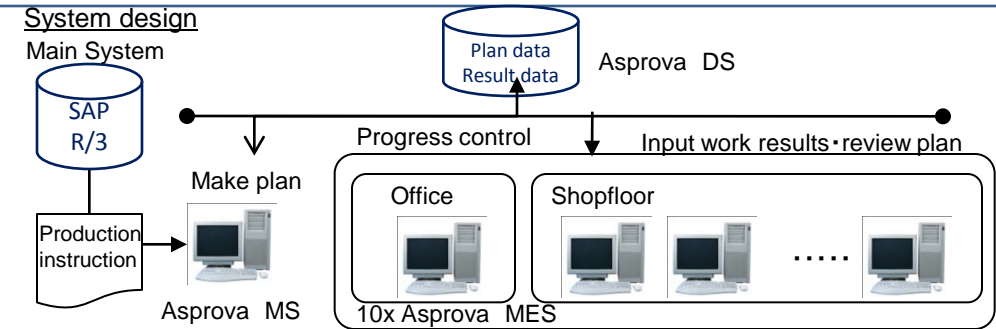
Reasons for seeing effects so soon were not only that project members are familiar with process constraints, but also our goal of finding ways to improve visualization. Not realizing full-automation at the initial stage was another important point.

They are planning to also use Asprova for the "on-demand printing" process in the future. Further goals are:

- Production results are to be used to automatically generate daily reports
- Operation start dates are to be exported to SAP to facilitate material provisions and to level the load, etc.

(Interview date: September 7th, 2010)

Product variety: 160 items/month
Processes per product : ~5
Processes in scheduling period : 12-13
Orders: about 500/month



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