



Case Studies



Factory Improvement Programme

Boosting Quality and Cutting Waste Systems Changes at Printing and Cultural Products Co.

The Printing and Cultural Products Company is a State Owned Enterprise (SOE) under the Ministry of Culture and Tourism, located in Hanoi, Vietnam. Established in 1996, the company employs in excess of 600 workers in its city centre factory. Its core business is printing and publishing a wide variety of newspapers, books and publicity materials.



Many of the issues faced by the enterprise are covered by the FIP modules. Management viewed participation in FIP as valuable support to attaining both environment and quality ISO accreditations. They saw FIP as providing simple but practical tools to meet the needs of specific topics. In addition to quality and productivity, the company was particularly interested in the workplace cooperation and workplace relations modules as communications – both upward and downward – were poor, working relationships were not good and there were often situations involving conflict and a lack of mutual understanding.

INITIAL SITUATION

Although printing and publishing is still a state monopoly, developments in the market and the increasingly sophisticated demands of local and international customers has put pressure on the company. Management recognises that they must not only invest in new technology but they must also ensure that their people and working practices allow

the firm to become more competitive in their business. The challenges they face in transforming from a typical state enterprise to a more dynamic and competitive business are significant.

The Printing and Cultural Products Company had, prior to joining FIP, already embarked upon organisational restructuring, production line restructuring, the introduction of new technology and establishing a quality management system (ISO 9001:2000) and an environmental management system (ISO 14001:2004).

An issue of significance in terms of quality was that the enterprise was experiencing high levels of end of line defects. However, there were no systems in place to track quality causes and effects so the company could not tell whether the problem was with the raw material (paper), the raw material storage, the ink, the equipment or the process.

The lack of evaluation of defects and their root cause meant that the company was shouldering the cost-burden of the defects. Having printed onto the paper it was impossible to request any form of compensation from the supplier for paper that was considered unacceptable quality and labour, energy and ink were all being wasted.

RECOMMENDATIONS BY THE FIP TEAM

The FIP experts recommended that the company develop and implement a system of identifying, monitoring, measuring and evaluating the root cause and type of problems that caused quality defects, with a view to understanding and reducing them.

The expert pointed out that it was important for the company to have a clear understanding of which aspect(s) of the production from raw material supply and storage to final printing were having an impact on the defect rate and what that impact was.

ACTIONS TAKEN BY FACTORY

The Factory Improvement Team discussed the issue with the quality group and used the problem solving tools (fishbone diagrams and Pareto charts) that they had learned from the training of FIP to identify and evaluate the root causes.

They designed a format for identifying and reporting the cause of defects. It was decided to implement this system on a trial basis on one line, a line currently being used for high value orders using high value paper.

The first step was to physically check the paper before it entered the production line – this is a critical step that had not been done before FIP. This enabled the company to determine whether it was the paper itself that was the root cause of defective output and whether or not it was supplied in that condition or whether storage had contributed to the problem.

It was also decided that the workers on the line would check for and evaluate defects throughout the production process, monitoring not only the defect and cause of the defect, but also exactly when during the production process the defect occurred. In this way they could obtain a clear understanding of the cause of each defect and would know how to rectify the problem that was causing each defect.

Two forms were designed for the workers and supervisors to complete, allowing defects to be registered, analysed, reported and, when necessary, presented to the paper supplier for a refund.

The system went live on the high value line in May

and measurement and analysis of each job for that month highlighted dramatic differences in defect rates ranging from around 2% to as much as 50%. What was very obvious from the analysis of the cause of the defects was that the paper itself was the biggest problem, accounting for 66% of all defects in the first month of analysis. Where the defect rate per job was particularly high, it became clear that the paper accounted for more than 90% of all defects identified.

Measurement and analysis continued and for the first time the company was able to act based on clear, measurable indicators. The management used the information in four very important ways:

- The Factory Improvement Team was able to train the workers to recognise and minimise the causes of defects;
- They presented a strong case to the paper supplier for a refund;
- They agreed with the client that the client should participate in selecting a paper supplier;
- They held three-party meetings (company, supplier and high value customer) to clearly establish each party's requirements.

IMPACT OF CHANGES

The results that the company has achieved have also been threefold:

- A dramatic reduction in defect rates;
- Refunds from paper suppliers totaling more than US\$30,000 over 3 months (which could have been an annual burden to the company of around US\$120,000 had they not implemented the procedures);
- Improved credibility and respect with their customer and credibility with their new supplier.

The new procedures are now formalised within the high value line and will be implemented into other lines in the future.

Quality Cont

Date.....		Shift.....		Name of Order.....	
Machine No.....		Quantity.....			
Defect Type	1-500	501-1000	1001-3000	3001-5000	
A	Set up				
	Mask				
	Character smudge				
	Paper				
B	Ink dots				
	Dust				

Job	Paper Type	Side	Planned Quantity	Contingency	Print Run	Good Output	Error Type		Cover	Transparency	Total Defects	%
							Paper	Printer				
5/4	Hansol	A	5,000	400	5,400	3,293	362	1,545	63	137	2,187	39.02
2/4	Hansol	A	10,000	500	10,500	8,770	1,305	215	38	172	1,730	16.48
23/4	Hansol	B	20,000	850	20,850	9,319	787	258	40	96	1,181	11.25
04/4	Hansol	A	14,000	750	14,750	14,015	285	220	22	137	694	4.98
17/4	Serm	A	30,000	750	30,750	29,488	220	608	21	309	1,282	4.10
			119,000	4,500	123,500	114,267	4,059	3,661	225	1,288	9,233	7.48