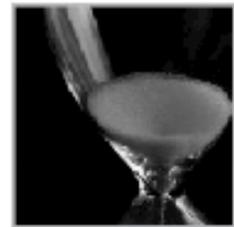
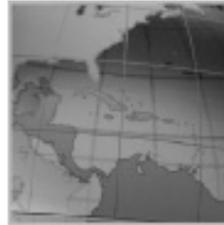


White Paper



December 2014

Measuring and Benchmarking In-Plant Performance: How to Prove and Improve Value

Table of Contents

Outsourcing: The Threat to In-Plant Production 3

We are Safe, Aren't We? 4

Motivation to Outsource 4

Metrics and Benchmarks..... 5

5 Keys to Measurement Success..... 5

The Performance Challenge 6

Operational Benchmarks for In-Plants..... 6

Sales per Employee..... 6

Internal Benchmarks..... 8

InfoTrends' Opinion 9

About InfoTrends 10

About the Author 10

List of Figures

Figure 1: Projected Growth Outsourcing 3

Figure 2: In-Plant SPE..... 7

Figure 3: Small Commercial Printer SPE 7

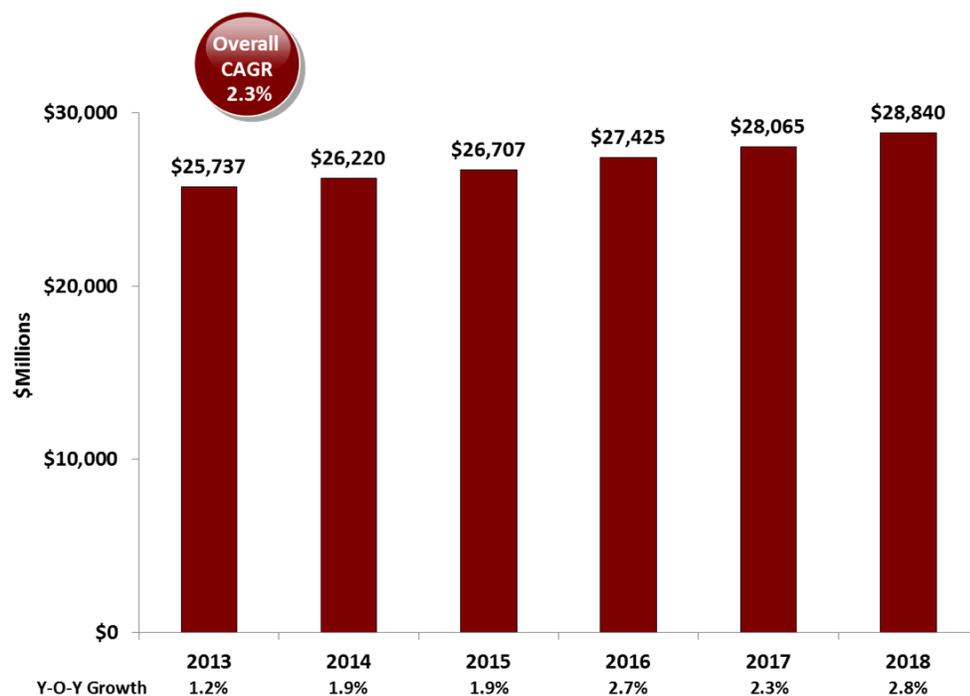
Figure 4: Commercial Mailer SPE..... 7

Outsourcing: The Threat to In-Plant Production

There was a time when in-plant managers took comfort in the fact that their longevity and records of accomplishment ensured the security of their in-plant printing and mailing services. For most, however, those days are gone. Today there is a management trend towards outsourcing services that are not considered core competencies of the parent organization, including document services, mail, and print services. In-plant managers must ask themselves if they are prepared to battle this threat. This white paper will focus on how to use operational measurements and benchmarks to prove and improve the value of the in-plant operations.

According to the InfoTrends research, *U.S. Document Outsourcing Market Forecast: 2013-2018*, the growth in outsourcing will continue over the next five years and is projected to grow 2.3% over that period.

Figure 1: Projected Growth Outsourcing



This InfoTrends report talks about some of the success stories of companies offering alternative sourcing, such as:

- DST Output will provide services to Charles Schwab for document and direct mail production.
- InnerWorkings developed a print management agreement with Young & Rubicam, a marketing communications company located in Mexico, to provide print, point of sale (POS), and promotional services.
- LogicSource reached an agreement to provide print procurement and management services to BJ's Wholesale Club.

- Broadridge Financial Solutions partnered to enable distribution to Zumbox's Digital Postal Mail service.

We are Safe, Aren't We?

While the evidence is mounting that the outsourcing of document, mailing, and print services is increasing, not everyone believes it. In our consulting work, we often hear in-plant managers say that they are safe because they believe only large enterprises or certain vertical markets are under scrutiny; however, that is not our experience. We get calls several times a month from all companies considering the advantages of outsourcing.

While no one is immune to this trend, there are certain types of in-plants that are more threatened than others. In the InfoTrends *Document Outsourcing Market Forecast*, the threat of outsourcing to transactional printers is significantly higher than the threat to in-plants offering mailing services.

Motivation to Outsource

If you attend any in-plant meetings, such as the IPMA (In-Plant Printing and Mailing Association) or ACUP (Association of College and University Printers) conferences you often hear anecdotes about why companies are considering closing their in-plants. Some of the more common explanations include the need for the space, new management, or a decree from senior management to cut costs or focus on core competencies. Perhaps the greatest challenge is overcoming the allegations made by companies trying to take over the in-plants' printing or mailing services. These alternative sourcing companies include facilities management and outsourcing companies.

According to the U.S. Document Outsourcing Market Forecast, the four most common reasons to consider outsourcing are:

1. **Cost reduction:** Cost reduction took on renewed importance after the most recent financial crisis and will continue to be a key outsourcing driver.
2. **Focus on core competencies:** Outsourcing non-core functions frees up resources to concentrate on primary business competencies and objectives.
3. **Access to technology:** Outsourcing enables organizations to gain access to current technology without making capital investments.
4. **Declining per-client print volumes leads to new opportunities:** As the market evolves, so too must service providers to garner new business.

Metrics and Benchmarks

Management guru Peter Drucker is often quoted as saying, “You can’t manage what you can’t measure.” For anyone thinking about using metrics, the first point is that what most people consider a good metric is often a bad metric. It is not uncommon, when first considering what to measure, that performance is measured in terms of output per hour. How many estimates are created per hour? How many pages are printed per hour? How many envelopes are stuffed per hour?

Nevertheless, output per hour or piecemeal measures are not good measurements, because some people will increase their output at the expense of correctness and rework. Better measurements include a measurement of accuracy or completeness.

When benchmarking, the most important attributes are quality, time, and cost.

According to Wikipedia, “Benchmarking is the process of comparing one's business processes and performance metrics to industry bests or best practices from other companies. Dimensions typically measured are quality, time, and cost. In the process of best practice benchmarking, management identifies the best firms in their industry, or in another industry where similar processes exist, and compares the results and processes of those studied (the ‘targets’) to one's own results and processes.”

Although the term “benchmarking” is often discussed as a tactic used to compare performance, it is actually both a strategy and a tactic. The tactical portion relates to the creation and monitoring of measurements. The strategic aspect refers to making a change, measuring the performance, and assessing if the change was effective in increasing productivity.

5 Keys to Measurement Success

- Do not measure output per hour. Rewarding people to increase output per hour can result in more mistakes.
- Combine output per hour with a measure of rework and create a ratio.
- Monitor if the measurement is helping to improve the process. Sometimes what you measure needs to change.
- Do not punish people for measurements. If you punish people based on measurements, they will either stop measuring or change the data.
- Do not measure unless you are going to actually use the data.

The Performance Challenge

The Canon Solutions America Performance Challenge is a web-based assessment tool developed in collaboration with InfoTrends to help in-plant managers better understand how their performance benchmarks against best practices.

The challenge focuses on five key areas:

- The management strategy rating is based on e-commerce effectiveness and the job submission rating.
- The range of products and services is based on service capabilities and the age of the production digital color print equipment.
- The workflow analysis is based on the overall workflow efficiency, on-time ratings, color management, and finishing automation.
- The awareness criteria are based on marketing activity and effectiveness.
- The loyalty rating is based on customer loyalty to print services and how often marketing departments utilize the in-plants.

If you're interested in hearing what your in-plant peers are saying about the Performance Challenge, visit: <http://ess.csa.canon.com/benchmarking.html>

Operational Benchmarks for In-Plants

This white paper is a complement to the Performance Challenge, and focuses more on specific tactical benchmarks for in-plants to help measure and improve their day-to-day performance. The metrics and benchmarks we will discuss include sales per employee and utilization rates for internal benchmarks.

One common misconception about measurements and benchmarking is that it is not enough to simply know where you stand. The most important thing is to use those measurements to identify problem areas, find the root causes, take corrective action, and monitor these measurements to determine if the corrective measures were effective.

Sales per Employee

Arguably the most common metric of performance in the printing industry is the sales per employee (SPE) ratio. It is easy to calculate by dividing the number of staff into the dollar volume of sales. It is used in commercial printing and in-plants. Often considered the most critical metric of productivity, many people do not realize that it varies for different kinds of operations. For example, the SPE is lowest for the average or general in-plant service provider, because many have more staff (often with greater longevity and higher compensation packages). In ascending order, the SPE ratio is higher for quick printers, higher for mailing service providers, and even higher for transactional in-plant printers.

According to the 2011 IPMA Pricing Study, the industry-standard ranges between \$75,000 and \$150,000.

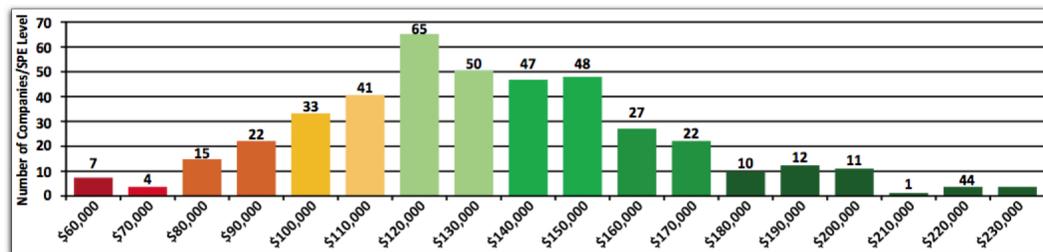
Figure 2: In-Plant SPE

Answer	0%	100%	Number of Response(s)	Response Ratio
Less than \$75,000			15	16.8 %
\$75,000 to \$150,000			40	44.9 %
More than \$150,000 to \$200,000			17	19.1 %
More than \$200,000			15	16.8 %
No Response(s)			2	2.2 %

Source: 2011 IPMA Pricing Study

Compare that to the results of the NAQP study, which found that the largest number of participants fell within the \$120,000 per employee range.

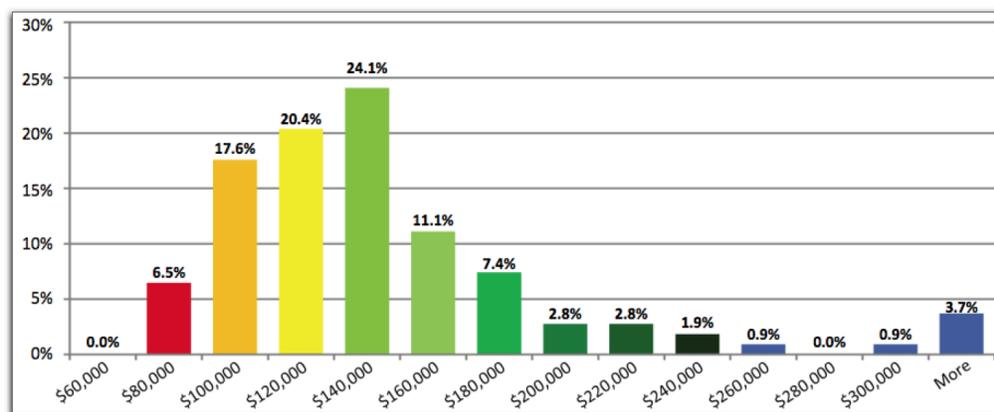
Figure 3: Small Commercial Printer SPE



Source: 2012/13 NAQP Wage and Benefit Study

In December 2013, the AMSP (Association of Marketing Service Providers) merged with NAPL. Prior to that, AMSP released their wage and benefit study based primarily upon Mailing and Fulfillment Service providers. As you can see, the category with the most responses was \$140,000.

Figure 4: Commercial Mailer SPE



Source: AMSP 2013/14 Mailing Services Pricing Study

Based on our experience with transactional printers, the sales per employee ratio is even higher for in-plant printers who print bills and statements.

Internal Benchmarks

A metric known as the utilization rate determines the time required for cost justifying equipment, provides insight into how busy staff are working, and it can be used as a measure of day-to-day productivity; however, it is a complicated relationship between equipment and staff utilization. For example, an organization with world-class equipment and staff might achieve a 65% printer utilization and 90% staff utilization.

In the printing industry there are many factors that affect the maximum equipment utilization. Offset printing, digital printing, and finishing equipment are all different and unique types of manufacturing. In some cases they share similar requirements, such as set-up time and scheduled and unscheduled maintenance. In other ways, different equipment can have different specific requirements, such as changing plates, washing blankets, refilling toner, replacing paper, and clearing jams. That is why printing equipment never achieves 100% utilization.

For the sake of simplicity, assume you calculate the theoretical maximum utilization without excluding any tasks. The simplest way to determine your highest utilization rate is to find records of your busiest or most productive time and divide your productivity into the theoretical maximum productivity.

In other words, if you had a device that can print 1,000 sheets in an hour, the theoretical maximum productivity would be 8,000 sheets in an eight-hour shift. If you look at your busiest time and found that you printed 5,200 sheets, you would know that your internal benchmark was 65%.

This utilization rate can be used to monitor day-to-day performance. In companies that achieve 65% of maximum utilization, we often see 55% of utilization as the average and 45% or less as below the average. If you ended with 4,400, that would be considered average, and if you ended with 3,600, it would be considered a poor utilization rate.

You could consider this the upper and lower control limits of performance, and monitor this performance daily. Leading companies monitored daily production to help identify issues with equipment and personnel. If, for example, you found that the productivity fell below your lower limit of 3,600 sheets, it would prompt investigative action. You would want to know if the issue was equipment or personnel. If the equipment is malfunctioning, it might require repair; if the staff was underperforming, you might have to consider additional training.

Not everybody measures utilization rate the same way. Some argue that 65% is not the maximum utilization because in their calculations they do not include scheduled maintenance and set-up times. If you remove maintenance and set-up times, maximum utilization rate can exceed 80%.

InfoTrends' Opinion

There is undeniable evidence that more and more companies are considering outsourcing services that they consider not to be core competencies, such as document services, mailing, and print services. As a result, in-plant production service providers offering these are being targeted by companies offering facilities management and outsourcing services.

Every day, an alternative sourcing company walks into the office of the C-level executives and asks why they continue with their internal production when it is not their core competency. They say they can provide the same service for less, that their company has better access to new technology, and ask why they continue to fight a battle with declining volumes.

Left unchecked, these allegations can become a motivating factor for that parent company to consider alternative sources. The best way to counter those arguments is by taking a proactive stance, measuring and benchmarking performance to prove that this is your core competency.

For those interested in benchmarking performance, there are two things you can do.

- First, take the Performance Challenge. This will help you gain insight into e-commerce effectiveness, job submission rating, the range of products and services, the age of your equipment, your workflow efficiency, on-time ratings, color management implementation, degree of finishing automation, marketing activity, marketing effectiveness, and the loyalty of your customers.
- Second, consider upgrading your operational measurements. Are they based on output / hour or ratios? Are your measurements helping to improve the process? Do you use data to punish staff? Consider the effectiveness of using SPE, competitive pricing, utilization rates, and upper and lower control limits for day-to-day production.

This material is prepared specifically for clients of InfoTrends, Inc. The opinions expressed represent our interpretation and analysis of information generally available to the public or released by responsible individuals in the subject companies. We believe that the sources of information on which our material is based are reliable and we have applied our best professional judgment to the data obtained.

About InfoTrends

InfoTrends is the leading worldwide market research and strategic consulting firm for the digital imaging and document solutions industry. We provide research, analysis, forecasts, and advice to help clients understand market trends, identify opportunities, and develop strategies to grow their businesses.

About the Author



Howie Fenton

Associate Director

howie.fenton@infotrends.com

+ 1 781 616 2138 ext. 149

Howard "Howie" Fenton is the Associate Director of Operations Consulting for InfoTrends. Mr. Fenton is responsible for working with commercial printers and universities, governments, and corporate in-plants to assess and benchmark their customer and graphic communications processes and provide recommendations on staffing, technology, and sourcing. He also works on strategy, workflow optimization, and business development initiatives.

This analysis was commissioned by NAPCO Publishing and Canon Solutions America to help in-plant managers and their parent organizations better understand how today's technology can optimize their business communications and how they can benefit by adopting these proven best practices.

Canon Solutions America, Inc., a Canon U.S.A. Company, provides enterprise, production print and large format solutions, supported by exceptional professional service offerings. Visit esa.canon.com.

