



# Print Investment Decision Making

## The Research and Guidance Report

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# Survey methodology and response

The BPIF conducted primary research with the intention that it would lead to an advisory and guidance report to assist BPIF members to improve investment decision making and appraisals. The explicit intention was to make investing a more effective process and to improve meaningful dialogue between customers and suppliers.

The Print Investment Decision Making research was conducted online with BPIF Members by BPIF Research between 9 December 2016 and 6 January 2017. The survey analysis is based upon responses from 109 companies with a combined turnover of £737 million, covering 6,808 employees and representing an average annual investment value of over £64 million per annum over the next three years.

“Making an investment decision is like formulating a scientific hypothesis and submitting it to a practical test. The main difference is that the hypothesis that underlies an investment decision is intended to make money and not to establish a universally valid generalisation.”

*George Soros*

“It is better to be approximately right than precisely wrong.”

*Warren Buffett*

“An investment in knowledge pays the best interest.”

*Benjamin Franklin*

“Know what you own, and know why you own it.”

*Peter Lynch*

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# Executive Summary

## Investment cycle budgets

- The vast majority of printers are planning up to two-years ahead when planning investments.
- The average investment expenditure is £980,000 per annum (over the next three years). However, only 3% of companies set and stick to an annual investment budget; the majority (77%) have a budget guideline and are flexible when opportunities arise. The remaining 20% do not set a budget.
- The key drivers for investment are increased performance, developing new products and sellable innovations and cost reduction.
- The main triggers for an investment decision are new technology and strategic business reviews.

## Market awareness

- The most popular sources of knowledge for investment are exhibitions/shows and trade magazines.
- Nearly three-quarters of printers claim to approach customers to help inform investment decisions.
- 45% of respondents find that it is difficult to keep abreast of market and technology changes.
- More than 70% review that competitors are doing as part of their investment decision making.

## Information gathering

- More than 80% set clear objectives and outcomes when looking at investments.
- Nearly 70% share these goals with suppliers.
- However there is clear concern that clear investment decisions are tainted by; imperfect knowledge, the pace of technological change, ability to achieve ROI, costings and effectiveness of investments.
- Printers are looking for help from independent advice/reviews, real data, case studies and a crystal ball!
- There is criticism of suppliers. 46% of printers do not receive clear lifetime cost information from suppliers.
- Respondents detailed problems across each of the sales, negotiation, pre-installation and post-installation stages of investment decision making. Post-installation was the most problematic stage of the investment decision.

## Decision making and evaluation

- Verifying claimed performance can be difficult – case studies, extensive testing and contacting current users can help.
- Almost 70% of respondents say they will conduct future risk scenario planning.
- More than one in three feel that they are often missing some options or knowledge when making an investment decision.
- Many companies will take up references, make site visits, get credit checks and approach industry colleagues when researching a new supplier or service.
- However, 46% of respondents believe that their team lacks some of the skills or knowledge to fully capitalise on opportunities – software and new technology are common concerns.
- The biggest restraints on making well-informed investment decisions are time and money.
- Nearly one quarter believe suppliers could do more to help decision-making.

## **Negotiations and deal making**

- Almost all respondents feel that most of the time they have control of their investment negotiations process.
- More communication and accurate information on pricing and timescales from suppliers would be welcomed; as would more extensive after-sales support.

## **Post-installation review/measurement**

- Over 80% of printers measure the performance and benefits of their investments.
- 45% actually ensure that their investment supplier contracts have performance criteria built in.

# Introduction

The successful capital investment decision depends on the effectiveness of the decision making process. This in itself is a truism, but in reality many 'things' get in the way of effective decision making. Decision making is part of being in business and our sector does not hesitate at making them. But it could be better at making those decisions.

This document and research seeks to:

- Highlight the range of current practice across the sector for decision making, focusing on comments from buyers who undertake the process.
- Uncovers what frustrates them and provides pointers on how sellers and vendors might improve the process.
- Offer direction on improving the process for better outcomes where possible.
- Showcase an effective platform for communication between supplier and customer.
- How to build on best practice collaborations across the supply chain.

Overall if we can raise the debate and quality of dialogue between individuals and teams within a company making investment decisions and between supplier and customer, then it's worthwhile. Better collaborative communications, better measurement, better post installation evaluation will result.

## BPIF research

The responses to the main body of research cumulatively represent £732m of turnover employing circa 6800 staff. This amounts to a good representation of current thinking and actions around investment and decision making.

## Decision making

Good decision making will invariably be able to withstand challenges, but optimising the decision making process can be difficult, especially with regard to:

- Time issues.
- Access to all the options and solutions available in any situation.
- Access to staff with specialist knowledge and experience.
- Stretched resources.
- Difficulty in gaining the fundamental knowledge around new technologies and assessing the 'real' risks associated with them.

A review of decision making procedures, the uncertainty related to this, and a number of different approaches is covered later in the report. It is a challenging process to get investment decisions completely right: it involves understanding which technology is right for the business, which will give flexibility to meet changing demands, which has a lower lifetime cost, and which does not risk your business. This applies to any change and innovation. Being an innovator can create complex problems to be solved. It is difficult to predict what the outputs will be. Even innovation will benefit from a structured process to capture ideas and find ways of implementing them.

## **Increasing the role of the marketer**

At the core of business development and underpinning any decision is knowledge, and data about the technology and market trends is knowledge. It needs to be gathered and presented in a structured format to aid the decision making process. Companies should build this approach into their business life, or at least apply the approach when starting a project to move your business forward.

## **Innovation and decision making**

The benefits of innovation should realise the following:

- Improved business efficiencies through optimisation of practices.
- Shortened time cycles.
- Superior product delivery.
- Margin improvement.
- Increased product and service value for your customers.
- Improved profitability for your company.

Decision making is a process. This process can be defined and adapted to a particular set of circumstances and will have uncertainty factored in. Synchronising the various elements requires good project management skills – often a hidden talent in our sector – these are needed to synchronise the various elements needed for success. The process of decision making demands further investigation to understand how better outcomes might be achieved.

The nature of decision making has changed owing to the risks associated with new technologies, shifts in competition and accelerated market issues. It has become much more of a strategic issue for a business and its future, not simply a review process. It is vitally important that the right decisions are taken underpinned by the structured approach. This is simply because taking the wrong decision now has greater impact on your business model, the resources you harness and the direction the business takes. And even the business itself.

Companies that get investments right will inevitably capture the most profitable opportunities, clients and markets. Companies that don't will be left to compete on less favourable terms and less attractive returns.

Sources of errors in risky decision making:

- False or wrong assumptions.
- Inaccurate estimates of probabilities.
- Reliance on expectations.
- Poor measurement of results alongside forecast errors.
- Lack of knowledge on current true costs and projected costs.

## **Gut instinct is out**

And the process must not stop once a machine is installed and switched on. Sean Smyth, an independent technology consultant, refers to the post installation stage as the most important part of the process and urges 'realistic analysis takes place, not a denial of facts'. Once installed, the company must ask if the investment performed as predicted. If not, the plan needs to be refined and changed, and resources allocated to make the decision a success. Rather than simply repeating a process carry out a detailed post installation review and consider alternatives when looking at potential repeat investments.

- Remember that training is essential and the work-flow is vital to feed jobs to the machine and then to finish and dispatch. If you are doing 20 jobs a day now, ask how you will handle 200 a day, or even 2,000, and consider the ramifications on the business.
- Look carefully at newer alternative technologies, think where they might be while the depreciation period is still going, will the decision you make now hold over the life of the asset?
- The most important element is the post-investment review. Be honest with yourself and tweak the strategy/operation to get the best out of the machine.

The report reviews service agreements and service level agreements that were deemed relevant, as there were many comments made, which highlight a mismatch between what was promised pre-installation and what actually occurred post-installation. Better collaboration and measurement along the supply chain has to be a key driver and goal to making a success of an investment.

A review of lean manufacturing and Overall Equipment Effectiveness (OEE) is also included to provide a basis for looking at the OEE of existing plant and equipment and also as a guide for future investments.



# Capital investment principles and methodology

Every business has its own unique combination of issues but overall a framework of decision making principles can be applied. In this section we provide some thoughts that should help the process for you and your team. Owners of businesses have come to expect that the business environment will continue to be uncertain and it never stops being complex. The communications environment and prints position in this have both opened up great opportunities, but this is stress testing businesses in their ability to adapt.

## Why invest?

- Staying ahead of the competition.
- Reduce costs.
- Improve profitability.
- Improve service and value delivery.
- Ability to grow.
- Concern about being left behind.

Within the decision making process we probably ask some of these questions:

- What is our range of options?
- What risks are there along the way and in going ahead?
- Can we verify the outcomes and benefits?
- What variables should we plot as part of our decision making process?
- Do we stay put and do nothing until we feel things are clearer?
- What are the competition doing/investing in?
- What will revenue and demand patterns look like?
- What is the full impact on all our resources?
- What is the true lifetime cost of the capex?
- Do we need to be an innovator to stay ahead?

Survey respondents ranked the main triggers that direct attention towards investment as:

- Awareness of new technology.
- Strategic business review.
- Cost pressure.
- Price pressure.
- Competitor activity.
- Contact from a supplier.

It is clearly important to respondents to keep a mindful eye on competitors; 72% highlighted they did this. Improving profitability is a key driver, and investment can achieve this by enabling new product introductions, reducing costs, and improving efficiencies. The problem associated with this however, is all our competitors are of the same mind, and it is down to who best applies knowledge, skills and implementation to extract the best results. This is a key differentiator nevertheless and some struggle to harness these benefits for many reasons.

The problem with reducing costs and improving efficiency is that you are only incrementally improving your margins. You need to constantly look at these areas, but how do you accelerate the impact for your own business model? Delivering innovation along with the initiatives above will provide the biggest kick for increasing profitability.

If you can create a proposition around innovation with new products, new technology and open new markets, you will achieve the highest returns. This becomes the biggest differentiator. Innovation offers a profits premium for those that can deliver innovation across their business and teams. The biggest frustration from business owners comes from stimulating and structuring this process within their businesses effectively.

In PwC's 2016 'Stimulate Innovation' report, companies that prioritise innovation to a greater extent forecast 10% higher 12-month revenue growth rates than their peers. CEOs ranked innovation as the number one approach for growth; innovation is the mantra that sells for those that can harness it.

Often businesses overlook the capabilities and creativity that they already have, before embarking on additional investment. Or worse, an investment is made without any cultural change to one that supports innovation for teams to deliver to customers. Organisations like the BPIF can help here, advising and training teams to adapt a cultural change.

The research ranked the desired benefits that drive investment decisions:

- Increased performance.
- Marketable innovations.
- Cost reductions.

Structural change across our sector is forcing greater strategic thinking. The risks associated with being an early adopters of new technology can be great and is highlighted as an issue. It is another reason why decision making needs more robust processes surrounding it. We will all have experience of how wrong decisions can have a deleterious impact on a business.

Comments from printers in the research indicate that the process of information gathering to acquire the awareness needed for good decisions is onerous. But there are articles in print and on websites that help and attendance at networking events and seminars is among the favoured ways to do this. Use events as much as possible and send your team members.

Half the respondents say they experienced difficulty in gaining clear information from suppliers on lifetime ROI and performance, yet this was not so difficult for the other half. It perhaps suggests that here is an opportunity for improved communication.

## In summary

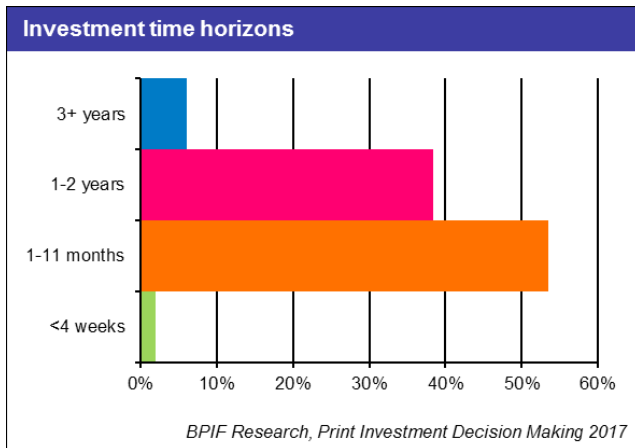
- 74% of respondents ask and include customers in the investment decision process. When we asked this question in previous research 2011 89% similarly responded in including clients in the process.
- 83% of respondents outline clear objectives and outcomes they expect from investment with the supplier but only 45% build in performance criteria into contracts.
- 45% of respondents say they lack the right blend of skills and knowledge within their team to fully develop market opportunities. This compliments a recent online snap poll which identified companies skills and knowledge needs in this area: 'Would your business benefit from having a dedicated technology champion'? 57% of respondents said yes.
- The comments highlight a big gap generally between what suppliers promise performance will be against what actually happens post installation.
- There is a request from buyers that they gain true lifetime ROI information, better training, better support and improved post-investment evaluation support.

# Investment cycle and budgets

These are the questions concerning investment cycles and budgets put to the BPIF membership:

## QUESTION

What is your typical investment decision making horizon?  
(How far ahead do you plan investments for?)



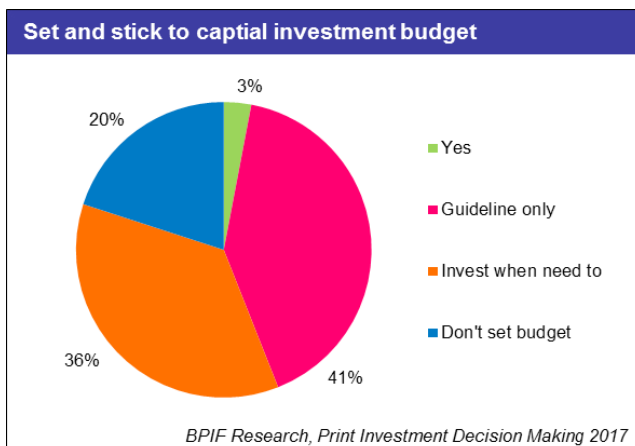
## QUESTION

What is the average annual expenditure you intend to make over the next three years?

<b>Total</b>	£64,100,00
<b>Mean</b>	£982,447
<b>Median</b>	£300,000
<b>Minimum</b>	£0
<b>Maximum</b>	£5,000,000

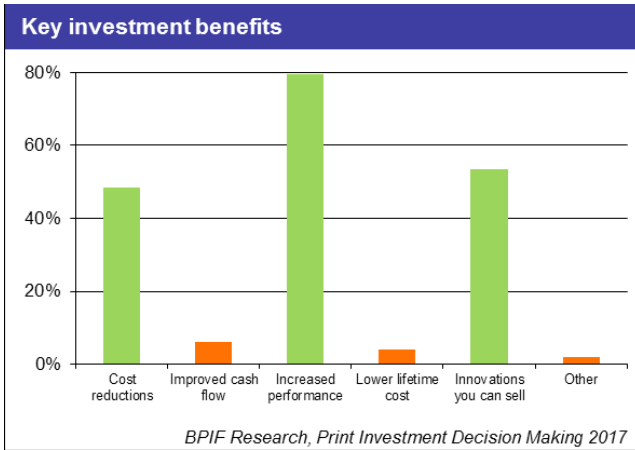
## QUESTION

Do you make a capital expenditure budget at the beginning of a given year and stick to it?



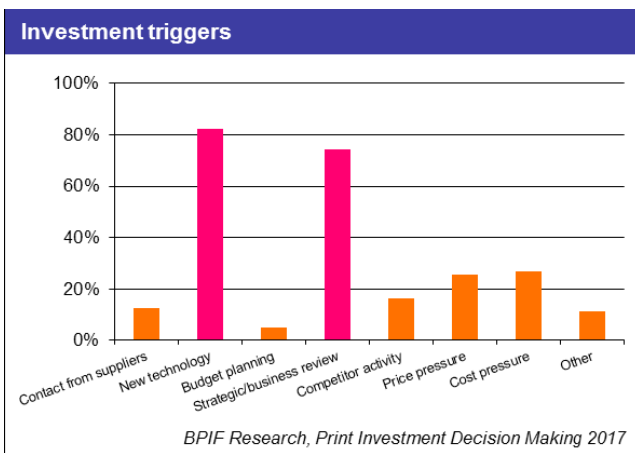
## QUESTION

Which two key benefits criteria underpin your investment decisions?



## QUESTION

What are the main triggers that would direct your attention towards investment?



# Early stage decision making

Research respondents ranked the biggest constraints in making investment decisions as:

- Finances.
- Time.
- Information Gathering.
- People Skills.
- Project Management.

As we know difficult or challenging decisions need a lot more consideration and involve issues where many of the facts are initially unknown and many interrelated factors need to be considered, including people issues. The impact and consequences of the decision might be significant and the alternatives may be numerous each with their own set of uncertainties and consequences.

Problem solving techniques and issues in such cases intermix with decision making techniques and issues, so an ordered and structured process will help if all the critical elements can be addressed logically. Structuring time in the diary and being systematic will help. Finding time is the key mantra. It will help to set up project teams which will help in spreading the load. The following breakdown steps might assist as a means to create a constructive environment for exploration and debate and ongoing dialogue.

## Using Gap Analysis

In the first instance review where you want to be, the goals that you want to achieve. For each of your objectives map your current situation using some of the following questions:

- Who has the knowledge that you need? Who will you need to speak with to get a good picture of the current situation?
- Is the information in people's heads or is it documented?
- What is the best way to get at this information?
- What common measurement metrics should I use?
- What are your issues and concerns?

"Without measurements, everyone is right. Words are cheap. The focus is inward. The sales people own the accounts. Leadership is hard. With measurements, everyone focuses on outcomes. Everyone focuses on the customer. The company owns the accounts. What works, continues; what doesn't. Existing management can exceed existing limits."

*Dallas Dort EKG*

A checklist by two Harvard colleagues, Hammond and Raiffa – co-authors of 'Smart Choices' (2009), highlights the following actions that ought to be addressed before an investment decision is made:

- Identify your real decision problem. Sometimes this is not so obvious.
- Specify your objectives. Will they all be achieved and what are the obstacles?
- Create a full range of alternatives.
- Understand the consequences of the alternatives. This is often not clear at the outset.

- Make explicit the inherent value trade-offs.
- Clarify the relevant uncertainties. Use scenario planning.
- Account for your risk tolerance. Quantify and qualify risk.
- Consider implications for interrelated factors which can make the issue more complex.

The Vroom-Yetton-Jago decision model (Leadership and Decision Making, 1973) was developed to help identify the best decision-making approach and leadership style to take, based on your current situation. More can be learnt from searching the topic, starting here: <http://www.leadership-central.com/Vroom-Yetton-Jago-decision-making-model-of-leadership.html>

Using the model can be onerous. However the following can help frame the tasks ahead:

- Quality of Decision – sometimes making the right decision is ultra-critical (and so needs input from different people), has a large time input and requires lots of analysis and information gathering. Your output decision will be of better quality as a result of this process.
- Decisions will have a scale of impact levels on your staff and teams. High impact needs more collaboration. Outcomes will be better.
- Time constraints are ever-present but scaling from time sensitive to time insensitive provides a framework for options to research and enhance the quality of decision making. Spread the load across your team and set clear deadlines and parameters.

Another option which is slightly more complicated to orchestrate, but which can also be facilitated by our BPIF Process team, is the Charette Procedure. This calls for an intense period of design or planning activity. It is facilitated by someone independent and gains input from small groups championing intense participation, a bit like brainstorming. The benefits include:

- Effective use of time as many issues are discussed at the same time.
- Improved buy in from all involved and affected as they contribute to the process at an early stage.
- Encourages higher quality options as best ideas are shaped and developed with each stage.

Another decision making technique that can be utilised where potential conflict between groups and individuals is identified is the Stepladder technique. It allows the inclusion of more and more people to the discussion gradually, while ensuring that everyone is heard.

Developed by Steven Rogelberg, Janet Barnes-Farrell and Charles Lowe in 1992, it enables all participants to contribute on an individual basis before being influenced by others and encourages a wider variety of ideas to be opened up. It also helps stop people from “hiding” within the group and it helps people avoid being not heard or overpowered by stronger, louder group members.

How it works:

- Present the task or problem individually before a group meeting and ask the individual to come back with their own views and opinions on how to tackle the problem and the options.
- Ask a core group of maybe two staff to discuss the problem and issue.
- Then include another member to the core group. They present ideas to the first two members before hearing the ideas that have already been discussed. All three outline their ideas and discuss the options together.
- Add in another member if you have one – and repeat the process and so on.
- Reach a final decision after all involved have been heard in this repeated process. Each presents in front of the others and the group discusses ideas and options.

## Investigating the situation in detail

The idea of fully understanding the situation sounds simple but many interrelated factors might need to be considered. It may help to start by considering the decision in the context of the problem it is intended to address.

The 5 Whys approach, developed by Sakichi Toyoda, the founder of Toyota, was introduced in the 1930s and is still used today. It is often applied in lean manufacturing practices and uses counter measures rather than just solutions. A counter-measure is an action or set of actions that seek to prevent the problem occurring again, while a solution might just deal with the current situation. Counter-measures are a more robust process which is more likely to prevent the problem from recurring.

Each time you ask “Why,” look for an answer that is based on fact: it must be an account of things that have actually happened – not events that might have happened. This stops the 5 Whys becoming just a process of deductive reasoning, which can generate a number of possible causes and create ambiguity and non-resolution. Never stop asking ‘Why?’ Until you have identified the root cause and can go no further. An appropriate counter measure should become evident through this process.

Another complimentary technique is Root Cause Analysis and it traces the origins of a problem and issue. Something is considered a root cause if its removal from the problem fault sequence prevents the final unwanted event from being repeated. A causal factor is one that affects an event’s outcome, but is not a root cause. Removing a causal factor can benefit an outcome but it does not prevent its recurrence with absolute certainty. Instilling the right use of language and focus can help the team in communicating better options and outcomes in the decision making process.

Those from a military background will be used to the ‘Problem Appreciation Process’, this draws from the experience of battlefield situations. The army defines an ‘Appreciation’ as ‘a logical process of reasoning, the object of which is to determine, from facts known or assumed, the best or better course of action to take in any given circumstance.’

## The ingredients of a Sound Appreciation cover

- Clear thought and logical reasoning
- A sound knowledge of tactics at the level at which you are working, whether it be corporate, business, or operational levels
- Consideration of all aspects applicable to the situation
- Not allowing yourself to be confined by rigid parameters
- Common Sense

The key words are ‘identify an appropriate course of action’. Sherlock Holmes used it in his logical assessment of all known facts and then drew a logical deduction. Every time you make a decision as the result of some prior consideration, you have made an Appreciation.

Another decision making technique which can help in complicated scenarios and not miss important information is ‘Catwoe’, originally defined by Peter Checkland as part of his Soft Systems Methodology (SSM). It aims to identify what the business is trying to achieve through a simple checklist, what are the problem areas and how will the solution affect the business and people involved in it?



**CLIENTS** are the users of the system or process. These are the people who benefit of may suffer due to the change in the system/process. Step one in a Catwoe analysis is identifying such stakeholders and understanding how the process or system affects them.

Use questions such as:

- Who is on the receiving end?
- What problem do they have now?
- How will they react to what you are proposing?
- Who are the winners and losers?

**ACTORS** are the people involved in the implementation of the changes in the system/changes, such as IT or HR personnel.

Questions might be:

- Who are the actors who will 'do the doing', carrying out your solution?
- What is the impact on them?
- How might they react?

**TRANSFORMATION** changes that the system or process brings about. A Catwoe analysis requires listing the inputs and the nature of change inputs undergo to become outputs.

Questions would be:

- What is the process for transforming inputs into outputs?
- What are the inputs? Where do they come from?
- What are the outputs? Where do they go to?
- What are all the steps in between?

**WORLDVIEW** is the big picture and the wider impact of the transformed system/process from each stakeholder and come up with the positive and negative impact on the overall business.

- A few questions to help:
- What is the bigger picture into which the situation fits?
- What is the real problem you are working on?
- What is the wider impact of any solution?

**OWNERS** are the decision makers who have the authority to make the changes, stop the project, or decide on whether to go ahead with the change.

Helpful questions might be:

- Who is the real owner or owners of the process or situation you are changing?
- Can they help you or stop you?
- What would cause them to get in your way?
- What would lead them to help you?

### **ENVIRONMENTAL LIMITATIONS**

- What are the broader constraints that act on the situation and your ideas?
- What are the ethical limits, regulations and laws, financial constraints and resources limitations?
- How might these constrain your solution? How can you get around them?

The wider the options explored the better the final decision will be. Better outcomes can come from looking at problems from different angles. Decision makers may worry about the risks associated with making investment decisions so do make the time to apply some useful techniques.

An 'Orapapa' checklist is another tool to examine all sides of a challenge and seeks to facilitate open and honest discussion. It stands for Opportunities, Risks, Alternatives and Improvements, Past Experience, Analysis, People, Alignment and Ethics. Good decisions are about asking great questions or the best questions and while these checklists and acronyms might seem onerous applying some of the things if not all, might make the difference for you and your team.

**OPPORTUNITIES** What opportunities will open up for me as I move ahead? What good will happen to and for me as I move forward?

**RISKS** What could go wrong and how will that affect my business and life?

**ALTERNATIVES AND IMPROVEMENTS** are there any other options? Can I make a different choice that will create a good result?

**PAST EXPERIENCE** Did anyone else you know have this same type of question in front of them? What did they do? Did it work or did they fail? Ask the BPIF for contacts, or check other case studies.

**ANALYSIS** Carefully review the data collated. Are there any unusual trends? Are you still showing bias, when you answered the questions? Did you speak with people who would give you all sides of the story? What else do you need to learn? What assumptions need to be re-validated?

**PEOPLE** How will other people feel? What will other people think? How much should you consider other people with this challenge? Do other people have all the information they need?

**ALIGNMENT AND ETHICS** How will the decision best fit into your standards? Will the decision dovetail with your personal and business life?

Selecting the best solution is of course what you want to do for your business but reducing doubt and reducing as much as possible the feeling that you are missing something makes it worth looking at the process and where it can be improved for next time. Companies operating as part of a group have to compete for investment and will go through these processes exactly to justify investment against other sites.

If you have a few competing options at the end of this process maybe try using Decision Matrix Analysis to compare them reliably and rigorously or Paired Comparison Analysis to determine relative importance by weighting. The internet will give you more detail.

## **Be inclusive and engage your talent**

First, engage a wider range of staff and teamwork in the identification of opportunities and in the decision making process. There is a great amount of enterprise and energy across most teams and catching their entrepreneurial spirit can open up unexpected opportunities and ideas. At the end of the day most people's futures are bound up more in the future of your business.

Make sure you can explain your vision and also understand how open you are to the great things that are happening across the sector. Settling about changing the feeling that you are besieged is a good starting point and use organisations like the BPIF with their access to data and information to inform and educate.

It is encouraging that survey respondents gave a resounding yes to involvement of team members in the decision making process. Tasking individuals or groups with research or feedback on the implications of the investment is vital alongside creating cross functional teams with responsibilities to provide input on options and implications.

In making capital investment decisions the most trusted source is still internal experience and expertise. What is often lacking is fully qualified feedback and the verification process is not managed effectively and scenarios not fully mapped.

## **Disagreement can be beneficial**

By not allowing dissent and disagreement, a full analysis of a situation often is missed. Everything has a downside when viewed from certain angles and different perspectives are helpful. Alfred Sloan (CEO of General Motors from 1923 to 1956) once said in a directors' meeting: 'Gentlemen, I take it that we are all in complete agreement on the decision here. Then, I propose that we postpone further discussion to give ourselves time to develop disagreement and perhaps gain some understanding of what the decision is all about.'

- A disagreement can often prevent you from rushing into bad decisions and choices. The disagreement may give you time to ponder even though any delay can be irritating. It is quite possible you may have done extensive homework to support a decision, but still may have overlooked a simple, but important point, which the dissenter can see from a different angle.
- Use any disagreements to your advantage. People who can disagree often have a sound view to be factored in. When doing a project or a major task, you need people who can blurt out problems and obstacles openly, not someone who will happily say everything can be done and pat your back.

## **A relevant question in the survey was interesting in this respect**

Do you often feel you are missing all the options and knowledge about benefits of available equipment and solutions when you are making a decision?

64% said No, 34% said Yes.

But outside factors such as state of the economy, strength of market demand, customer buying behaviour and competitor activity create uncertainty when making decisions.

Companies in the industry are taking on board a marketing led approach to drive growth and communicate with customers, something to be welcomed. Market research is vital in strategic decision making scenarios – a bigger issue for companies today as mentioned earlier.

## The role of the Marketer

The decisions which market research can assist with are as varied as the business which makes them, but need to offer more quantified data. If you don't have an on-payroll resource, look to commission a report or use the many reports produced by institutions and suppliers. Paul R Smith (<http://prsmith.org/sostac/>) offers a useful front end framework to produce a marketing plan and sequence with his 'Sostac' acronym:

**SITUATION ANALYSIS** A starting point is to fully understand the situation and analyse it in every way. This is the big impact stuff.

**OBJECTIVES** may be set in advance of doing the situation analysis but also arise from it.

**STRATEGIES** are the long term actions that will be required to achieve the goal.

**TACTICS** are the short term specific actions that are part of the overarching strategies.

**ACTIONS** are tasks that need doing by different people and with a given resource over the short term, medium term and long term.

**CONTROLS** are measures that ensure the actions are successful in achieving the goal.

The resource and cost you attach to undertaking market research is of course dependent on the degree of risk associated with the decision making and level of investment proposals you are reviewing.

There is, however, often an inability by customers to communicate their unmet needs for innovative products. Some customers in certain types of businesses are quite capable of explaining precisely what sort of innovative product one could build and sell them. Some customers in other types of businesses are wholly incapable of explaining, with any sort of accuracy whatsoever, what they need and why they need it. You know your customers and can discriminate accordingly, continually checking their vision against reality.

## Use financially defined investment analysis techniques

Appraise ROI and investment criteria mercilessly with different 'blue', 'grey' and 'black' scenario planning and match these with better marketing intelligence. Modelling and investment financial input can also be bought from outside your organisation if you don't feel you have the full skills available. The three most common measures to estimate the return on investments are – Payback Method, Net Present Value Method and IRR Methods.

Use of Discounted Cash Flow Techniques and Net Present Values in themselves are too inflexible to account for the variables business owners face today, but a relevant bundle of financial forecasting techniques should be used to provide a broad picture. The assumptions and judgements used still need to be based on good and relevant information. By plotting a picture of where the business is going, 'right' decisions will be made rather than 'wrong'. Risk management is about lowering and quantifying risk.

Be aware that pinpoint accuracy and exact forecasting is mostly impossible to achieve but the skill comes from an intelligent blend of forecasting and predictions and while a decision needs to be made in the final analysis, gaining maximum input from a wide range of sources and individuals is not time wasted.

Posing and asking a range of questions and gaining input from a variety of sources is essential and there are a wide variety of supportive agencies you can engage with. Again, the BPIF is well placed to talk and advise across this area with specialist knowledge and a range of financial and technical services.

## **Cash generation is the most important issue**

In today's rapidly changing environment, cash creation and cash management become the most critical issues relating to capital investment decisions. The amount of cash in needs to be carefully compared to the amount of cash that will be returned, when, and in what pattern of payback.

The nature of today's risk means that the future returns have a great variety of possible values and so time taken to evaluate this more fully is fundamental. The more information you have available the better. It seems strange but many multimillion turnover companies still spend on the basis of 'gut feel' and minimum risk and have no detailed ROI analysis. Being optimistic is still OK. But being unrealistic is not.

Capital Budgeting is another term for capital investment and decisions focus on allotting the capital investment funds of the firm in the most effective manner to make sure the returns are the best possible returns. Some investment decisions will have a requirement for shorter term returns and others longer term returns. It often happens that short term payback/returns become longer term due to knowledge gaps when making the original decision, over optimism, fundamental market change or customer change. Building in flexibility is a key issue in today's marketplace.

## **Make sure you are getting the best out of what you have got**

Technology leaps are providing circa 30% or more uplifts in productivity and, allied to work-flow and system integration, even greater productivity leaps can be made. However, it is vital to maximise ensuring Overall Equipment Effectiveness (OEE) on existing equipment prior to any new investment. You need to have personnel who can achieve the optimal performance required on existing machinery as a prerequisite. The review on how to measure productivity later in the report is a useful aide memoir.

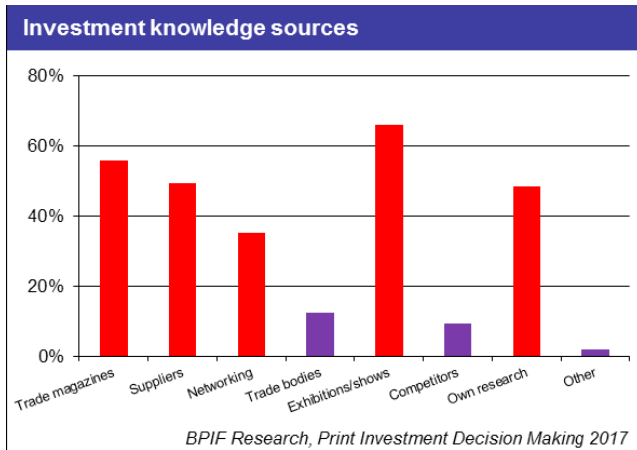
## **Consider alternatives to investment**

There are many other options and they should be compared and contrasted in relation to investment in delivering your overall strategy. Review outsourcing, the potential for joint ventures and collaborative agreements, merger or acquisition, opportunities, or indeed a trade sale. It is a time to evaluate risk and reward in a more creative way. Make these considerations an integral part of your business planning and strategy planning.

# Market awareness

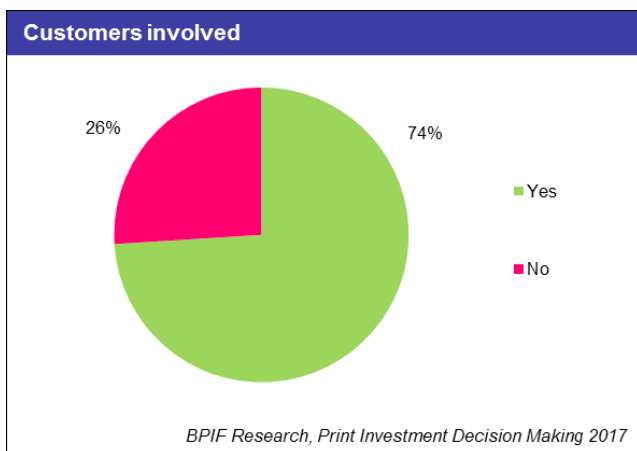
## QUESTION

How do you keep abreast of potential investments to improve your business and performance?



## QUESTION

Do you ask customers their views and use customer feedback to help inform and make investment decisions?



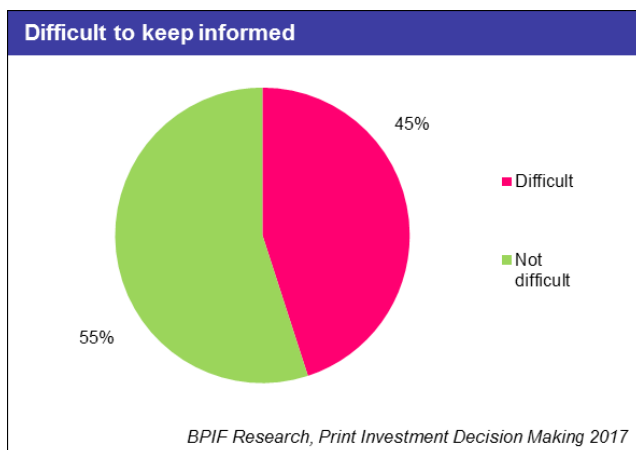
## COMMENTS

- They may receive print from another supplier that is using the new technology.
- Client surveys and one-to-one client meetings with specific questions and budgets discussed on kit, volume, direction etc.
- Selected key clients asked and shown samples.
- We invest for the benefit and growth.
- If we are looking at new processes and additional services we speak to clients to understand if they see what we are proposing as a benefit.
- We speak to our customers and heed their feedback and their intention to support and consider before taking final decision.
- Feedback from the sales team help informed decision making.

- We tend not to invest in the expectation of winning new work.
- It depends on the investment. If we are replacing a machine which produces the same product quicker/cheaper then we won't. If it is a new technology then we may consult to ensure what we buy produces items that are acceptable to them.
- We align our business plans to those of our key customers.
- Customer feedback is informal – it is used anecdotally to inform decision making.
- Certain customers are very receptive and have helped us develop new solutions.
- Only if the investment is for a new product or service.
- Our investment decisions are always based on our continued ability to provide a first class service to all of our key clients; their feedback is invaluable to us.
- Always looking to work with customers on joint projects which will add value for both parties.
- You need to satisfy customer needs and to do this you need to understand any changes they will make to their businesses.
- In this rather fickle market, where loyalty has been a major casualty, we would take any feedback with a pinch of salt and trust our own experience to make any decisions.
- Regular client meetings to understand issues, make software purchases and equipment purchase to help improve services offered to clients.

## QUESTION

Do you feel it's difficult to keep abreast of market changes?



## COMMENTS

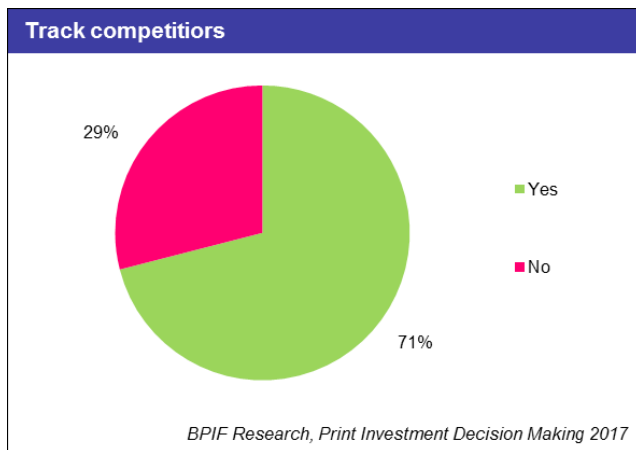
- No not all market changes warrant change, we remain focused on our customer requirements.
- A lot going on in our industry and a lot of potential risk that lays ahead for all of us in light of Brexit.
- Easier with internet and Google.
- Often I think suppliers don't communicate the practical production issues of new innovations, they concentrate on the how to sell and where to sell, not the real practical production.
- The market is constantly changing that's what management is all about.
- If you read the press and attend exhibitions you will see what others are doing.
- In particular print and paper are never shy to promote what is happening and what their intentions are so news is always available.

- So fast moving. Easy to be left behind.
- The internet makes it very easy to investigate and gain knowledge.
- Not difficult, however not always easy, requires research.
- The trend to smaller and smaller orders using digital presses continues to accelerate.
- One naturally tends to review the market when replacement or poor performance comes along as opposed to it being a constant focus.
- Exhibitions and contacts in the industry help in this regard.
- There is a lot of information out there. Trade shows, supplier events, trade press and networking keep us up to date of where the market is heading.
- We need to stay active in talking with our clients to establish trends and future requirements/change monitoring.
- Mainly for new areas we are considering entering, e.g. web to print or large format. When you don't know the sector it can be overwhelming and making the right choice can be a minefield.
- The team shares developments.
- We have limited time and resources for research.
- Suppliers are generally proactive in talking to us.
- We have a very active systems director.
- Trade press and networking help.
- There is now more information available than ever, i.e. the internet.
- Change can happen without any notice if we don't keep close to our customers.
- 50% of our sales are digital labels and the presses are out of date in 4 years.
- There is such an array of new technologies it is often difficult to decide what route best suits our needs in order to generate new types of work.
- So many new things to look at and talk about. What is going to stick around? What happened to stochastic/hexachrome/waterless and others? All fantastic but failed to make the impact/change they hoped for?
- It is difficult, but markets will always change. It is all about timing and when to move to capture a good return is the important thing.



## QUESTION

Do you review what your competitors are doing as part of your investment decision making?



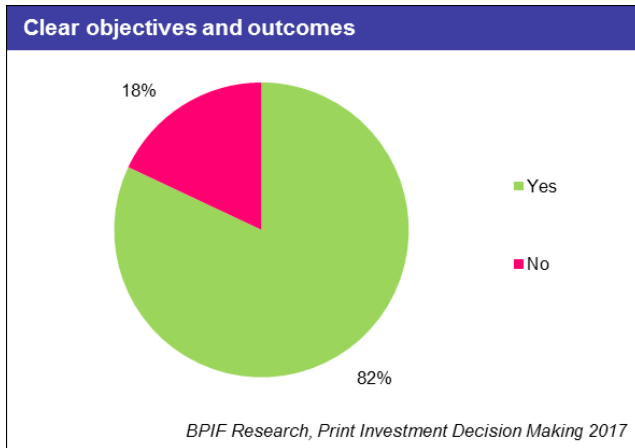
## COMMENTS

- Only out of interest – very little impact on our own decisions.
- Not interested in what competitors are doing beyond have they any ideas worth pinching.
- Only if we see a synergy in what they are doing and what we think we should be doing. I am very interested in the print businesses that are doing very well however it is difficult to see in a smallish business how much people are taking out of the business and this can make a very profitable business look normal.
- More of a maybe – depends based on investment. Is it a 'me too' or innovation and leading the market?
- Peer group activity important.
- We try to stay ahead rather than react.
- Yes, but could do a lot more homework if we are honest.
- As part of a basic Swot analysis.
- Not formally, but we are generally aware of what our competitors are doing.
- This is ongoing rather than just around Capex.
- Company house figures, share account feedback on their service offering etc.
- More a case of ensuring that we do not enter an area of the market already over 'subscribed'.
- There is no point in trying to be me too. You are then too late for your investment decision.
- Price driven market, we must always be aware of what our competitors are doing, quality and delivery is a given.
- I like to read case studies in trade magazines in order to stay abreast of what other companies are doing.
- Make sure you are doing the best for your company and ignore competitors to a degree.
- You don't know the details of their financial situation, and they could be broke the next week. Have confidence in the decisions you make for your circumstances and try to be flexible to enable you to act swiftly on market changes.
- Decisions are based on our own direction and strategy and client need.

# Information gathering

## QUESTION

Do you outline the clear objectives that you need to achieve, and the outcomes you expect, when looking at investments?



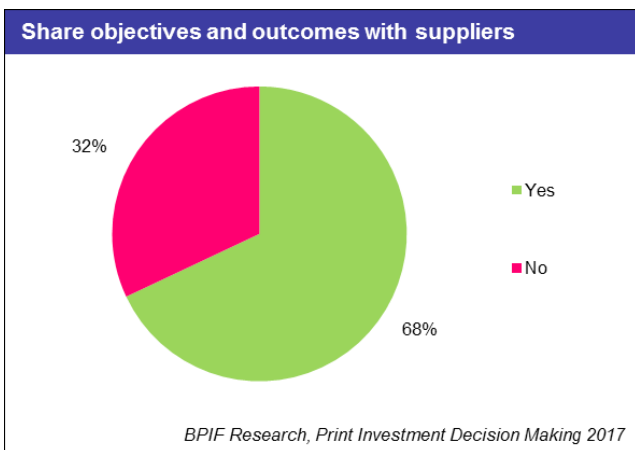
## COMMENTS

- We set targets both in terms of revenue and potential customers.
- Detailed capex forms and cash flow forecasts.
- We look at costs and benefits – looking for cost reduction and better performance quality, throughput and lower running costs.
- All directors are clear in objectives and what they intend to achieve.
- Written objectives are weak as business size means we understand on a daily basis achievements and goals.
- Maintaining our market share has become more and more difficult on the packaging side as we remain loyal to UK manufacturers whilst competitors import from India and China.
- Due to constant changes it is a moving target.
- Yes both in quality and performance, cost then comes into the equation.
- We focus on payback.
- Each capital purchase needs to be backed up by a formal business case which will be signed off by the board prior to investment. This will include an ROI analysis, any cost savings and other strategic reasons for the purchase.
- We need to have accurate customer projections on their future business volumes to estimate if additional or newer technology investments can be justified against on-going sales. We also need to know if the technology will make our business more efficient in producing more for less/the same. For example new presses with shorter less costly make-readies.
- This varies and depends on the level of investment. If it is a small outlay no (not as critical to business success) but for larger investments such as a press, yes. The decision making process is also longer with larger investments.
- Investment decisions are backed by detailed capital equipment justification paper that details business efficiencies, incremental sales targets and payback period.
- Our latest investments have proved to be very successful due to the research we undertook.
- Detailed Excel modelling.

- Technology we invest in must provide added value in terms of output quality, reliability and return on our investment.
- We have a ROI policy which is regularly reviewed.
- Cash is king in a business and you need to make any expenditure count. It is essential you have a clear idea of what you want to achieve before you invest.
- The sellers' claims are fully assessed and budgets set with a healthy degree of scepticism. If it is a computer or software, for budgetary purposes, we halve the claimed benefits!
- We try to look at all the different positives and negatives but this is more a general discussion rather than an in-depth plan.
- Make the decision and make it work.

## QUESTION

Do you share these objectives and outcomes with your potential suppliers?



## COMMENTS

- Might hint at some of the numbers – only to negotiate a better deal!
- We share where relevant. As long as the information we provide is kept confidential, it (hopefully) helps give our suppliers the data they need to produce innovative solutions for us. It also helps proof (or disproof) investment concepts.
- They would be written into outcomes that would trigger payment.
- No.
- It's suppliers that sell the benefits so naturally feedback pros and cons.
- Only if equipment performance fails to meet supplier claims. Again sometimes.
- Essential to get them onto the same page.
- Written guarantees are usually sought.
- We sometimes work with suppliers before making final decision as if they cannot supply our requirements there is no point in proceeding with an investment.
- Yes and they tell us these can be met. We usually work together to see worthwhile improvements but there is no contractual obligation on their part to meet these outcomes.
- Occasionally, depending on the specific circumstances.

## QUESTION

What concerns you most when thinking about any gaps in your knowledge when making an investment decision?

## COMMENTS

- That it may not prove to be the best investment decision.
- Wider industry trends. Real return on investment numbers.
- Any investment is made with a clear strategy and knowledge of the markets we intend to work in.
- Will the sales continue or will we lose a client and then the “numbers” suddenly worsen.
- That we will make the wrong decision, or a better solution is just around the corner.
- Implementation and skilled staffing levels.
- Production implications of new equipment and will it actually do what it is supposed to do? Too many pieces of equipment work on demo but not in the varied uses of everyday production.
- The main concern is that you don't know what you don't know and it's not always easy to find out what question you should be asking.
- What the manufacturers and resellers DON'T tell you. Caveat emptor.
- Confidence in the, supplier big or small, and their approach before, during and after the buying process. An end to end ownership on integration is critical.
- Buying a piece of kit that doesn't do what you want it to in a commercial environment.
- That I could miss details or there could be a better investment to be had.
- The unknown – suppliers always promise the earth, and the gap/concern is will it deliver.
- Backing the wrong technology or product that will become obsolete before any benefit can be harvested.
- Where to obtain information on real time usage of kit, rather than suppliers' opinions.
- Print buyers' opinions on their expectations of suppliers.
- Spending money unwisely.
- The pace of development of internet sales and digital technology. For example... I think we all know we can buy a new computer up to full spec today and in 6 months there will be a newer much faster model available.
- We buy only digital but the technology is moving so fast that you are not sure where the kit fits in the development cycle, it is so new that it is expensive and has bugs or is it becoming old and will be superseded by newer and faster solutions in the near future?
- Buying something our clients really want and not what one supplier thinks we need. Long term opinions from your key clients is very difficult to command.
- Evaluating actual – as opposed to theoretical or promised – performance data, which can be miles apart.
- Biggest concern is supplier claims of capability and what is actually possible in the 'real world'.
- A major concern is the speed of change in the printing technology available. We need to be very confident of the ROI and the payback period because printing technology goes out of date so much quicker than historically. Also, a concern is ensuring the solution is future proofed, especially on the work-flow side. There are no industry standards with regards to work-flow. Supplier's software will always work with their hardware but when you start adding hardware from other suppliers this often causes difficulties. There is a fear that buying a software solution forces us onto that suppliers' hardware/upgrade path.

- I tend to speak to different suppliers and contacts whom may have a better idea or some experience of the different machinery limitations etc. This way I can then make contact with the suppliers that could possibly achieve our targets and go from there. Carry out trials with existing products etc. to ensure they are produced to an acceptable standard.
- I don't know what I don't know.
- Nothing, we have been successful in knowing our own business and generally investment decisions are always benchmarked up front to justify the capital outlay.
- Will it do what they say it does?
- Sometimes the supplier doesn't provide the complete picture for example press integration with MIS.
- Concern of best available solution.
- You don't know what you don't know, therefore education is key to try and avoid unknown gaps.
- Not knowing everything.
- My only concern is the time I would need to give to make an educated investment decision.
- The pace of change in technology, and the lack of a good sales infrastructure in our business to promote the investment effectively.
- Some of the solutions, regarding data storage for example, are found outside our industry which makes things more difficult.
- The assumptions underpinning the investment decision.
- That the investment will bring in the return it needs to that will make it a worthwhile one.
- User experience being relevant and complete to support the manufacturer claims. Full appreciation of all rival technology strengths and weaknesses.
- Reliability of new equipment technology.
- Correct pricing.
- That we are investing in the right technology!
- Ensuring that the right technological option is selected.
- Some suppliers are so keen to get a sale so don't always inform you of all available options which would result in higher initial costs. They can then sell you add-ons once you realise what you have actually purchased is slightly lacking in equipment.
- Market change or expected throughput of volume and performance change.
- Biggest concern is ensuring we buy the best product at most economical price. Technology goes out of date very quickly in the fast moving economy and it's hard to make sure you have the best product available. In the past we have made errors due to lack of knowledge.
- The difference between the claimed performance and the reality.
- New market growth and the ability to move into them.
- Buying too early or late, the market cycle is key.
- Effectiveness of new technology.
- Running costs of the presses.
- If we are an early adopter having sufficient data to verify supplier claims for performance etc.
- What the future holds.
- We seek the necessary advice.
- Whether we are being ripped off through lack of knowledge.
- That I have overlooked an issue or been blinded by the technology rather than what can it do for us. This is particularly the case with more IT related decisions such as online ordering etc.

- Technical capability of the machines to matching our needs without exposing too much knowledge of our business.
- Lifecycle/life time of the product.
- IT implications and costs for digital investments. Print Quality from new technology.
- Delaying the right decision.
- Missing an opportunity or area we should look at not knowing it was there or certain options were there.
- Trying to assess the size of a potential market.
- Changes in macro environment e.g. strength of Sterling.
- Is this the correct and best value product?

## QUESTION

What would help you make decisions easier?

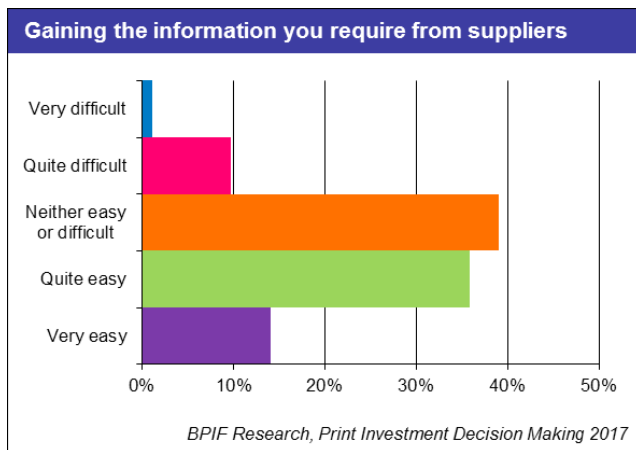
## COMMENTS

- By doing a comprehensive cost/benefit analysis.
- Crystal ball scenarios.
- Information is out there and you need to find it, but the pace of change is rapid and investment decisions today will be old hat next year in many cases.
- A money back no quibble guarantee!
- Impartial advice covering specific types of investments.
- More knowledge.
- More professional pre-sales advice from the manufacturers and resellers.
- Access to historic machinery/software reviews/blogs in a searchable database such as the ones published in the trade press.
- Seeing what kit competitors buy.
- Research, research and testing.
- The gift of second sight!
- Better support from suppliers on marketing products we take on.
- Unbiased articles on day to day usage of kit.
- Accurate real time information on the economy rather than three months after the events.
- It's always about knowledge.
- An extra member of staff on the office side but we cannot at present afford an extra wage salary.
- Independent advice in the marketplace.
- Independent industry in depth analysis by someone who can evaluate future trends.
- Pooled information on machine performance.
- Honesty and better supplier support.
- Industry standard connectivity between machines/suppliers.
- Side by side reviews of the same kits from different suppliers, pros and cons.
- An unbiased review or database of new developments available.
- A crystal ball to have visibility of external events outside our control e.g. Brexit and it's impact.
- Customer stability.

- We need to understand the complete integration process and what that may entail.
- Repository listing all relevant data.
- Omniscience.
- A fairy godmother!
- More time.
- Improving our marketing to ensure we get better recognition of what we are doing as a business, and therefore create the sales opportunities that help underpin the investment decisions.
- The investment being underpinned by genuine partnership and long term commitments from customers.
- Trial period using machinery. Comparison chart of all available options or, at least, leading options. Numbers sold.
- More independent reviews. Possibly an online forum.
- Competitor feedback.
- Accountant working with production staff prior to investment.
- Straight forward information on the various benefits and shortcomings of the various technology available with digital print systems.
- Working in partnership with customers against contractual requirements and deliverables.
- Proof of concept.
- Real data from suppliers which is taken from other printers.
- To be able to talk to experts who have tried out equipment and who will give independent advice on the best way forward rather than having to always break ground ourselves would be wonderful.
- Case studies from other users.
- Better knowledge of the markets.
- Longer guarantees from manufacturers.
- Knowing there would be almost guaranteed work on the back of the investment.
- Visit to suppliers to have a demonstration plus better understanding of running costs and life expectancy of the press.
- As above – a wider pool of actual performance data re speed, downtime, make-ready etc.
- A strong, stable economy.
- Maybe a BPIF forum on the website.
- An unbiased opinion with a knowledge of the product we are looking to invest in.
- Speaking to someone in a real life scenario that is actually using the product in a practical way rather than just relying on sales promotion.
- Detailed reviews of machines.
- Advice on lifetime of equipment and cost recoup within that time frame.
- An independent expert review of the process.
- A less volatile market.
- A process.
- Improved decision making process. Awareness of options.

## QUESTION

How easy is it to gain the information you require from suppliers to make a decision?



## COMMENTS

- But do you believe it? I never do and ratchet it back by 15% plus.
- Supplier will always exaggerate their machines capabilities.
- Very mixed, some suppliers are OK. Most are either ignorant of their own products, or will withhold important information.
- Depends on the supplier.
- They want to tell you all the ups, not the downs.
- Usually case studies from around the world. Opportunities to visit users.
- Case studies and access to others are generally easy to come by.
- It can be difficult to assess the respective claims of the sales people who all feel their kit is the best option.
- Suppliers vary greatly.
- Suppliers have all been good at providing access to demo kit to trial output files.
- Independent information which is not biased to their offering.
- They always exaggerate – sometimes criminally.
- Getting the information is easy enough, the accuracy of that information is something else.
- Suppliers are often very keen to help to prove the business case for the potential investment.
- Unless it's Heidelberg!
- We sometimes learn things after equipment is commissioned.
- Suppliers use different ways of tabulating key data and make it difficult to perform like for like comparisons (on purpose).
- Not all potential suppliers have good technical sales staff.
- Varies by supplier – some give information overload, others have hidden gems they don't think you will be interested in.
- We can ask as many questions and do as many tests as possible but, as Donald Rumsfeld said, 'It is the unknown unknowns that you need to worry about'.



- Claims are easy to get. Valid experience less easy to get. Issues or shortcomings often hard to uncover.
- Suppliers have their own agendas not in sync with ours.
- I normally just tell a supplier what I expect is openness and that we would be disappointed if they didn't lay out all of the available options.
- Can always get information but it needs to be verified by ourselves by production testing.
- As usual, its not what they say, but what they don't say that matters!
- Just hard work!
- If you ask the correct questions you usually get the right answer. We find it best to visit either another customer or their workshop and talk to the people using the equipment rather than sales people as you learn a lot more.
- Sales staff always willing to outline the merits of their offering.
- We have a long established relationship with all our key suppliers.
- Suppliers are always very forthcoming with information when requested.
- Suppliers say they outsource certain services but you never know if it will be pushed your way after making the investment.
- All suppliers are open to a demonstration and visit.
- It's the suppliers job to sell their kit so they only tell you the good things.
- The bigger suppliers have much more R&D than we have as a smaller company. Use their expertise to back up your investment thoughts/needs.

## QUESTION

What specific information would help you, and your team, more?

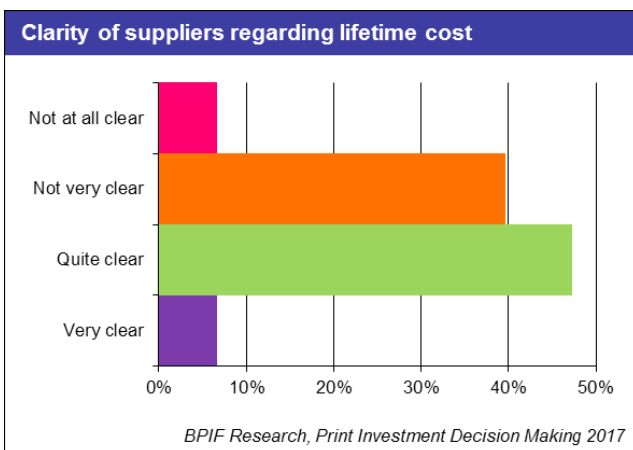
## COMMENTS

- The BPIF or another "independent and impartial" source collecting accurate and truthful data.
- Facts.
- Product limitations and drawbacks.
- Unbiased reviews.
- The more relevant information the better.
- Financial is a help for ROI.
- Up time data. Total cost of ownership.
- Suppliers understanding our needs.
- We would ask who had purchased equipment recently to have a discussion with them.
- Trends, innovations, rules and guidelines in the pipeline.
- Financial long term modelling.
- Peer reviews.
- All sales people only give the benefits of the item they are selling which is understandable, however if they could give examples of limitations then it would save the hassles once the machine is installed etc. This has in some instances led to the machinery being removed as something was not fully revealed is probably the best way to say it.
- More performance data.
- Again, get a complete picture of how equipment and process fully integrates.

- All available options and ensure comparing like for like.
- An independent objective measure of print quality would be great.
- Clear specifications all set out in the same way.
- Difficult to answer as it will vary by investment – we are a diverse business by anything from enclosing lines to web presses.
- A better understanding as to what we are trying to achieve from new investments by our machinery suppliers.
- A user forum.
- More information/communication.
- Central fund of information of other company’s experiences.
- Honest reviews of running times, consumable costs etc. Times given are usually at best in ideal conditions and not average workloads. Have yet to meet anyone who gets the optimum out of new equipment.
- How other printers employ their products.
- Detailed knowledge and information of new sectors.
- If they think global.
- Life expectancy of inkjet heads, cost of replacement, cost of inks.
- More benefits, less features.
- Access to a crystal ball.
- Understanding exactly what is in the market and how that fits with the investment we need.

## QUESTION

How clear are the vendors and suppliers of kit/services across performance and lifetime cost information when discussing their offer?



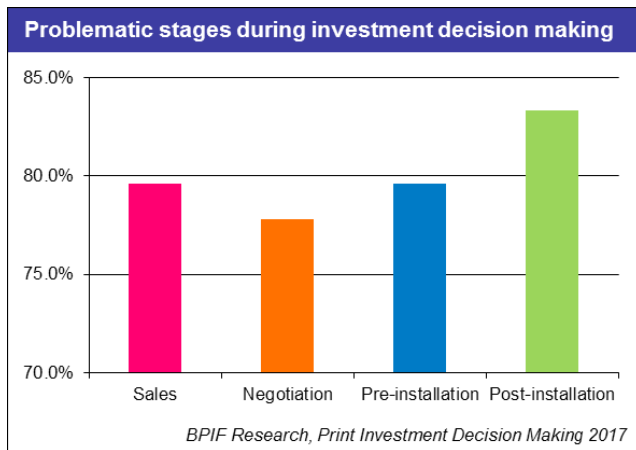
## COMMENTS

- But their logic has lots of flaws in it too.
- I never believe them – and have been proven to be correct – but that’s “selling” or “over selling” for you.
- Most manufacturers appear to operate a smoke and mirrors sales technique. I am always relieved to see all my fingers after shaking on a deal.

- Performance is always over egged.
- This information is NEVER offered and it is always a “surprise” to vendors when I insist on finding out total cost of ownership figures.
- Some are selling there and then and not looking at lifetime costs you may have to work out yourself.
- Again you check and try to tie these into service level agreements related to expectations.
- If product is new to market, lack of development time and real time experience in the field. Potentially poor engineering response.
- Investment values in the industry are quite large, showing lifetime/longevity is essential.
- Kit does not always meet sales representatives’ promises.
- Their priority remains... to secure their commission.
- To estimate costs of digital printing is very difficult and the total costs are hard to identify.
- It’s not something the supplier is wanting to get into.
- Once they are pushed. They have the information but not always in their interests to share unless asked.
- Our experience in field is quite good in that actual performance corresponds with manufacturer’s specification.
- You typically have to work this out yourself.
- We need to do a lot more work on some proposals than we do for others.
- Again varies by supplier.
- Depends on the product, traditional print based investments are much clearer.
- Often no information on ‘real world’ productivity. Like MPG on a car, reality often very different from official figures.
- This is dependent on the vendor/supplier; some of whom are better than others.
- Difficult to pin this information down as there are individual performance variants in play which are not accurately known at an early stage.
- Not telling the whole truth.
- Too many variables amongst the trade as a whole for the suppliers to cost in an accurate ROI. They will use a best case scenario, which is seldom achievable.
- Sometimes it is a case of them telling you what you want to hear and not the actual results obtained.

## QUESTION

What causes you the most problems when gathering information and making a decision during each of the following stages?



## COMMENTS ON SALES

- That you are not just trying to be sold a machine you don't really need.
- Changes in specifications.
- Change to a new technology or loss of contract.
- Lack of a collaborative approach. Lack of openness. If you don't ask a specific question: it's your fault.
- Too pushy to close not asking when you want to make the change.
- Dis-information.
- It is easy to buy a good story – the competitive edge, enhanced ROI, quality. The promise of profitable work.
- Separating fact from fiction by salesmen on commission.
- Suppliers identifying our needs with the correct kit.
- Getting viable comparisons.
- Customers don't know what is available so don't know what they want and cannot provide forecasts.
- Accurate information.
- Lack of clarity.
- By far the hardest part of the investment process. In commercial print we find it very hard to budget let alone plan turnover for an investment. On the publishing side this is easier as most print is under contract.
- Sales speak / sales people being economical with the truth.
- Accuracy of forecasts and unstable business sector performance, potential group buy outs.
- Reasonably OK with this in that we have identified our needs already so are pretty much self-selling.
- Salesperson follow-up.
- Finding enough honest existing users to be honest about performance.
- Time to evaluate all available options across different vendors and carry out production tests.
- Getting all the facts and making sure the recommendations meet the requirement.

- Getting written confirmation of suppliers 'sales patter'.
- Being informed of all options.
- They want to sell so give a very rosy picture.
- Finding out requirements in new markets.
- False claims & promises.
- Likely life of the press.
- Most suppliers are very clear and do not over promise. We tend to use suppliers who fit this group.
- Simply not receiving accurate information from the supplier.
- The market is very volatile at the moment and sales projections aren't very accurate.
- Pressure to buy.
- Overselling.
- Precise ongoing and running costs and lifetime.
- Price.
- Sorting out hype from reality.
- Forecasting. You never really know, last year's data can no longer be relied upon.
- Unpredictability.

## COMMENTS ON NEGOTIATION

- That you are getting the best deal from the supplier.
- Not enough time or choice.
- Lack of real market price knowledge.
- Incompetently written contracts that vendors insist are not changeable (and finally are).
- Usually take time to come back with offering.
- Small print.
- Finding the correct level but depends on items – if completely new supplier identifies the value to the customer and then negotiates based on value.
- Getting to the correct price, too much 'show offer' 'end of month/quarter' influence.
- Obtaining competitive prices without lots of negotiation.
- Getting positive suggestions to cost reductions.
- I quite enjoy this stage; probably getting a standard to measure the competing products.
- Excluded elements in the price.
- Hidden costs.
- "We'll beat any other offer" instead of "Here's our best offer".
- Visibility of competitors buying rates.
- Getting the best deal/features can be difficult as sometimes there is no benchmark as to what to pay (except 'list price').
- Depends on where you are in economic cycle.
- Lack of empowerment of the negotiator.
- Lack of accurate information.
- Know what you need to pay to make it work.
- Extended prevarication to try to wear you down.
- Expectations can be exaggerated and over-emphasised.

- Making sure that all extras are included. Sometimes hidden features that are needed are not included.
- Getting fair information from the customers.
- Having full information.
- Service agreement, parts to be covered.
- A weak £ and an uncertain economy means that suppliers are holding firm on pricing.
- Interest and forex rates.
- Not really having a benchmark comparison on some items that are bought.
- Price/exchange rate.
- Gaining a full understanding of exactly what is included and what is not.
- Understanding all the T&Cs.
- Macro environment changes.

## COMMENTS ON PRE-INSTALLATION

- Clear and precise pre-install specifications.
- Things that we didn't identify or anticipate (floor not strong enough, not enough space etc).
- Last minute details, lack of understanding that major electrical works can't be done without forward planning.
- Surveys unrealistic space requirements.
- Power supply and other details.
- Site survey. An engineer making sure that everything is thought out before install.
- Ensuring we have covered all possible problem areas.
- Getting accurate information of machine requirements. Electrical supply etc.
- Shortage of reliable and competitive providers.
- Not all extras agreed being provided in the final contract.
- Validation trial commitments & deadlines in installation time frames.
- With our new press, we felt that floor requirements has been over specified (based up previous experience) that could have led to expenditure far above that necessary.
- Work-flow planning.
- Lack of accurate information.
- Too casual; very centred on their own needs.
- With digital kit, a decent site survey prior to installation.
- Over the top requirements for electrical, site and environmental conditions quoted just to cover the supplier's back.
- Understanding our own requirements and what works for us – and time.
- Access to the desired location within the factory.
- Losing capacity on the run up to changes.
- Software and innovation is key.
- Confirming dates/timings. Trust in the supplier to perform, and trusting we won't have any downtime.
- Loan from finance institutions – lifespan of the press against financial terms.
- Problems are alleviating by a rigorous pre-planning phase with the supplier.

- Timing.
- Ensuring that everything is in place and ready for installation.
- Training and also installation.
- Development time/delays.

## COMMENTS ON POST-INSTALLATION

- That the investment proves successful and have full support of vendor if any problems.
- Normal teething problems.
- Performance.
- Poor training. Poor support.
- Lack of aftercare.
- Back up and service.
- Presence of engineer/trainer on site for a week running actual live work.
- We have instances of poor post installation support – this rules out further relationships generally.
- More training required after a few weeks.
- Servicing and support.
- Finalising the last few niggles never seems to be easy once the sale is complete.
- Warranty reliability.
- Speed of reaching expected performance levels.
- After the investment is sold is always a keen test of a supplier – do they deliver what they say. We always try to structure deals to not pay a large chunk of the fee until the investment is operational and we are happy with it.
- Engineers contradicting the sales people.
- Training and standard operating procedures. Many are unprofessional and don't apply basic best manufacturing practice.
- Service commitments.
- Integration with the rest of MIS/processes.
- Long drawn out process of completing snagging lists and performance criteria.
- Total absence of sales staff.
- Any modifications are charged at top whack.
- Make sure the vendor stays close during the settling down period and react quickly to any issues.
- Proving that the undertakings given by sales people were actually given.
- Lack of adequate training.
- If supplier is popular there can sometimes be delay in call out and resolving teething issues.
- Getting up to speed with new equipment.
- Problems, issues that need rectifying in order to be working most efficiently.
- We do expect a settling period – with supplier back up – problems are minimised.
- Snag lists being resolved.
- Ensuring that all the new features are being used to enhance productivity.
- Little help from suppliers embedding the new technology throughout the business.
- Continuous improvement objectives, sometimes to exceed manufacturer/supplier spec tolerance.

## QUESTION

How could vendors and suppliers of solutions offer a more professional and supportive service, pre-installation and post-installation?

## COMMENTS

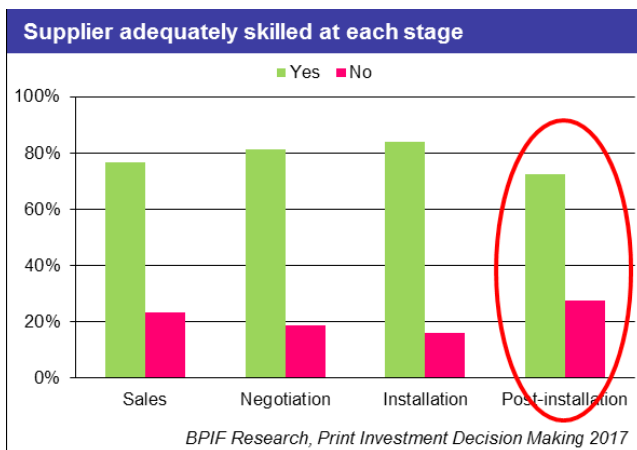
- Understand that we work in a customer responsive driven industry.
- Have a thorough check list of issues they have had over the years and run through these with you (some do).
- Support and back up.
- Discuss and agree an expectation plan at the outset, with a retention of (say) 5% of the value. Regular review meetings until all expectations have been met and retention released.
- Be advised of pros and cons of each and every bit of equipment in comparison to their full range.
- Longer after sales service, with additional training every 3-6 months.
- Proactively maintain and support installations.
- A sign-off process to cover each step of the pre and post installation.
- As ever, it's down to certain key individuals.
- Constructive, clear, accurate notification of requirements. Sensible level of post commission support.
- Deliver accurate performance estimates for each machine/task sample so we can compare against our own expectations.
- A realistic survey and sign-off at each stage so that expectations and responsibilities are clear.
- Clear and unambiguous functional specification and customer liaison.
- Listen to our questions and answer them.
- The majority of suppliers we have worked with seem to have excellent pre-install service, post install generally ok, some of the training can be top notch, others less so. If they can come up with a project plan, agree the critical path with us and then deliver against that we are happy.
- This is more of a print based question, our latest investment for new servers was successful down to the research we made and the provider we choose.
- Training should be focused on the level of the business and operators abilities.
- Pre-installation is always important with digital kit with the production environment being of paramount importance. The biggest issue we always seem to face is a consistent, open and honest relationship when it comes to service.
- Be more straightforward – but that's never going to happen.
- Time – Kiss (Keep it simple).
- No specific issues come to mind, but an awareness that once we have committed to purchase, we are on our own with only minimal future supplier support.
- Book time to visit ahead of installation to iron out any problems pre visit. Have time allocated after installation to ensure that any problems can be ironed out quickly.
- Spend more time on site seeing how the individual company works and operates.
- Help with finance. Help financial institutions understand that digital presses are here to stay and they are an integral way of print life.
- Stick to agreed schedules.
- Understand each client's requirements and current staff abilities.



- Most are good but some could plan better.
- Support the business as a whole not just in production but sales, pre-sales, technical, production, estimators, account managers.
- Produce a viable business case from our point of view, then ensure the case is delivered/exceeded.

## QUESTION

Do suppliers have the right levels of skills, qualifications and knowledge at each of the following stages?



## COMMENTS

- Suppliers need to address their mental attitude.
- They are well trained but very rarely put themselves in “our shoes” or try to understand our dilemmas.
- I think post-installation is the most important – training and development to really get the best from the equipment, including knowledge share with other users.
- Sometimes they do, sometimes they don't.
- Some do e.g. Konica, others sell and run.
- Dependent on the experience and seniority of the sales team.
- Understanding the products is generally done well with sales. However they are often negotiating without authority.
- Crunching figures for digital equipment when negotiating a sliding scale between the lease purchase monthly instalments and any ‘click’ charge is like trying to corner a wild animal.
- Sales and negotiations depends on supplier.
- Suppliers vary greatly.
- Usually there is someone in the organisation that has the knowledge. You just need to make sure he/ she is looking after you.
- Our industry is appallingly badly served by machinery suppliers. They are expensive, unreliable and largely incompetent.
- This is supplier-dependent but generally yes.
- Each department skews their answers to suit their own requirements, not an overall benefit to the purchaser.
- Generally, where there is goodwill, most niggles can be overcome.

- I have put yes for all but this really does depend on each supplier and therefore not always yes.
- Every supplier will score differently. In general they do in our experience.
- Not many sales people have run the range of machines. Demonstrators would be more useful/honest.
- Don't normally deal with one person as the supplier expert will be available at the different stages of interest.
- Generally left hand and right hand issues!
- Sales people are good at job. However they do not always understand the needs or extras.
- Installers of equipment usually know what they are doing. However, if the product is new the support team are not as up to date as the installers.
- I would say on the whole yes but with room for improvement.
- It's a partnership. It's all about working together and being honest and upfront.
- Depends on who you work with and what is expected, e.g. post installation is good from a machinery perspective not from a business-wide function.
- Difficult to generalise, but usually we end up with what we want. However, when we don't it's a serious issue. I have major examples.

# Adopting the right strategy – under uncertainty

A framework for determining the level of uncertainty surrounding strategic decisions and for tailoring strategy to that uncertainty can be found in 'Strategy under Uncertainty', an article in the Harvard Business review, published by Hugh Courtney, Patrick Viguerie and Jane Kitkland. They identified four prime levels of uncertainty.

## Four levels of uncertainty

Available strategically relevant information tends to fall into two categories:

- It is often possible to identify clear trends, such as market demographics, that can help define potential demand for a company's future products or services.
- If the right analyses are performed, many factors that are currently unknown to a company's management are in fact knowable.

The uncertainty that remains after the best possible analysis has been undertaken is referred to as residual uncertainty. The residual uncertainty facing most strategic-decision makers can fall into one of four broad levels.

### Level one: A clear enough future

The residual uncertainty is irrelevant to making strategic decisions at level one, so managers can develop a single forecast that is a sufficiently precise basis for their strategies. To help generate this usefully precise prediction of the future, managers can use the standard strategy tool kit: market research, analyses of competitors' costs and capacity, value chain analysis, Michael Porter's five forces framework, and so on. A discounted cashflow model that incorporates those predictions can then be used to determine the value of alternative strategies.

In predictable business environments, most companies are adapters. Analysis is designed to predict an industry's future landscape, and strategy involves making positioning choices about where and how to compete. When the underlying analysis is sound, such strategies by definition consist of a series of no-regret moves. Where do you fit here? It does not have to be boring and it can be a disrupting change that gains you competitive advantage.

### Level two: Alternative futures

The future can be described as one of a few discrete scenarios at level two. Analysis can't identify which outcome will actually come to pass, though it may help establish probabilities. Most important, some, if not all, elements of the strategy would change if the outcome were predictable. In classic level two situations, the possible outcomes are discrete and clear but hard to predict.

Understanding of how the key residual uncertainties might play out. Each scenario may require a different valuation model. Getting information that helps establish the relative probabilities of the alternative outcomes should be a high priority.

After establishing an appropriate valuation model for and determining the probability of each possible outcome, the risks and returns of alternative strategies can be evaluated with a classic decision analysis

framework. Particular attention should be paid to the likely paths the industry might take to reach the alternative futures, so that the company can determine which possible trigger points to monitor closely.

### **Level three: A range of futures**

A range of potential futures can be identified at this level with a limited number of key variables defining that range. As in level two, some, and possibly all, elements of the strategy would change if the outcome were predictable. Companies in emerging industries or entering new geographic markets often face level three uncertainties.

The analysis in level three is similar to that in level two: a set of scenarios describing alternative future outcomes must be identified, and analysis should focus on the trigger events indicating that the market is moving toward one or another scenario. Developing a meaningful set of scenarios, however, is less straightforward in level three.

Scenarios that describe the extreme points in the range of possible outcomes are often relatively easy to develop but rarely provide much concrete guidance for current strategic decisions. Since there are no other natural discrete scenarios in level three, deciding which possible outcomes should be fully developed into alternative scenarios is a real art. But there are a few general rules:

- Develop only a limited number of alternative scenarios – the complexity of juggling more than four or five tends to hinder decision making.
- Avoid developing redundant scenarios that have no unique implications for strategic decision making.
- Develop a set of scenarios that collectively account for the probable range of future outcomes and not necessarily the entire possible range. Establishing the range of scenarios should allow managers to decide how robust their strategies are, to identify likely winners and losers, and to determine, at least roughly, the risk of following status quo strategies.

### **Level four: True ambiguity**

A number of dimensions of uncertainty interact to create an environment that is virtually impossible to predict at level four. In contrast to level three situations, it is impossible to identify a range of potential outcomes, let alone scenarios within a range. It might not even be possible to identify, much less predict, all the relevant variables that will define the future.

Level four situations are quite rare, and they tend to migrate toward one of the others over time. Nevertheless, they do exist: a telecommunications company deciding where and how to compete in the emerging consumer multimedia market for example. The company will confront a number of uncertainties concerning technology, demand, and relations between hardware and content providers. All of these uncertainties may interact in ways so unpredictable that no plausible range of scenarios can be identified. Brexit is now a factor here for some?

Situation analysis at level four is highly qualitative. It is important to avoid the urge to throw up your hands and act purely on instinct. Instead, managers need to catalogue systematically what they know and what it is possible to know. Even if it is impossible to develop a meaningful set of probable, or even possible, outcomes, managers can gain a valuable strategic perspective.

A company can assume a number of strategic postures vis-à-vis uncertainty, and a number of actions of actions can be used to implement that strategy.

**STRATEGIC POSTURE** Define the intent relative to current and future state of the industry.

**SHAPING** Seek a new structure for their industry of their own choice. Very disruptive and opportunistic online B2C print is an example here.

**ADAPTING** They take things as they are and adapt accordingly or react accordingly.

**RESERVING THE RIGHT TO PLAY** Do things incrementally in the best possible way. Through superior information, cost structures or relations between customers and suppliers that allows the company to wait until the environment becomes less uncertain before formulating a strategy.

## **Again, where do you feel you sit in all of this – if any?**

**A PORTFOLIO OF ACTIONS** Big bets, options, and no-regrets moves. A posture is not a complete strategy; it clarifies strategic intent but not the actions required to fulfil that intent. Three types of moves are especially relevant to implementing strategy under conditions of uncertainty.

**BIG BETS** Large commitments such as major capital investments or acquisitions that will produce large pay-offs in some scenarios and large losses in others. Not surprisingly, shaping strategies usually involve big bets; adapting and reserving the right to play, do not.

Options are designed to secure the big pay-offs of the best case scenarios while minimising losses in the worst case ones; classic examples include conducting pilot trials before the full scale introduction of a new product, entering into limited joint ventures for distribution to minimise the risk of breaking into new markets, and licensing an alternative technology in case it proves to be superior to a current alternative.

Companies reserving the right to play rely heavily on options, though shapers use them as well, either to shape an emerging but uncertain market as an early mover or to hedge big bets.

Our sector is undergoing rapid structural and strategic change, change to supply and demand, changes to the supply chain and accelerated pace of technology integration and convergence playing havoc or providing opportunity. As ever it depends on where you sit or what's your perspective is.

Some see a clear enough future, some a combination of alternate futures and a range of futures. Many don't want to see anything but ambiguity and these if they don't adapt and change will suffer the most.

68% of respondents answered yes to this question: 'Do you undertake any future risk scenario planning when looking at the benefits of investment?'

# Decision making in an environment of perpetual uncertainty

Uncertainty punishes those who do not plan effectively, or create enough flexibility and do not act decisively to make positive change for the business. As a sector we are used to uncertainty and it is worth looking at how other sectors manage levels of uncertainty around decision making.

Any capital investment decision is based on the benefit it provides in the future both perceived and tangible. Will the benefit be large enough to justify it? Getting it right means sustainability, growth, better margins and business momentum. Getting it wrong can mean enduring more difficult times or compromising your business. In an industry defined by much strategic and structural change and new technology developments, getting it right is more complex and more perturbing and more time consuming.

## An academic's viewpoint

Paul Saffo is a forecaster with much experience exploring the dynamics of large scale, long term change and his central belief is that forecasting must embrace uncertainty. He is the managing director of Foresight at Discern Analytics, and teaches at Stanford University where he is also a visiting scholar in the Stanford Media X research network.

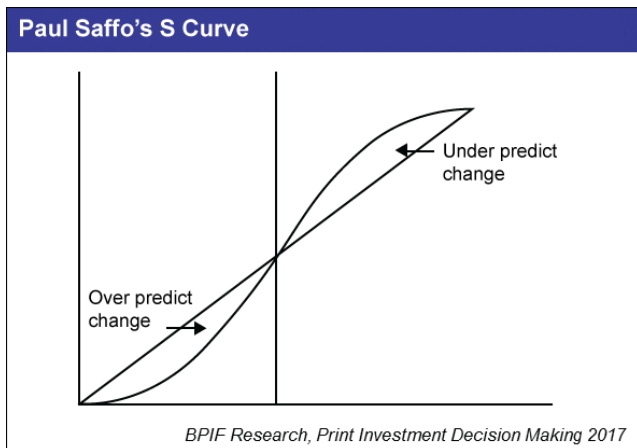
**“Never mistake a clear view for a short distance.”**

*Paul Saffo*

Paul Saffo's rules for effective forecasting involve the laws of logic:

- Know when not to make a forecast and take on-board the uncertainties that prevail at the time. There are many types of uncertainty and its worth plotting them and defining their impact and relative importance to your decision making outcomes.
- What are the sources of uncertainty, technology changes, customers, staff retention etc?
- What can be plotted with some certainty?
- What events might happen or are more likely to occur?
- Map the impact.
- What options and responses can we activate if we need to or need to undertake as part of the change?
- Factors that might affect you will have similarities with others but some will be unique to you.
- Uncertainty is what we have become used to, master it.

Overnight successes come out of predicting failure. Change does not usually follow a straight line. Saffo says it follows an S curve. Earlier on in the S curve of events change starts slowly and incrementally then explodes and tapers off again. But if you don't manage and pay attention all away along the timescale, you will get a surprise!



**LOOK BACK TWICE AS FAR AS FORWARD** The change you have lived through in the last ten years is a predictor of what you are likely to experience in the next five. The cycle of change has been condensed over the past two years as economic pressures have bitten.

**HUNT FOR THE EARLY SYMPTOM OR LEADING INDICATOR** An observation made by William Gibson in 'The Science of Science Fiction' stated that the "future is already here, it's just unevenly distributed". Some people seem to have the knack of identifying the leading indicator. But there is a lot of good observational activity and information you can tap into. Vendors have market analysis and market information in abundance, just ask their marketing personnel directly.

**BE INDIFFERENT** Don't confuse your desire for a particular outcome with its likelihood. That is also a good reason to get impartial and independent and take objective advice.

**TELL A STORY OR DRAW A ROUTE MAP** Trying to package your insights into a story or scenario also helps reveal gaps, identify risks, and the opportunities present in the events you are trying to understand. Don't forget to look at the Wildcard event also. Big 'what if' questions are something we have learned from recent events, especially when we see blue chip companies going Boom!

**PROVE YOURSELF WRONG** The essential wisdom of the scientist is understand and resist the natural human tendencies to believe. Be careful not to rely on a single element of strong information. Look for lots of pieces of weak information that collectively reinforce your insights. Your search for strong information should be for that one piece of evidence that proves you wrong. Look for the one thing that will make you look stupid if someone else brings it up.

Uncertainty or lack of perfect knowledge manifests itself in many ways:

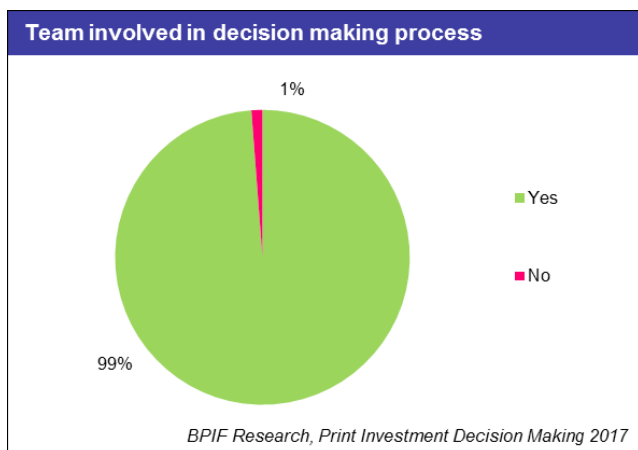
- Who do I trust?
- What is the range of uncertain issues – customers, revenues, appropriate technology etc?
- Where can I find the appropriate information to support my own sources and information network?
- How have others fared when taking and making such a decision?
- Have we mapped out the full extent of the journey and outcomes that we might face?

You can learn a lot from others experience and it is worth asking on a wider basis and also getting more information from your supplier, not just examples on the European mainland. But remember one size does not fit all and you will have some unique aspects to your particular business model and markets.

# Decision making and evaluation

## QUESTION

Do you involve other members of your team in the decision making process?



## COMMENTS

- Relevant employees always consulted.
- Operators, finance, sales, IT, procurement, Exec and holdings board. All have to "sign off" the capex process.
- Opinion is sought with regard suitability for our customer base.
- Yes always involve sales, finance, ops and maintenance in decisions.
- Production and sales are involved
- Product development and technical evaluation.
- Our operator's test kit at suppliers and supply feedback.
- I find it helps them take ownership of investment.
- Always a team decision. Ownership by all.
- Originations department supervisor, press room foreman.
- We believe the operators of any system or machine will ultimately know how to get the best out of an investment so need to be included.
- I will always involve the manager of the area along with the most experienced operators to review the machinery.
- Fellow directors.
- The directors will always be involved. Depending upon the scale of the investment and the type we may involve managers and operators also.
- We have access to procurement at APS who have a professional team of buyers and production.
- FD, MD, ops director, sales managers and key technical staff.
- We decision makers we cannot know everything plus we need to get buy in from the team using the kit.
- They are going to use it so must be involved.
- Production manager for his input on whether it will benefit his team.
- Business unit heads generally decide the direction of investment and then pull together a project team to explore the market and come to a decision.



- Most investments are in the new media sector where we have a strong team.
- Senior management team and production management and operators when appropriate.
- All management and department managers.
- It is key to get managers involved at the early stages to help get spec correct and they will normally have questions I wouldn't have thought of including installation/site prep etc.
- Our relevant experts are brought into review the options, and have a say in the decision.
- It is always done within a group discussion at nearly all stages.
- Pooled knowledge from the whole company helps.
- Discussion with management team of our markets, potential markets, portfolio of products and new products offered by a new press.
- We involve people from sales and marketing as well as operational staff.
- Board level, after full ROI.
- I put together a cross departmental team including ops, sales and commercial to review each purchasing decision.
- I discuss with staff informally what I plan to do and get their feedback and let them raise potential issues.
- Only directors mostly. But do consult staff about the idea of the equipment, although not detail of finances etc.
- I don't run a press. I need input.

## QUESTION

How do you verify the productivity and performance criteria set out by the seller?

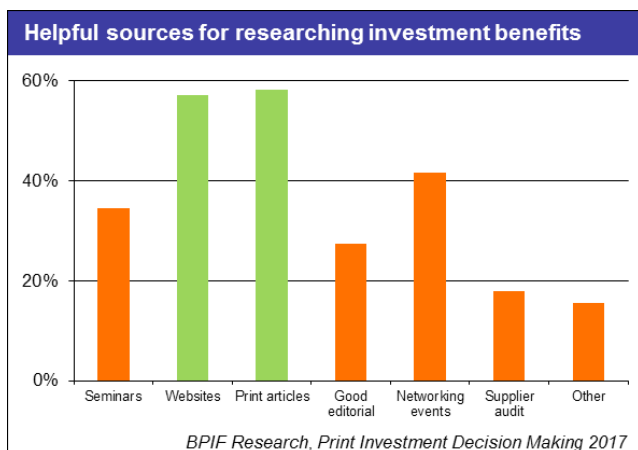
## COMMENTS

- Measure it against actual performance.
- Pre-installation trials.
- Phone up people that have the kit, visit them, evaluate the responses.
- I have no set plan for this, but report back issues raised in use and press for resolution.
- Talk to users of the types of equipment through site visit and own network of contacts Incorporate the major points into the contract.
- You can't always.
- With difficulty.
- The kit either works or it doesn't.
- We don't as they never ask.
- I provide information to all.
- Research and direct questions, tied into SLAs.
- Case studies, visits to other users – hopefully running a live job with known challenges.
- Usually case study or talking to a user prior to final decisions.
- For digital gear we travel to their showroom or to someone who has installed same equipment and get them to run 5 or 6 representative jobs. For litho press, that involves second hand equipment and generally means keeping a watchful eye for a keen price when we know what we are looking for in the first place. For example, this year we installed a four-colour A2 litho press at a cost of £18,000 after a tip off. Last year cheapest available A2 second hand four-colour press was £65,000 which we could not afford.

- As best as is possible by test as rarely can figures be relied upon.
- Carry out testing on our own work, this highlights any concerns with stock selection etc.
- Pre- and post-installation sign off.
- Trials on live work. Testing make-ready/run speeds. For software/MIS this is much harder. Contractually it is harder to tie a software supplier to agree deliverables/cost savings.
- Talk to current users. Visit. Do technical evaluations.
- Benchmark our own work on production trial before we buy, generally.
- MIS is accurate and direct from machinery so post implementation audit is straight forward.
- Acceptance test to the defined criteria.
- Ongoing ROI and ROCE measurement.
- Checking the output.
- We have a sign off procedure on most major installations that is agreed with supplier and payment is generally subject to post installation performance against this.
- Complex time consuming logging of call outs.
- Production testing in house whenever possible.
- Detailed pre-sales testing using our own files and paper. On occasions we have tested the equipment on site prior to final purchase.
- Through our shop floor data collection and ensuring they know our expectations from the outset regarding training and performance from our staff as well as their kit.
- Not sufficiently.
- In-house monitoring.
- Stringent live tests on machine.
- SLA and OEEs.
- Visit to supplier showroom and hands on demonstration.
- We run machine tests prior to purchase when possible and talk to other users.
- We do not have a clear strategy in place but rely on our experience to decide as we use the product.

## QUESTION

Which of the following are the most helpful to you when attempting to gather and understand the benefits of technology and potential new investment?

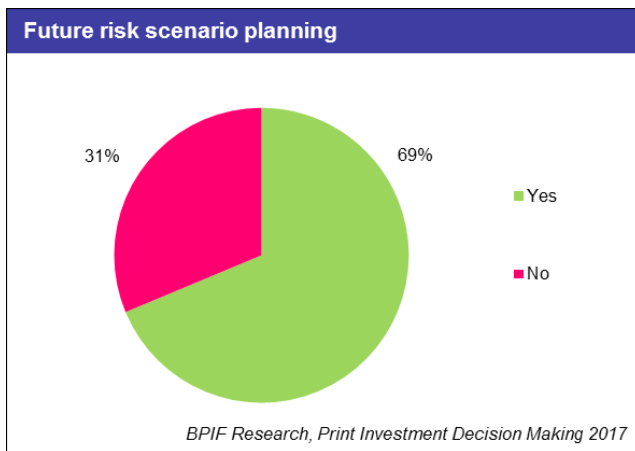


## COMMENTS

- Benchmarking our companies.
- There are no good print articles and editorial out there. If there were, that would be useful.
- Exhibitions/site visits.
- Demonstrations.
- Peruse trade press etc for notices of auctions for firms that have ceased trading.
- Contacts in the industry.
- Supplier/trade event such as Drupa.
- Independent audit on area under focus.
- Supplier open days.
- Visiting supplier's 'head office'.
- Visit to suppliers and trade shows to look at the equipment in detail.
- Site visits of existing users (unbiased).

## QUESTION

Do you undertake any future risk scenario planning when looking at the benefits of investment?



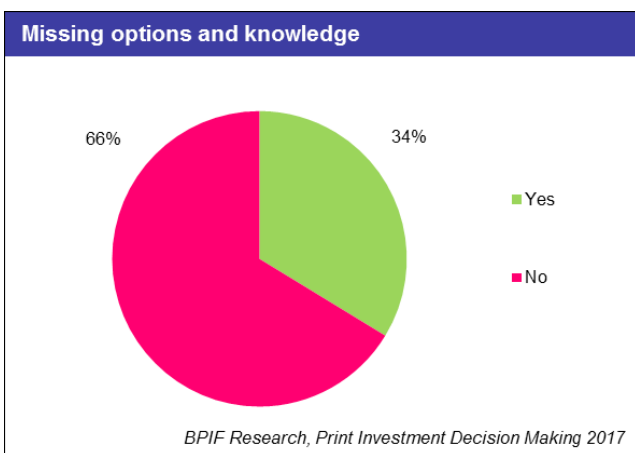
## COMMENTS

- Always look at the longevity of a product.
- Ask all the appropriate departments to have a view and express it with clarity and measurable facts
- It's in ISO 9001 2015. We expect teething problems.
- We evaluate the what-if scenario.
- I carry out a risk assessment to cover any failings.
- You have to.
- Generally rate of change is so fast the investment is not as long term as it used to be.
- Obviously you need to see any possible downsides or negative effects that could affect your spend.
- Not consciously looking at risk, just the downside of not making the investment and the benefits it can provide if you do make the investment.
- Reliability and redundancy are key.

- It will no doubt be considered but perhaps not documented formally.
- Always do sensitivity analysis for major capex items.
- Five-year business plan.
- Yes especially 'mean time before failure' when going from duplicated resource to single source (two presses to one for example).
- Part of the overall capex plan will be a review of business risks affecting payback of investment.
- Not sure. We do evaluate if a technology might be superseded too quickly for its cost. But not in a structured way.
- Attempt to plan for the known unknowns.
- Carry out a 'what if' scenario within the ROI to understand the critical break-even point within acceptable time frame.
- Lots of 'what-ifs'.
- We review any changes to customer base, technology, political and demographic changes that will affect the investment along with how long it will take to get payback from investment.
- Investments should not be viable ONLY on the expectation of future growth.
- We always look at the possibility of what if scenarios and try and take these into account.
- Costs of payback, period of time. Lifespan of the press, lifespan of inkjet heads.
- Nothing in too much depth but I have to feel comfortable in what we are purchasing from an affordability point of view otherwise I will not proceed.
- Part of ISO 9001-2015.

## QUESTION

Do you often feel you are missing all the options and knowledge about benefits of available equipment and solutions when you are making a decision?



## COMMENTS

- Not being sure I have full information will stop me proceeding.
- I am often worried I missing other options.
- Research well.
- This is because we consider these spends carefully and double check any assumptions or areas of doubt.

- Use Drupa and exhibitions to review what is available in the market.
- Much more on software than hardware.
- Not really, it's generally the niggles.
- Yes, leading up to the decision but not upon making it.
- Almost certainly as we will short list one or two suppliers as we don't have time to look at every option available. We also try and work with strategic partners which can limit options.
- Sometimes, because we are in a smaller sector of the industry the information requires more research.
- Sometimes not sure we are aware of all the options. We like editorial reviews from users alongside other optional machines with their specs.
- So much to review on a relatively occasional basis.
- If you do homework correctly then no. If we are unsure we will not make the investment.
- We will continue our research until satisfied we have all necessary info.
- We always look into investment very carefully before going ahead with it.
- Normally no, but perhaps occasionally, dependent on circumstances.
- As long as it can do what we want it to do, any extra features are a pleasant addition.
- All products now are hugely complex.
- Often have to dig deeper with own research and develop products to suit needs.
- Impossible to cover ALL options!

## QUESTION

How do you assess the reputation of a company or service prior to purchase if you have not dealt with them before?

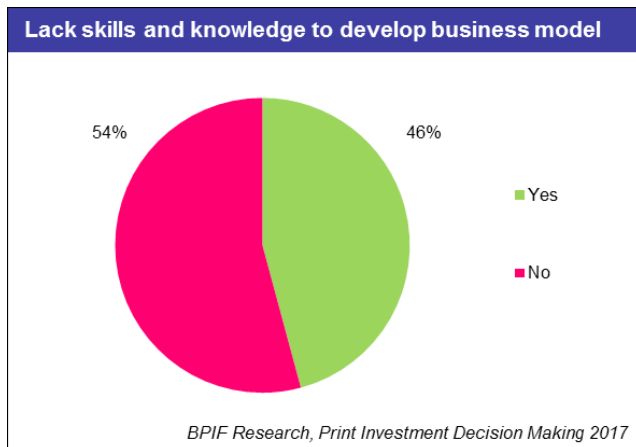
## COMMENTS

- Recommendation or demonstration of product.
- Ask for references and speak to their customers.
- Lots of investigation, mainly with other customers of theirs.
- Ask for feedback from other users.
- We take references.
- Referees and credit checks.
- References, site visit.
- Profile/staff/approach.
- Industry contacts plus long decision making process.
- Ask for feedback from their existing customer base.
- Through a general feeling of general communication and reviewing their other customers through networking.
- Research, meeting and visiting along with other customers feedback.
- Credit check. Chat forums. Networking events. Intuition...
- Research, talking to their clients, looking at their financial strength.
- Talk to their existing customers and check their financial strength.
- Speak to existing customers and ask about in my network of contacts.

- Ask questions to industry colleagues confidentiality .
- Background enquiries. A trade body could be very helpful here.
- Field visits.
- Case studies/networking/meeting current customers/industry knowledge.
- Testimonials and referrals from other customers.
- Speak with our partner company for their advice and experiences.
- Generally, we do not purchase from unknown suppliers.
- Word of mouth reputation.
- By asking others, such as BPIF.
- We normally visit sites where this equipment is installed to ascertain their thoughts on the service and reliability of the product in question.
- Through our network of competitor contacts.
- Appraising other installations they have recently carried out.
- Trade checks. Discussion with network and trade contacts when possible discussion with BPIF.
- Try to garner general industry opinion.
- We rarely purchase from suppliers we have not worked with before. If we do it will come from recommendation and introduction.
- We ask who else they have supplied, how many years in business, look at their company accounts and depending on type of investment, visit the plant and meet senior people. You tend to get a feeling if they are the right partner for you.
- Most important, in not beta testing, then see it works my under production conditions. Get your team involved at an early stage.
- Visit the company, look at products, future investment plans, service plan, machines sold already.
- Although it is rare that we have a new supplier, when we do we look at their customers and the reputation they have built with existing customers, even asking for customers we can contact.
- Must have good reputation.
- Generally we know them through the trade and are aware of our likely major suppliers. We will have visited them at exhibitions or at their premises for demonstrations.
- Credit check and general web research.
- Information from other companies/sales reps who deal with other companies.
- Investigate company thoroughly in all aspects: review, visit, customers, others comments.
- Financial stability, history, people, plans.

## QUESTION

When looking at your current business model, and where you want to take and develop it, do you feel you lack the right skills and knowledge across your team to fully capitalise on opportunities?



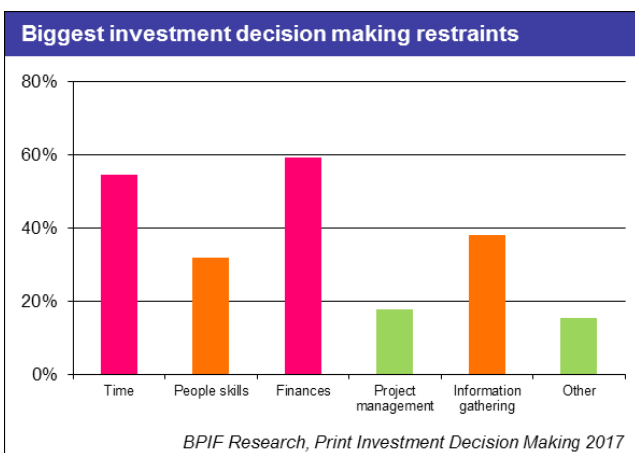
## COMMENTS ON SKILLS THAT ARE LACKING

- Sales, marketing, web development, web to print development.
- Have most skills within the team but would be beneficial to have an outsiders view when undertaking major investment decisions.
- I have an aged print production team.
- Aggressive sales ability to fully exploit the newly available benefits.
- Need some funds to install digital roll label system. Difficult after losing a major client who moved head office to London. Now close to realising this after a year or so stabilising matters.
- We have an excellent non-executive director who is brilliant at financial modelling.
- IT and cloud based skills.
- We are investing in more apprentices with engineering backgrounds over the next three years to help future proof our business.
- There is a general shortage of qualified staff in the print industry.
- We are a 100-year-old business forms printer transforming into labels, transactional mail, integrated forms and technology services. While we have good people, many will only know the forms market so we don't have the in depth experience in the new sectors we are investing in.
- Yes and no... crystal ball.
- Software skills and marketing.
- In order to develop into a different market and product we would require a completely different skill set which is more technology driven.
- With today's level of technology this is probably inevitable.
- We require additional business development.
- Depends on technology being introduced. We might need to recruit new resource or get training. If this is the case we would get some training in before investment decision made to ensure it is right for us.
- New web to print and print on demand skills joining us to fill these gaps.
- Always striving for key staff, industry struggles in innovation.

- Need better awareness of new tech and how it applies to our business.
- I feel I lack confidence in areas like cross media and online ordering in knowing what the best product is for us and then being able to implement it comfortably both from a sales and practical point of view.
- Strategic planning.
- Average age dictates we may not be as computer/media savvy as we could be.
- IT and web/social media.
- No one in business has experience of assessing capex properly, as with many SMEs.
- Improvements are always available to all areas.
- Management, technical, sales.

## QUESTION

What is your biggest restraint in making investment decisions?



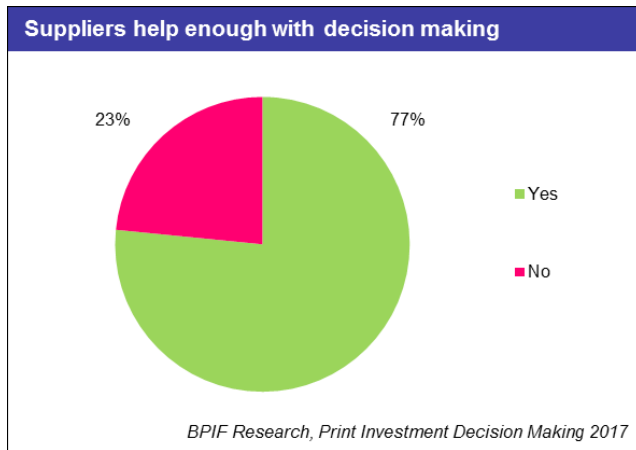
## COMMENTS: OTHER RESTRAINTS

- Physical manufacturing space.
- Uncertainty of our market.
- Access to customers who may not want to show you around or that you would believe what they say if they are strong competitors!
- Identifying the correct route to improve our business.
- Lack of a forward order book!
- Internal resources to deliver the investment.
- Ensuring that growth and expansion are matched to avoid overheating.
- We are reasonably cautious, as a policy we don't invest in anything that we can't get a return on.
- Space is a premium at the moment.
- Regular work with margins enough to make investment worthwhile.



## QUESTION

Do vendors and suppliers do enough to help decision making?



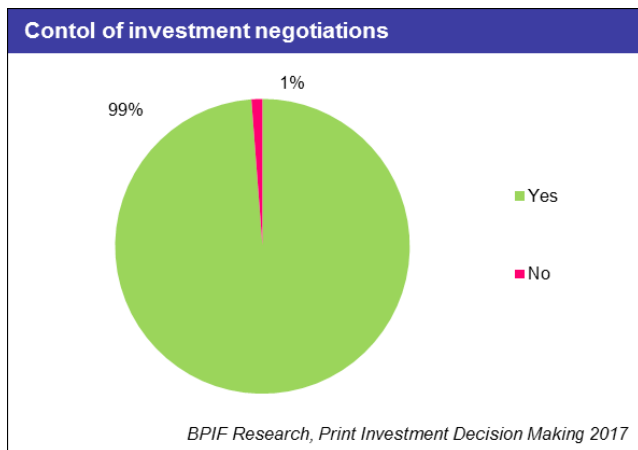
## COMMENTS

- They try!
- They just want to sell.
- They don't take enough time to understand our business needs or understand our market place and therefore offer the correct kit.
- I will keep asking for information until I am happy.
- It would be up to us to ensure we extract any information required, although those that made this easier would be at an advantage.
- You will never get unbiased opinions to compare competitors' offerings.
- The decision will ultimately always be ours. Their level of help is a direct reflection of how good their sales team is.
- Need to be totally objective.
- Timely responses, provide their competitive analysis.
- Set up open user forums with categories for each technology.
- Vendors' first priority is to chase the sale.
- Depends on the supplier.
- You usually end up with enough information about the equipment or service it is then up to you to decide if the information supplied meets your criteria.
- Suppliers will invariably have a ready answer to any questions.
- Compare competitor offerings.
- But not always – sometimes we have to quiz to get info.
- Usually takes lots of prompting though!

# Negotiations and deal making

## QUESTION

Do you feel in control of your investment negotiations process most of the time?



## QUESTION

What would help you gain more control?

## COMMENTS

- I will not go ahead until I am happy.
- Full time procurement person.
- Customers paying in 30 days and releasing the cash that is owed to all small businesses.
- Having better negotiation skills.
- Time.

## QUESTION

Other than reducing the price; what can sellers do to make the process better?

## COMMENTS

- Price realistically to start with rather than starting with an alleged discount and then negotiating.
- Stop trying to be 'me too' providers, differentiate themselves from their competitors.
- Come up with innovative responses to support their promises. For example if the machine never breaks down as stated and it's been in with one client for ten years with no issues, why is the warranty for only 12 months?
- Provide full information about the limitations of the equipment and highlight potential issues that have been experienced by other similar businesses.
- Give realistic timescales for installations.
- Understand our market place and the margins we have to work to.
- Nothing of note, I will keep asking for information until I am satisfied.
- Depends on investment – negotiation and asking for commitment to support along with stability if consumables support the investment.

- Support our ability to market the investment/product.
- Acting in a helpful manner, as you would a friend in trouble.
- Carry out a pre-assessment of the site to ensure machinery, vehicles etc are capable of installing/delivering.
- Trade in of old equipment.
- Improve support, stick to schedules, and hit performance expectations.
- Be more professional.
- Guarantee consistent performance and offer quicker repair services, down time is lost revenue and potentially customers.
- Provide a complete picture in context of all business processes including MIS integration.
- Be more transparent and have offices based in UK.
- Use the same information formats.
- The more information and successful case studies the better.
- Give real world production speeds for a selection of jobs.
- Communication.
- Warranty; guarantees on service.
- Help provide proven stats for ROI.
- Train salesmen to a higher level. This of course is generalising, some are OK.
- The sales stage is not usually the issue, it is the after sales service that is always a bugbear.
- Be open and honest.
- Better training beyond the initial installation.
- Better communication and more time on site.
- Show real savings and performance.
- Grants are key.
- Offer demonstrations days in the UK, most demos are across in Europe.
- Making us feel valued and listened to, particularly when problems arise.
- Just support us even after sign-off.
- Don't complicate anything.
- More info.
- I find buying traditional printing presses a lot more straightforward than digital print machines for example. Suppliers on the offset side have a selling price and the terms are fairly straightforward whereas digital suppliers it's sometimes smoke and mirrors with regards leases and how they are structured. Smaller capital items we tend to buy outright.
- Try to understand what we want, rather than just getting a sale.
- Provide as much data as possible and maybe give customers they've sold to contact details so we could speak to other users of the equipment etc.
- Point out all the small print so you fully understand especially digital print machines purchasing.
- Innovative funding options.
- Understand our needs and create a business case to satisfy them, then ensure its delivered OTIF.

## QUESTION

What has left you disappointed or feeling let down, following any previous investment negotiations you have been involved in?

## COMMENTS

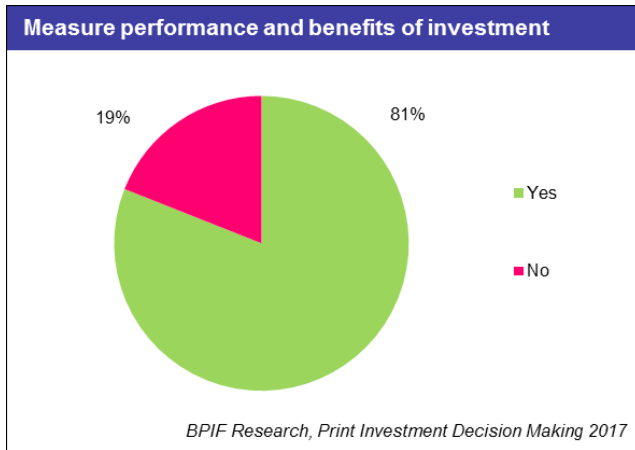
- After sales follow up/installation expertise.
- After care and sales led organisations (on commission) who say it's a support problem now.
- The performance of the equipment purchased. One dealer admitted a feature of a machine did not work in a production environment only after I had purchased the equipment and complained the feature was not accurate enough to produce saleable professional work.
- Lack of clarity about engine life on digital presses.
- Ownership of interrelated technologies in Cip3.
- No back up service when problems occur or training in the early stages of working out how the kit works.
- Starting price at the beginning of negotiations – twice the price!
- I have not been given what has been agreed.
- Lack of follow up once the install has happened and payment made.
- Too much time to get to a final sales price.
- Last minute price increase following lengthy trial process.
- Poor performance and service support following the installation.
- The lack of technical support within the suppliers business and the response time to issues.
- The kit does not live up to the promises of the supplier.
- Lack of support, delayed implementation, failure to achieve targets quoted.
- When what was sold wasn't what was delivered. We have had this experience with an MIS investment recently. We spent six months mapping our work-flow and going through this with suppliers yet many items have not yet been delivered. Also MIS's with module components cause a problem – some of the modules we needed weren't sold. In addition, MIS suppliers sell a number of training hours, not whatever hours are required to be fully operational, which is a very different idea.
- Agreed some added extras which were then not in the final contract, leading to cross words and disappointment.
- Kit that takes much longer to settle in and meet targets than expected.
- No SOPs, inconsistent training, over promising, not being honest.
- Lack of supporting performance data available to help make the decision.
- As said previously, over specified platform, no joined up thinking in process integration.
- European suppliers closing down UK offices.
- Lying.
- Reliability of machine. If you buy a top of the range machine you don't expect it to be constantly going down.
- Machinery not performing quite as well as promised and or not adequate training given.
- Lack of clarity.
- Companies not backing up undertakings given by their sales teams.
- After sales service. The impression I have is often one of get the kit in and job is done.
- Suppliers claim on equipment not being true e.g. told light fast three to five years. In fact not light fast at all.

- None recently which could be considered the fault of a potential suppliers.
- When costs are not fully disclosed at the start.
- Not getting a grant due to too much profit.
- Poor after sales support and not adhering to pre-purchase agreements.
- Being ignored, problems not being addressed.
- On one occasion we bought a piece of mailing equipment and the rep structured the lease in a slightly odd way, he left the company under a cloud and when we tried to raise an objection to how the lease was structured they wriggled out of it while admitting that the rep was not always above board. This is a one-off amongst many deals the vast majority of deals have been absolutely fine.
- Not admitting a problem exists quickly enough.
- Finding out that the equipment couldn't really do what we wanted.
- Lack of training and after sales process, small print ref annual click charge increases being far greater than RPI, so service and maintenance issues.
- When machines don't live up to promised capability.
- Lack of support, information, delays, failure to meet standards set out by the sales team.

# Post-installation review/measurement

## QUESTION

Do you measure performance and benefits of the investment?



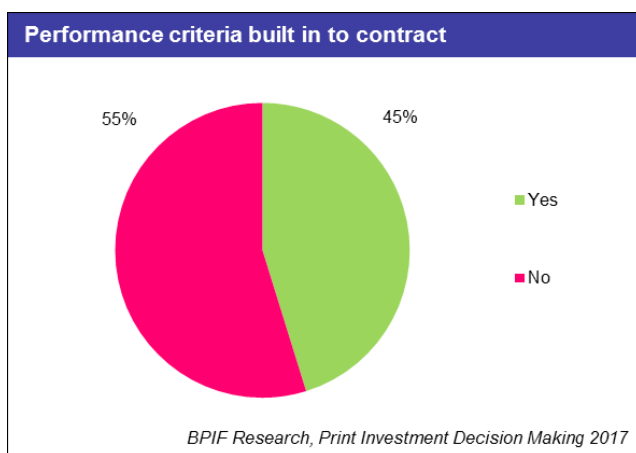
## COMMENTS

- If it doesn't improve performance it was a waste of investment.
- Normally 12 months later in a post-capex audit done by the finance team.
- Monthly sales and margin, plus service call outs.
- Where appropriate or possible.
- By measuring a reduction in overhead costs and increase in profits.
- For example I look at production rates against new machines and old.
- We set KPIs against manufacturers claims.
- Size of business allows us to analyse on a daily basis.
- We do some measurement but not to a massive level.
- Loose measurement of quality and speed of output. Customers tend to notice the quality benefit as well.
- Not as much as I'd like. Machine investments are much easier to review as costs/time are charged to jobs so we can do a direct comparison. Software is much harder. Generally, any man hours we are due to save in the business case do not result in less staff so the saving in hard cash often isn't seen. How those staff are utilised could may well improve but that is harder to measure.
- TMS time management recording.
- Absolutely. The equipment has to perform to specification in order to make the pay backs planned.
- Speed of the network after the most recent investment.
- Cost control actual v plan.
- ROI paper is always accompanied with the decision.
- SFDC systems which also provide real time KPIs.
- If the equipment service does not save time and money or give you new skills, then it is probably not worth the investment.
- Only overall business improvement rather than by each single investment.
- We always measure how well each investment item performs against current machinery.
- Running speeds, downtime, cleaning time.

- New service code on accounts, so revenue and costs are tracked accurately.
- We measure up time and productivity and sales through all equipment.
- Not in a really structured way but we do try to use our MIS system to identify how busy an area is.
- We're still here! It's working. However, we can still improve.
- Just compare past to current.
- Not as well as we should. Getting better.

## QUESTION

Do you ensure your contract has built-in performance criteria?



## COMMENTS

- Sometimes.
- Not included in formal contracts, perhaps because I am purchasing lower value equipment
- No, vendors would not sell to you if you insisted on this.
- Agreed expectations of performance and reliability.
- Perhaps we should in future.
- Written expectations usually required.
- When this is relevant.
- Probably not as tight as we could be with the suppliers.
- Not always, it depends on the equipment purchased.
- We'd love to but this is hardly ever possible.
- We should do. On machines, we have SLAs for uptime, maintenance response times etc but less so machine speeds.
- Probably not well enough, learn more every time.
- We need to, but we also need suppliers to offer estimated targets we can agree upon to make this process viable and deliverable.
- There is implied performance criteria for example make ready times that would be resolved should they not correspond to spec.
- If possible.

- Never been offered this. Although we have had the opportunity occasionally to test a machine here for a week or two which amounts to the same thing.
- Vendor performance is agreed at contract level and reviewed monthly/quarter.
- Where possible.
- Yes it should but in past have made error of not doing this.
- It would be unacceptable to the suppliers.
- Good point will consider this in the future.



# Measuring productivity for capital investments – BPIF Vision in Print

## Introduction

Calculating potential profit from productivity is important in order to identify potential cost reductions and justifying capital expenditure. This paper shows how productivity can be measured for a production process such as printing and how to assess the associated potential added value i.e. profit.

Capacity gains from increasing focus on productivity can be significant and sometimes be sufficient to avoid major capital expenditure. Understanding your current productivity will ensure you are maximising your current assets before committing to new investment. And understanding productivity measures helps managers and operators to ensure that they maximise what they have first, and then get the maximum return from new machinery.

## Identify the critical resource

It is surprising how often organisations buy expensive new kit or undertake a major productivity drive without understanding that it will not increase over-all throughput. The first step is to confirm that the equipment to be evaluated is in fact the critical resource in the whole production process.

Most production processes comprise a sequence of operations which are seldom perfectly balanced and the capacity of the total process will be determined by the equipment with the least capacity.

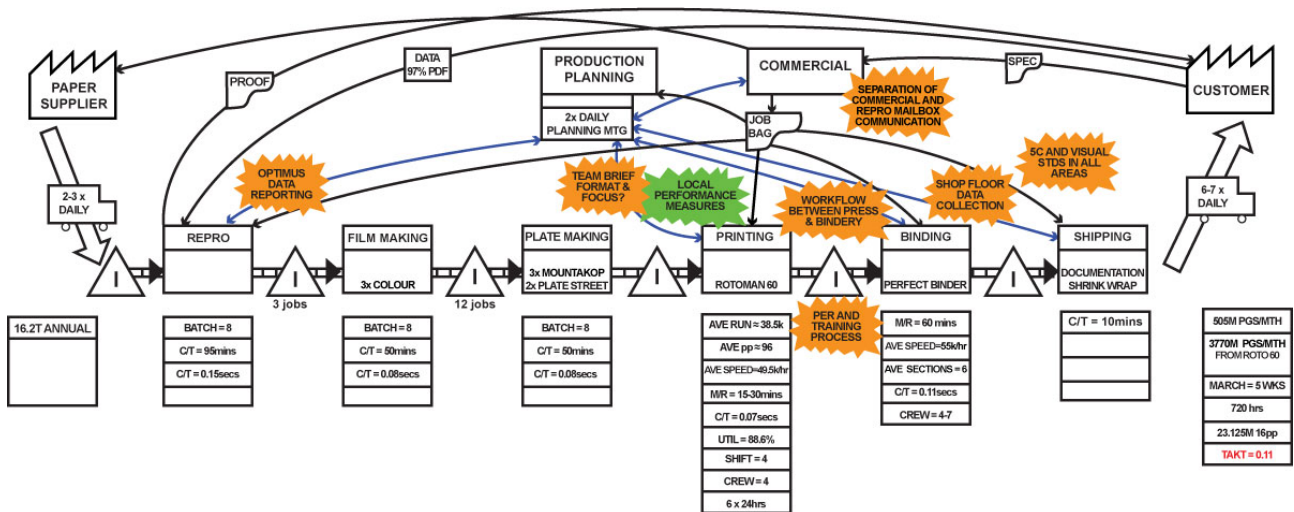
## Value Stream Map example

Vision in Print uses Value Stream Mapping techniques to identify the principle constraints. It is not unusual to find that a seemingly minor operation, such as guillotining, is actually throttling throughput. In this case increasing press productivity will not increase the total process capacity although there may be some minor cost saving through reducing overtime and running costs.

A company recently thought the presses were to be the first priority for productivity improvement, but analysis showed the binder was suffering from interrupted running and was in fact the main constraint and needed urgent attention first.

Although “bottlenecks” may move about with changes in the product mix the overall constraint is usually in one place. Given that there is always going to be one process that is a constraint it makes sense that it is the most expensive, usually printing.

In the following example we will assume that the press is the critical resource and therefore an increase in productivity and capacity at the press will deliver an increase for the whole production process, although the same logic applies to most equipment based capacity constraint.



## Overall Equipment Effectiveness (OEE)

Overall Equipment Effectiveness is a powerful way to analyse process productivity that takes into consideration downtime, run speed and run quality and allows potential value-added to be calculated that translates directly into profit improvement. It is a measure that can be applied to any equipment limited process including printing and finishing processes.

Among OEE's virtues is that all time, run speed and quality is accounted for and any mis-booking between these factors washes out to produce the same OEE number; there is nowhere to hide! On the other hand it is obviously best if the constituent measures are accurate and the detail can be "drilled into" to discover where cost improvement can be made.

In four steps, this is how OEE works:

### 1. AVAILABILITY

Availability is the percentage time that a process is running and actually producing saleable product. In printing companies the available time is usually taken to be the hours that labour is available to run the process but more aggressive measure is 168 hours/week i.e. 24/7.

Any time period can be used to evaluate OEE although it is reasonable to use a period in which small changes even out into a reasonable average, perhaps one week. In our example (a sheet fed press) we are looking at a year's worth of data and assume it is crewed for 100 hours/week for 50 weeks/year and so 5,000 hours is the baseline availability. Run time actually printing product totalled 3,250 shown as 65% on the Availability column of the chart.

Causes of non-running time range from no work to make-readies. "No work" is usually a sales problem and not specifically production (it is a whole business problem sometimes). A sizeable consistent percentage of no work may point to the necessity to reduce shifts or over-time and so reduce cost, especially if productivity improvement can increase the output rate and expand "no work" to a substantial section. Highlighting other non-running reasons allows their causes to be challenged and improved.

Make-ready time in this example amounted to 25%. Some people argue that make-readies are paid for by customers as an invoiced item and therefore “value-adding” and should be included with running as “productive time”. In our experience few customers see it that way and although they may accept make-ready is necessary they primarily expect to pay for printed product.

### **SMED – “Single Minute Exchange of Dies”**

SMED was developed in the car industry to reduce the changeover time for large car panel press tools from several hours down to less than ten minutes without significant capital investment. Vision in Print has adapted SMED techniques for printing and finishing operations and teaches teams in printing companies’ teams to apply SMED to their own equipment. Vision in Print engineers have found that well applied SMED reduces press make-ready times by over 20% and often more than 40%. Additional benefits from a ViP SMED usually include faster average running speed, reduced make-ready waste and reduced run waste. Typical profit improvements exceed £130,000 per year.

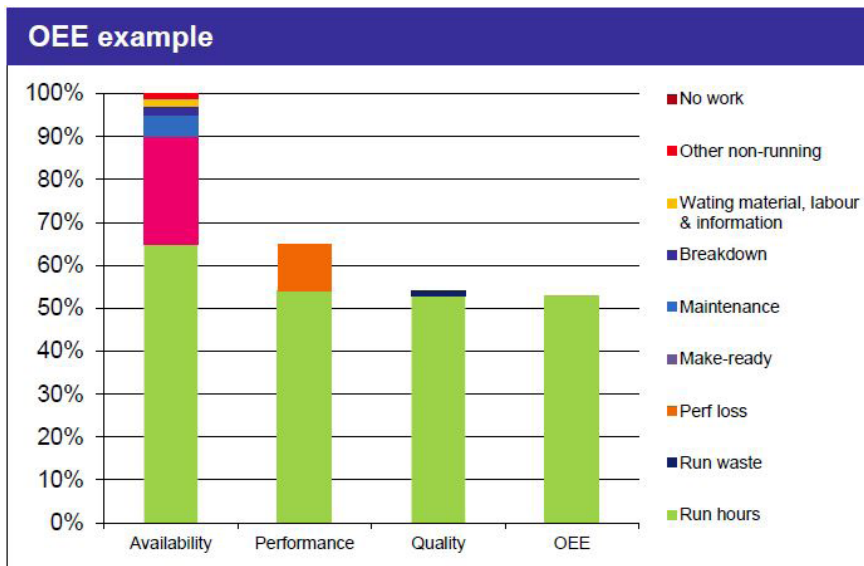
In any case, make-ready is almost always a fruitful area for improvement and well implemented structured make-ready reduction techniques such as SMED convert between 20% and 40% to run time and hence a significant productivity (and profit) increase without major capital investment. Measuring and monitoring make-ready time independently of running and other non-running time is very worthwhile.

Other causes of lost time are resolving poor information or unreliable equipment. The root cause of poor or missing information, particularly on job bags is inadequate or slow administrative processes. Vision in Print often works with office staff to improve accuracy and completeness of information and streamline sales order processes, often after a new or upgraded MIS has been implemented.

Lost time through unreliable equipment can often be reduced by implementing Total Productive Maintenance – and sometimes the calculating the cost of lost time through lost value added makes the case for fresh investment.

Sometimes buyers are not aware of the impact of their decisions on the total cost-in-use. One ViP client was experiencing frequent expensive web breaks that turned out to be caused by mill joins. When the true frequency and cost impact was calculated the buyers quickly put pressure on the paper supplier and mill-joins and web breaks reduced dramatically.

If the true cost of non-running is not realised the cause of lost time can be quite banal. Very commonly operators waste press time unwrapping ream-wrapped paper or reducing stack sizes to fit in the press. The cost-in-use of such hindrances for sheet fed presses is now a standard part of paper suppliers and they offer palletised paper, correctly sized and prepared to avoid such delays.



## 2. PERFORMANCE

The next column in the OEE chart shows the impact of slower running. Performance is the actual average speed achieved as a percentage of the target speed. In the example the press is assumed to be capable of producing an average of 12,000 copies/hour i.e. 39,000,000 copies during the 3,250 run hours in the given time period (in this case 1 year). The actual achieved output was 32,500,000 (good and bad) so the run performance was  $32,500,000/47,000,000 \times 100\% = 83\%$ .

What should the standard speed be for your equipment? Operators will claim, sometimes reasonably, that short runs or difficult stock will slow the press but care must be taken not to accept slack standards. If it is new equipment it is reasonable to take the speed it was sold to perform at for your work. For older equipment it can be taken as the best actually achieved in the last year, or the best achieved under trial conditions. Alternatively use the standard rate for costing jobs – although this might self-justify underachievement. Unless a very sensitive shop-floor data collection system is used, short stoppages can go unrecorded as down-time but are included as part of the run speed average. This does not affect the final OEE (it all washes out) but can be misleading if the uninterrupted or maximum run speed is interpreted as the average run speed.

Improving run speeds usually starts with getting make-readies procedures right and so again SMED is a powerful tool for improvement. Difficult stocks can be a genuine reason; especially if drying time is a problem. ViP studies show that some paper grades have significantly faster drying time that allows quicker processing.

Other causes are psychological; the fear that fast running will cause poor quality or equipment failure. Operator confidence is best built by demonstrating better speeds are possible. Comparison between individual operators will show what is possible but in our view such statistics should never be publicly displayed. Instead they should be used tactfully to understand why some operators are better and then encouraging others to adopt their methods.

### 3. QUALITY

The third column looks at the percentage good product made as a percentage of total quantity produced. It is important to differentiate between make-ready waste and run waste.

Note that make-ready waste should not be included in OEE because its impact on productivity is already included in non-running time during make-readies. It is, however, usually very worthwhile monitoring make-ready waste as a separate measure to OEE. It can often be improved during a structured make-ready reduction exercise simultaneously with reducing make-ready times. SMED again!

Run waste however should be included in OEE and in our example is 650,000 sheets over the year, hence good quality is  $31,850,000/32,500,000 \times 100 = 98\%$ , perhaps a little lower than one would normally expect for a sheet-fed press.

### 4. OVERALL EQUIPMENT EFFECTIVENESS

Overall Equipment Effectiveness = % Availability x % Performance x % Quality

Using our example this becomes:

$$65\% \times 83\% \times 98\% = 53\%$$

We are often asked what the average OEE is but this depends upon the nature of the equipment and the nature of the business. Companies making very long runs with few make-readies and fully loaded equipment should expect to be up around 90%. Companies with many make-readies can expect considerably lower acceptable OEE (unless of course using digital technology, which perhaps has a higher unit cost).

As OEE is the product of three percentages it can appear to be an alarmingly low number and it should be considered seriously because the opportunity for increasing productivity using productivity improvement tools such as SMED can often avoid unnecessary significant capital investment.

AVAILABILITY	Hrs/Year	% of Available Hrs	Value Added	Notes
No work	-	0%	£0	Insufficient sales
Other non-running	50	1%	-£6,282	
Waiting	100	2%	-£12,564	Waiting material, labour or information
Breakdown	100	2%	-£12,564	Unplanned breakdowns
Maintenance	250	5%	-£31,410	Include cleaning & regular wash-up
Make-ready	1,250	25%	-£157,051	Include wash-downs at change-overs
Total non-running Hrs	1,750	35%	-£219,872	
Run Hours	3,250	65%		Producing product only
Total Hours available	5,000	100%		Hrs equipment is manned/year
<b>Availability %</b>	<b>65%</b>			% of Run Hrs of Total Available

PERFORMANCE				
Units made	32,500,000			Including bad quality
Target units made	39,000,000			Based on best possible speed
<b>Performance %</b>	<b>83%</b>		£81,667	

QUALITY				
Good units made	31,850,000			Quality loses valued at full sales price
Total units made	32,500,000			Saleable quality
<b>Quality %</b>	<b>98.0%</b>		-£16,667	Exclude make-ready waste
				Poor quality loses sales potential

OVERALL EQUIPMENT EFFECTIVENESS				
<b>OEE %</b>	<b>53%</b>	= Availability % x Performance % x Quality %		

VALUE ADDED				
	Annual			
Sales	£1,000,000	i.e. £1,000,000 per year		
Direct Material & Outwork	£500,000			
Value Added (VA)	£500,000			
Value Added per Run Hr	<b>£154</b>	= Lost profit for each Run Hour lost		
<b>Every 1% gain in OEE productivity adds £9,419 to profit</b>				

## Calculating Added Value and Potential Profit Improvement

Value Added is simple to calculate and powerful to apply. In essence it is the difference between the selling price of products produced on a process minus the direct material, outwork and other external costs required to make the product.

This assumes labour and other internal costs are fixed because they cannot be simply “turned off.” If labour is temporary or on overtime then it should be treated as an external cost. So for the press example above the selling price of product passing through the press is £1million per year and the cost of material and outwork is £0.5million, hence: Added Value = £1million - £0.5 million = £0.5million

Because in our example the press is the main constraint on the total process we can assume that an increase in throughput resulting in increased productivity at the press will directly increase Value Added without increasing costs at other points in the production process. Of course there comes a point where increasing the productivity of the press will move the main constraint to another process, which should then become the focus for OEE and productivity or increasing capacity.

The other assumption for increased Value Added is that increased through-put can be turned into extra sales. This is often the case, or at least the benefit reduced unit cost can be turned to reduced prices and hence increased sales. Increasing Value Added, without increasing internal costs through productivity improvement, is directly related to profit increase, so an increase of £1,000 in Value Added = £1,000 increase in profit. Knowing the Value Added over a period now allows us to calculate the Value Added per run hour. Remembering Run hours are the hours that the press is actually printing (and not including make-ready) in our example the number of run hours = 3,250hrs/year, so  
Value Added per hour = £500,000/3,250hrs = £154/hour

Assuming the press is the primary constraint, then this means the press is actually generating £154 profit per hour or, put another way, is losing £154 potential profit or every hour that is not running. Looked at this way every minute lost while an operator looks for a pallet truck or sorts out information errors on a job sheet costs £2.56. In the example the Value Added impact for the various non-running times effecting Availability total £219,872 plus £81,667 for lost Performance and £16,667\* for Quality problems with a total profit impact of £318,206.

Of course this cannot be eliminated but a relatively small increase in productivity represents significant opportunity for improvement. We can see this by calculating the Value Added and hence profit for each 1% of OEE, in our example this is £9,419, in other words just a 5% increase in OEE will improve profit by £47,095/year.

Using Lean techniques OEE gains of 10% are not uncommon and typical ViP projects yield savings of over £130,000 per year with even greater savings for some process improvements.

\*The cost of Quality should be valued at full sale price but here we keep to Value Added in for simplicity.

## Using OEE to Drive Improvement

OEE is a very useful indicator of productivity and tool for investment decisions for managers but it can be too abstract for operators, although there seldom any harm being open and sharing it with them.

Operators need more specific measures on how much time is spent running, on make ready or time lost through breakdowns, how fast the process is running and the quality. These are the measures that they can use to make changes and so increase productivity that will become improved OEE. Simply measuring and displaying availability, run speed and quality charts next to some B2 presses increased OEE in excess of 15% within 2 weeks at one ViP client last year.

Understanding and appropriate use of OEE is the key to increased profit, delaying unnecessary capital investment and ensuring expensive new equipment meets expectations. ViP programmes cover a wide range of process improvement techniques, including:

- Productivity Healthcheck
- Operations Assessment

- Lean Manufacturing
- Lean Focused Maintenance
- 5C/5S Rollout
- Office and Prepress Change Cycle
- Materials Waste Reduction
- Masterclass Lite
- Masterclass
- Booster
- Kickstart
- Modular Improvement Programme
- Environmental Diagnostic

## **Monitor Post Investment information**

Circa 82% outline clear objectives that need to be achieved and the outcomes you expect, when looking at investments and circa 82% reported they measure performance and benefits of the investment which is encouraging? But only circa 45% build in performance criteria into their contracts and SLAs.

Put post investment evaluation into your management feedback process and ensure ownership across your team for achieving the best outcomes and 'OEE'. Make sure your expectations are being met across a wide range of criteria such as customer satisfaction and customer value as well as the financial investment criteria. Also monitor the capital investment process you embarked upon and use it as a learning process for the whole business for future actions.

## **Investment Post Match Analysis**

Once the choice has been made put a Plan, Do, Act and Control implementation in place an important process analysing what is happening to what was planned, needs to become part of the management and ownership process alongside how can we improve even more and maybe there are some good upsides.

Post investment questions might cover:

- What are we achieving to what we expected/planned
- Has it achieved our goals, can we further improve
- What would we do differently next time
- What corrective action if any is required
- Has real competitive advantage been gained



# Measure supplier performance – strategic procurement

The research commentary highlighted concern on post installation performance and the following notes might help focus discussion and create a more effective platform for collaboration and agreement pre installation and at the contract discussion stage.

Every business will have a process for assessing supplier performance. These might include key performance indicators or more inclusive data gathering and on-site assessment programmes. Whether you are satisfied fully with your supplier assessment capabilities and results is another thing.

The sector has many great examples of supplier/customer collaborations and strategic partnering, but much more can be done overall by our sector to ensure mutually beneficial relationships which deliver true costs down and quality up. With ever increased reliance on suppliers of technology and technology reliant solutions to meet customer demands and expectations, businesses are under increasing pressure to avoid supplier problems and to attract and retain high performance strategic suppliers or long term partners?

Service Level Agreements (SLA) need to reflect this interdependence and greater reliance. The time taken to write a comprehensive SLA and make it part of negotiations is paramount. Connecting the dots between deliverables needs and requirements again needs an integrated approach.

Three integrated elements will help if included:

- Stakeholder needs must be satisfied individually, including implementing and managing the diverse business requirements they represent. Hence involving a team across the business. Only then can a decision making framework aggregate and satisfy these requirements collectively, whether it's for negotiations (where everything should be transparent and on the table), or for supplier risk management (where all key stakeholder risk requirements should be accommodated).
- All procurement requirements, whether focused on risk or reward (e.g. cost savings), must flow seamlessly between all process participants and the systems of record that will manage the commercial relationship. Make sure everyone is comparing the right apples with the right apples and supplier's feedback information based on your template measurement criteria.
- The knowledge that is gained must be captured and fed back into the process to improve downstream efficiency, effectiveness, and compliance. Capturing and reusing knowledge built during the strategic procurement process will be useful for the future.

There are some identifiable process steps that a business can adopt to harness its internal resources to improve the performance of key suppliers and at the same time gain more effective results and greater ROI.

## Developing Effective Supplier Assessment

Align your organisational goals and objectives with supplier performance goals. This should not be an onerous process and also help gain an understanding of the motivations of your suppliers. Do they share your vision? Do you share their vision?

You will need a supplier strategy in place that relates to your overall organisational goals and objectives. Many companies will have continuous improvement programmes in place and these will need to be aligned with key suppliers. Lack of synchronisation will affect cost, quality and delivery. If for example a

company is committed to Six Sigma or any lean process improvement programme, it will have developed a fact-based culture and the company will require a similar approach to performance improvements from its important suppliers.

Choose an Appropriate Evaluation Approach. These may cover evaluation of financial health in the first instance, an operational performance matrix, business processes and practices, reviewing behaviours or cultural factors, identifying and mapping risk factors. Develop a method to collect information about your suppliers. This is a challenge with finite resources, but use your team. Establishing a project team with defined responsibilities and feedback will help here. Review all sources both internally and externally to gather qualitative and quantitative data. Conduct paper questionnaires, web based questionnaires, site visits etc.

Design and develop a robust Assessment system. An approach to evaluating suppliers might include accepting a third-party standard, such as ISO 9001 and its sector specific derivatives or good manufacturing practices, but this has increasingly become just the starting point. Also Benchmark performance against industry leaders. Measuring performance against best practice and scorecards based on system data or internal customer feedback.

Many companies across our sector now develop their own certification or evaluation and measure performance against it. No matter which components of a supplier assessment system an organisation develops, a big challenge lies in creating a system founded on metrics both relevant to the business and based on generally accepted best practices.

Using available existing evaluation systems or third-party standards may be simpler but may not be aligned with the processes and practices critical to your particular industry position, culture or strategy.

Sometimes organisations collect data for the sake of data or collect the types of data they have historically gathered. They want to gather information from suppliers but have not connected data either to their organisation's business strategy or to the performance that would best support their own business models.

Designing and developing a robust supplier performance measurement system requires deep business knowledge, familiarity with high performance systems and knowledge of measurement methodologies. It requires expertise in properly constructing the questions to elicit accurate responses and correctly measure performance. Thus, some companies use a combination of these approaches.

Give regular and structured feedback to suppliers on their performance. Suppliers often bristle at the term "supplier management" because it implies one organisation managing another. Customer companies need to have a real dialogue with their important suppliers on performance and work on the critical issues of the relationship. This requires a two-way flow of information. If the results of performance measurement and supplier assessment are not actionable or expectations of actions are not communicated, those actions will not occur.

This is a difficult piece of the supplier performance puzzle because many supplier organisations may have competencies in some areas that exceed those of their customers. In many cases, customers just drop the ball in the follow-up department, sending out results with no dialogue about next steps for continuous improvement and thus defeating part of the purpose of the whole exercise.

Produce results from measuring supplier performance. Measuring supplier performance is about understanding, communicating and then improving supplier performance. If all the important components of a good supplier assessment system are in place and you and your supplier are getting relevant, actionable results, then the suppliers can take the next step of improving their performance. Supplier performance measurement can lead to supplier development, and supplier performance improvement has the potential to impact the customer financially and competitively.

# Customer experience standards and service level agreements

As consumers we have all become used to great service, immediate feedback on order progress, we know our consumer rights and by and large customer services from day to day purchasing experiences are responsive. This is driven by intense competition and fact that customer service is a huge differentiator in consumer markets.

In our B2B world we often experience different levels of service and quality and interactions seem to become more complicated. The 'comments' from the research highlight this frustration.

Customer service should be put at the centre of a business's offering and ensuring the processes involved works should be a core business issue. Safeguarding yourself as much as possible comes from compiling appropriate service level agreements (SLAs) and service contracts alongside working with suppliers who communicate and adopt true partnership and collaborative principles. This works both ways and should also be part of your culture and framework of discussions.

The service standards you expect and appropriate service level agreements need to be worked out during negotiations and reflect the risks and issues facing your business and the expectations of your customers. The research highlights that printers want more interaction and deliverability from suppliers.

## Service standards from a supplier perspective

Service standards are the operational standards that service and equipment providers should commit to for their customers - they should satisfy what the customer, you, can expect and when.

Service standards are useful for:

- Ensuring both parties use the same criteria for evaluation and measurement.
- Focusing service providers on the needs of the customer, you and your customers.
- Ensuring consistency of service.
- Providing a standard against which you can measure them.
- Encouraging service improvements and effectiveness.

Service standards need to incorporate the following:

**SPECIFIC** What exactly will the customer experience be?

**MEASURABLE** How can this be quantified?

**ACHIEVABLE** Can all service providers achieve this?

**REALISTIC** Does the standard meet the needs of the customer Is it what the customer wants?

**TIMEBOUND** When will the standard be delivered and how often?

Best practice when setting service standards is to first establish the needs of customers. (By your supplier and for your customers and yourself to feedback into suppliers.) Both qualitative research (e.g. customer focus groups and one to one interviews) as well as quantitative research (e.g. questionnaires and telephone surveys) are methods that could be used to clarify what is important to customers. This data allows service standards in each of these areas to be defined and performance monitored, ensuring alignment with customer expectations.

In order to develop service standards, it is essential that those people who are instrumental in delivering service recognise what is important to customers. This means that they must see relevant customer research and feedback. A sales and account management function in a supplier should map and quantify what is important and you need to capture this in the agreements.

Service providers also need to collectively agree the standards that they will deliver. If standards are imposed without consultation the likelihood is that these will not be met.

## Service Level Agreements

The benefits of a robust and fulsome SLA should be:

- Greater trust between customer and supplier.
- Effective communication.
- Greater transparency and openness.
- Acknowledged interdependencies.
- Joint team building and a Partnership and collaborative approach.

They are particularly important around new technologies where risk needs to be managed and many issues are of concern. The two parties to an agreement often have different views about the role of the SLA and what it can realistically accomplish. Both sets of views may be valid, yet sufficiently different as to cause a breakdown in SLA negotiations.

Before any SLA development work is done, it is advisable for the two parties to hold an open discussion to ensure that they have a basic level of agreement about the agreement. If they don't – and until they do – any further SLA effort may prove futile.

The process of planning, establishing, and implementing an agreement can be a long process of information-gathering, analysing, documenting, presenting, educating, negotiating, and consensus-building. It's important for you and your customers.

With an SLA in place, it is much more difficult for either party to claim ignorance if the agreement breaks down. It is a document that is built at pre negotiations and specification stages. It should also align your business drivers and your customers' drivers with the supplier. Are they suppliers you should be dealing with if they don't?

To be as effective as possible service level agreement incorporate two sets of elements, a service element and a management element. The service elements clarify services by communicating such things as:

- The services provided (and perhaps certain services not provided, if customers might reasonably assume the availability of such services).
- Conditions of service availability.
- Service standards, such as the time frames within which services will be provided.
- The responsibilities of both parties.
- Cost vs. service trade offs.
- Escalation procedures.

The management element covers:

- How service effectiveness will be tracked.
- How information about service effectiveness will be reported and addressed.
- How service-related disagreements will be resolved.
- How the parties will review and revise the agreement.

When writing a service level agreement, keep the language simple and unambiguous. The SLA should be short, only a few pages long, but not skimp on what is business critical for you and your customers where necessary.

The basic components:

- A statement of the parties' intent.
- An outline of the responsibilities of each party (including acceptable performance parameters with applicable metrics).
- A statement on the expected duration of the agreement.
- A description of the applications and services covered by the agreement, procedures for monitoring the service levels, a schedule for remediation of outages and associated penalties, and problem resolution procedures.
- Focus the service provider on what really matters to the customer.
- Setting and maintaining quality standards.
- Pinpointing accountability.
- Close service quality gaps.

## **INCORPORATE PRE-IMPLEMENTATION TASKS**

This is important to gain buy in across the relevant individuals within your team directly affected by the investment. Such tasks might include, developing tracking mechanisms, establishing reporting processes, developing procedures for carrying out stated responsibilities, communicating expectations to staff, providing relevant training.

## **SLA METRICS**

A quality definition may contain several individual metrics that may form part of the acceptance criteria, or that may serve as standalone measurements of a single aspect of service. These might include as a minimum, technical quality, service availability, service satisfaction, performance criteria.

Choose measurements that motivate the right behaviour. The first goal of any metric is to motivate the appropriate behaviour on behalf of the client and the service provider focus on the behaviour that you want to motivate. Ensure that metrics reflect factors within the service provider's control. To motivate the right behaviour, SLA metrics have to reflect factors within the supplier's control.

Choose measurements that are easily collected. Balance the power of a desired metric against its ease of collection. Ideally, the SLA metrics will be captured automatically, in the background, with minimal overhead, but this objective may not be possible for all desired metrics. When in doubt, compromise in favour of easier collection. Less is more. Despite the temptation to control as many factors as possible, avoid choosing an excessive number of metrics or metrics that produce a huge amount of data that no one will have time to analyse.

Set a proper baseline. Defining the right metrics is only half of the issue. To be useful, the metrics must be set to reasonable and achievable performance levels. When it comes to SLAs, it is worth spending the time to get them right. As with any long-term relationship, it is best to have the expectations communicated as clearly as possible before the relationship begins. And if things do break down, it helps to have the remedy there in black and white without the need to renegotiate.

Ideally any SLA needs to be a 'living' document that is looked at and reviewed on a regular basis. This should give the supplier of equipment and services an opportunity to continually improve service quality. The platform for success in an SLA is that both parties have a say. It might be impractical or feasible for both parties to be involved in every step of creating the agreement. But a successful SLA is one in which the two parties collaborate. When the process is truly collaborative, the two parties have already succeeded in learning how to work together.

## **Factoring in a change process**

Also ensure there is an opportunity where identified to make changes with identifiable trigger points and have a section in the SLA covering a change process. This element part of the management of an SLA, provides formal mechanisms for modifying the agreement to address changing needs and priorities.

Even the change process itself can be changed using the change process. Sometimes after making some changes to the SLA, organisations conclude that the process needs adjustment, and so they change the change process itself.

## **Some key issues in creating a change process might include these**

Conditions warranting change:

A well-written SLA describes the types of conditions most likely to warrant consideration of changes, such as changing business or service needs, significant variations from agreed upon service standards, or unanticipated events.

Changes might also be considered for such things as adding new services or service standards, modifying service levels, setting new service targets, or adjusting the division of responsibilities. This is an opportunity to identify future risk and change from your decision making process earlier or from your marketing research. It's all part of Future Proofing.

## **Change procedures**

The SLA should briefly outline the process of requesting, initiating and negotiating changes. Generally, this process entails identifying circumstances warranting consideration of changes, specifying who can submit proposed changes and how they can do so, identifying how negotiations will take place, incorporating the changes into the SLA document, and notifying relevant personnel about the changes. This might sound complicated but it's a bit like insurance. You are glad you paid for cover when it's most needed.

## Future Proofing

Businesses have learnt to be better at reducing fixed costs in relation to variable costs during the recessionary years, doing more but with fewer people, leveraging technology, deploying leaner methods and outsourcing costly but non-core activities.

A business as usual mentality is something we know does not exist. But do we make future proofing an ongoing part of management meetings and a responsibility of key staff to report on?

This report is about the issues surrounding the strategic nature of decision making as technology led investment decisions force change around the process of decision making. With the depth of scrutiny required and the management of different risk profiles.

Future proofing is the process of anticipating the future and developing methods of minimising the effects of the shocks and stresses of future events and issues. It is about ensuring the ongoing creation of value is managed as effectively as possible and investment decisions have future proofing built into the decision making.

The issue is now more prominent in supplier communications and formerly needs to be part of service agreements and SLAs. The sensitivity of change and shifts in risk all impact your management of People, Profit, Plant, Processes, Products and Service delivery to a greater extent.

The research highlighted in the commentary the concerns surrounding systems integration and compatibility and linkage between technologies as one of many issues around future proofing and impact on business sustainability.

Some Future Proofing principles:

- Look after what you have got. This includes proper maintenance programmes, training should not be a one off event.
- Re-look at how flexible and adaptable you are as a business? Set up a matching ethos and culture.
- Make future proofing part of your team's psyche, question any change and investment and its future impact relentlessly. Improve the depth and strength of your decision making process where possible.
- Assess risks thoroughly and share risk. Ensure scalability, integration and connectivity and an evolutionary pathway is clear. Push risk back to suppliers, have SLAs that reflect your crucial business critical issues.
- If you view technology as a tool to help you solve your customers' problems make sure you can profit from it. Identify the true problems so you don't just but kit for the sake of bells and whistles. Henry Ford supposedly said if he asked customers what they wanted, they would say faster horses. It is a word of caution to filtering what customers really want and highlights the difficulty of customer feedback.
- Take a holistic view or in the round view in all you do. New products or features don't always work the way we want them to. Even if it meets your customers' needs today, those needs and pain-points will change over time.
- Try and avoid being put in a corner. Scenario planning exercises are a worthwhile event.
- Stay plugged into the market. Stay immersed in your market. Stay in touch with other entrepreneurs, follow your competitors and network as much as feasible.



- Inspire employees to innovate. Everyone has good ideas about how to expand a product and innovate. The leaders of future-proof companies understand that a strong company culture helps surface these ideas and spur innovation. Build a culture that aligns employees around a strong mission, values clear communication and encourages people to pursue their creative ideas. Set aside time for experimentation and empower employees to get involved in projects and jobs outside of their typical role. Maybe change how you structure this in your business.
- Offer experience and a great product. Love bomb your valued customers.
- Think partnerships, not transactions supply chains need each other more so and positive outcomes are more interlinked. Look to deal with those that really practice collaboration and partnership principles.
- Don't focus all of your time, energy or resources on a single strategy for future-proofing.

Instead, divide your energy between:

- Listening: Fulfilling customers' requests for certain features and improving your product
- Connecting: Understand the market and your competitors
- Experimenting: Looking ahead at opportunities for the products and services your customers don't yet know they need.

Balancing better attention on your customers, keeping your pulse on the market and innovating ahead of the market will help enable your company to capitalise on tomorrow and the years ahead. As you work to do so, however, don't lose sight of your mission to create better outcomes for your customers. This is the profitability.

# Final comments (from respondents)

- Started this survey with the best of intentions, but gradually fell away from positive answers. The greatest restraining factor re, to invest or not, is the increasing uncertainty of the position of 'printing by manufacturers', such as ourselves, in the overall marketplace. I see technology advancing at continuing pace but only see our competitors use the advance to lower prices which I see as quite futile and damaging to the trade per say. We would never invest to chase a lower price; only to increase production processes, our range of products and/or profitability.
- We are always looking for way to drive down costs without adversely impacting on product standards, safety or well-being of staff; at the same time we look to innovate so that margins can be improved in what continues to be a price driven commodity market.
- Surprising how capex is so much more visible than people hiring review.
- As is to be expected, ticking boxes does not give the opportunity to express the many shades of grey experienced in day-to-day business.
- Making an investment decision in the current economic climate is very difficult and as a company you are very often on your own. We have found best process is to look at the equipment/service you are thinking of investing in and compare this with others that are available in the market place before proceeding. It is too costly to make mistakes to as much homework as possible needs to be done.
- We find it key to stay ahead of competitors to have the latest technology within our budget to enable us to provide the most competitive service available.
- We are a small company and investment decisions have to be affordable and pragmatic. A lot of decisions made on the run and based on experience gained over a career in print.

# About the British Printing Industries Federation (BPIF)

The BPIF is the principal business support organisation representing the UK print, printed packaging and graphic communication industry. It is one of the country's leading trade associations. The federation strives to ensure its members' requirements come first.

Through listening to the members' needs, the BPIF has developed an unrivalled range of products and services that go well beyond those provided by a traditional trade association.

It provides the highest standard of support for printers to grow and develop healthy, sustainable and profitable businesses, aiming to provide an environment geared towards their businesses success. The BPIF offers practical, value-adding solutions for all areas of a print organisation, ranging from health, safety, environmental and quality issues; with the implementation of HR requirements; provide resolutions of technical or legal issues; as well as advice and support on marketing, sales and finance. This is all delivered by individuals and teams of highly skilled and experienced print industry specialists.

The BPIF also offers a wide range of opportunities for networking both regionally and nationally, including prestigious events, special interest groups and popular short courses on a variety of topics.

For more information visit: [www.britishprint.com](http://www.britishprint.com)

# About Print Business

The aim of Print Business is to help printers research their buying decisions, to help them make sense of the myriad routes available to them. It is not to recommend or advise but to help them understand so they can come to their own conclusions about what is best for them.

Editor Gareth Ward has been immersed in print his whole life. He comes from a printing family, he was editor of a major weekly print title before he was 30 and has been writing about print for three decades. He believes that the only way to truly understand the challenges and achievements of printers is to visit them in their factories and talk to them face to face.

It is this depth of knowledge that brings Print Business case studies to life. Each issue of the magazine has at least one printer profile, and often there are two, three or four. There is a section of the website [printbusiness.co.uk](http://printbusiness.co.uk) devoted to them, with more than 250 printers talking about their businesses.

There is no better way to navigate the maze of information associated with running a print factory than to read about similar businesses and consider what they have done, and why.

For more information visit: [\*\*www.printbusiness.co.uk\*\*](http://www.printbusiness.co.uk)

# About Mixam

Mixam is a software developer and online print supplier. Adding value to the print buying process and offering a rich customer experience, the software is available for 3<sup>rd</sup> parties under licence.

Here at Mixam, we are passionate about the application of smart technologies. Born from a printing business we have used our knowledge of technology to develop and bring to market one of the leading internet solutions available today. We work with UK printers on a supply basis and partner this with our technological capability to open up the online market.

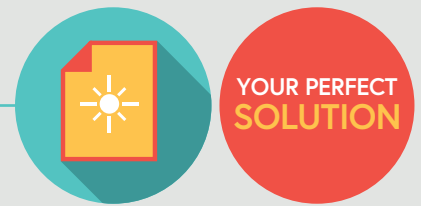
We believe this report on investment and more effective decision making is important as we compliment and support the dynamic propositions to the consumer market who seek strong customer service and optimised solutions. A large part of our success to date has been on developing strong relationships with the supply chain, as we understand this is fundamental and core to good business relationships. In conjunction with our leading software, this had lead us to be able to recently launch our reseller program, offering a comprehensive and efficient way for printers and print buyers alike to access online products and services.

For more information visit: [www.mixam.co.uk](http://www.mixam.co.uk)



# Become a Reseller with Mixam

If you're a print service provider, we offer a terrific reseller programme chock full of benefits.



## Quality print - your profits increased

With our range of litho and digital products we can help your business grow. Access the web's most advanced print ordering system and enjoy our unrivalled customer service.

2% ✓  
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5% ✓  
for 30k - 50k annual turnover

8% ✓  
for 50k+ annual turnover  
(with your own dedicated account manager)

FREE!  
We can also offer a **Free Price Widget** for affiliates (our price calculator on your website)

API  
Using API code orders can be placed with us directly from your own branded website

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- ✓ High Quality Print
- ✓ Up to 8% discount
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- ✓ Dedicated Account Manager (for 50k+ turnover accounts)
- ✓ Archived files for easy reordering
- ✓ Ever increasing product range
- ✓ Your own fully branded website can be provided

## Become a print supplier for us

We are always on the lookout for print suppliers. So if you are a specialist printer or simply want to find innovative ways to increase your turnover, we would love to hear from you. Simply get in touch at [info@mixam.co.uk](mailto:info@mixam.co.uk)

CALLING ALL SUPPLIERS



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