New tricks for old dogs:
Quality systems and operational standards in traditional publishing

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Abstract

For many years people have dreamed of being able to "automate" the process of producing (DTPing/ typesetting/etc) publications. The huge number of variables and inconsistency in inputs and processing methods have stood in the way of achieving this goal.

This paper proposes some ways forward. It will address the roles which can be played by:

- staff training
- quality control systems
- process controls
- power use of software

Careful attention to these details as outlined in the paper will achieve higher levels of productivity, greater predictability in outputs and will liberate the design process.

The paper will illustrate the various matters raised. Examples will range from production of simple novels (for delivery into print and electronic media) through to production of complex dictionaries from SGML databases.

123 words

Introduction

Hello, my name is Gerard Reid. Why am I here? I'm not suggesting that this session is going to be a philosophical debate—but why me?

I virtually grew up with printer's ink in my veins. I was surrounded by my English Professor father's library of thousands of books. At night I was lulled to sleep by the gentle thumping of a treadle press in my next-door neighbour's shed and during the holidays we practised setting type the old, cold way—letter by letter, reversed in sticks.

I first sold type during the late sixties when running an ad agency which had a type subsidiary. Later I owned a bookshop then, for 13 years, ran the Book Publishers Association of NZ. I also was an industrial researcher and self-taught COBOL programmer in the early seventies.

My wife, Mary Egan, founded our company in 1987, the early days of digital. It was a great opportunity to bring our various personal and professional experiences together. So I was happy to join her a decade ago. We reshaped the business to concentrate on the book industry which we both knew well and to call Australia and New Zealand our market. We now do 80% of our business in Australia and believe we are the second largest book design/typesetting business in Australia.

Out of all this we have learned a lot about how to make the best use of new technology to deliver one of the oldest media. However, we have not made the mistake of thinking that what we do involves paper and ink. Our task is to bring to bear a special set of skills to package information and entertainment to make it most accessible to the public. We can deliver material ready for conventional printing, for delivery via electronic media (Web, eBook, CD, etc) or for unknown future uses via SGML, XML, HTML (and as-yet-unknown-ML). From now on I am going to talk about books but only because it is convenient to refer to the area of our major client base. What I have to say is equally relevant for magazines, newspapers and any digital medium.

Michel Montaigne the 16th century philosopher and essayist said, of science, that doubters would first say

"I don't believe you" then
"It may be true but it isn't relevant" and finally
"It might be true and relevant but it is no longer new".

Production systems in publishing are dogged with the same attitudes. When I propose that there are better ways to do the old things, the first response is

"I don't believe there is a better way". Then it moves on to
"well it might be better but it isn't relevant to what we do" and finally people say
"your way of doing it might be better and might be relevant for print but we are more interested in creating web pages now".

Sometimes the new is the enemy of the good.

So, the production processes widely used to deliver text and images stagger along suffering from neglect, lack of standards, poor and inconsistent training and a generally low levels of performance.

Before I go on to what is required, I'd just like to give you another quote. This is from Din Heagney in his May editorial in *Desktop* magazine:

> *With all the technology changes, is our expression, our passion for creation, being blurred and copied ad nauseam? When we continue to see thousands of designs that look like the back of the box the software came in, you've got to wonder.*
>
> *Sure we can do things faster, more powerfully and supposedly in higher quality than ever before, but are we fooling ourselves? Are we allowing our tools to take precedence over the art of design?*

So let's look at quality systems and operational standards in publishing.

I propose that there are 4 tasks in front of us. Get these right and everything follows:

- staff training
- quality control systems
- process controls
- power use of software

Staff Training

Over the years we have received a huge number of files prepared by dozens of other designer/setters from Australia, NZ and further afield. What has most bothered us about them is the generally low standard of work. Here are the rules you would deduce from examining these files:

- If it looks all right on the page it is OK
- Appearance is more important than process
- Don't tidy files until you have to
- Consistency is for sissys
- Software companies know best, so always use default settings
- I understand how it works—isn't that enough?
- I can use Photoshop filters—why do I need to know anything else?

The fact is these errors are being made over and over even by people who are senior designers. And what they show is shortcomings in training.

Without Training you cannot have Standards.

I know that margins in publishing shrink by the year but failing to invest in training is self-defeating. Well-trained staff are more productive. They make fewer errors. Their colleagues can pick up their work without extensive briefings. There are fewer downstream problems. And all it takes is a percentage of time devoted to training.

For our purposes here training can come in 3 forms:

- bought in (courses)
- peer or supervisor training
- self tuition.

Courses can provide basic grounding.

But I have yet to see one which can turn a designer/typesetter into a professional operator. I have encountered several people who have had the same experience as me — attending a course to deepen my knowledge of a particular application and having to take over the class at one point because the tutor was out of his depth. In my case it was Photoshop and the tutor didn't understand the difference between CYMK and RGB color systems. So where are operators going to get it? The depth comes from the next two possibilities.

On the job training (supervisor or peer)

This is so enormously important that it should be a part of your budget. If you have not built training hours into your schedule, senior management should be asking why you are not committed to boosting productivity and maintaining Standards. I know some companies think they are astute by hiring people who are already trained. In my experience that is a fantasy. Because the absence of training is so acute, experienced people hired in often are just more experienced at repeating the same mistakes. In the end senior staff have to commit to mentoring and coaching their staff—forever.

Self tuition

Of course we all know operators who are exceptions. Again, by my observation, these seem to often be those who have made the effort to extend their knowledge themselves. But self tuition also requires management support. Management have to invest in manuals, training CDs and other tutorial materials and must make computers and time available so the self-tutoring operator has someone around to ask for help.

Quality Control Systems

We can devise the best operational and quality standards in the world but they will just gather dust unless we also have control systems to ensure their implementation.

If we look around the world for Quality Assurance standards we find that accountants have them, water utilities have them, brewers have them, even PR consultants have them. There is a code for Medical publishing on the web and, by its nature, academic journals publishing with its established protocol of refereeing has a quality control on content. But those who handle the increasingly complex processes of pulling text and images together for coherent and flexible delivery don't have a single standard for quality.

ISO 9000

Fortunately the International Standards Organization (ISO) has anticipated this problem and developed an all-purpose Quality Standard—the 9000 series. We adopted this standard more than 4 years ago and have found it to be a significant factor in our corporate success. I will run over it briefly but not bore you with the details. You can find full coverage at:

www.iso.ch/iso/en/iso9000-14000/iso9000/qmp.html

There are eight quality management principles underpinning the ISO 9000 series. I will skip over the first 3 (Customer focus, Leadership & Involvement of people) and the last 2 (Factual approach to decision making & Mutually beneficial supplier relationships) and jump to the ones which concern us here

Principle 4 says that:

> *A desired result is achieved more efficiently when activities and related resources are managed as a process.*
>
> Key benefits:
> - Lower costs and shorter cycle times through effective use of resources.
> - Improved, consistent and predictable results.
> - Focused and prioritized improvement opportunities.
>
> Applying the principle of process approach typically leads to:
> - Systematically defining the activities necessary to obtain a desired result.
> - Establishing clear responsibility and accountability for managing key activities.
> - Analysing and measuring of the capability of key activities.
> - Identifying the interfaces of key activities within and between the functions of the organization.
> - Focusing on the factors such as resources, methods, and materials that will improve key activities of the organization.
> - Evaluating risks, consequences and impacts of activities on customers, suppliers and other interested parties.

Examples

A good example of this was when we were dealing with the problem of corrections to proofs. One of our clients in particular had very high correction bills because they were dribbling in corrections over time. We conducted an analysis which revealed that the minimum number of actions an operator had to make in order to make a single correction (which might have been inserting a comma) was 15. The maximum could be as high as 29. So, in almost any situation, it was unlikely that correction could be made in under 20 minutes. We then worked with that client helping them to train their editors and in-house staff to ensure clean documents were sent to us. As a result their correction bill tumbled by about 80%. The resources we were able to manage in this case were our clients' own editors.

Another example is in the methodology we developed to evaluate and clean up text documents

received from a variety of sources. By working out the standard problems and the sequence they usually occur in, we were able to develop semi-automated processes for bringing “dirty” text up to a fairly clean standard. These processes consist of a combination of instruction sheets for operators and software which is partially pre-programmed and then operator-refined to replace certain strings of code or text with corrections.

Principle 5 says that:

> *Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.*

Key benefits:
- Integration and alignment of the processes that will best achieve the desired results.
- Ability to focus effort on the key processes.
- Providing confidence to interested parties as to the consistency, effectiveness and efficiency of the organization.

Applying the principle of system approach to management typically leads to:
- Structuring a system to achieve the organization's objectives in the most effective and efficient way.
- Understanding the interdependencies between the processes of the system.
- Structured approaches that harmonize and integrate processes.
- Providing a better understanding of the roles and responsibilities necessary for achieving common objectives and thereby reducing cross-functional barriers.
- Understanding organizational capabilities and establishing resource constraints prior to action.
- Targeting and defining how specific activities within a system should operate.
- Continually improving the system through measurement and evaluation.

Example
How does one deal with such matters as scanning, correcting, sizing and cropping halftones, preparing diagrams, setting music or maths and then pulling it all together in a single whole? A production can fall apart on the variables involved here. Our solution, using the ISO principles, was to evaluate the number of different types of processes and define where they are best performed—when and by whom. We then worked out a standard sequence for these tasks. Every operator now knows who is going to do which part of a job, when it will be done, where it will be stored and so can pull it together without delay, error or repetition.

Principle 6 says that:

> *Continual improvement of the organization's overall performance should be a permanent objective of the organization.*

Key benefits:
- Performance advantage through improved organizational capabilities.
- Alignment of improvement activities at all levels to an organization's strategic intent.
- Flexibility to react quickly to opportunities.

Applying the principle of continual improvement typically leads to:
- Employing a consistent organization-wide approach to continual improvement of the organization's performance.
- Providing people with training in the methods and tools of continual improvement.
- Making continual improvement of products, processes and systems an objective for every individual in the organization.
- Establishing goals to guide, and measures to track, continual improvement.
- Recognizing and acknowledging improvements.

Example
We dealt with this requirement by developing a system called an Incident Report. Whenever something happens which does not conform to the Quality System, an Incident Report has to be completed. At our weekly staff training/Quality meetings all the previous week's Incident Reports (mercifully few these days) are discussed to see whether what went wrong was a systemic problem, pointed to a need for staff training, identified a malfunctioning computer or whatever. We then develop a suitable solution together and, where necessary, changed our Quality System to suit.

This approach of working from a set of Quality Principles always guided by our own Quality Manual means that we can handle work of all levels of complexity from simple novels (did you know there are 56 design decisions to be made on a single text page of a novel?) to processing an SGML database into a 1000 page dictionary involving 56 fonts and very complex setting instructions.

So we have covered Training and Quality Systems. Now we come to the third area which is

Process Controls

If the things operators do have roughly the same sequence, why not document that and develop techniques for improving the sequence? I won't go into all the reasons for choosing the sequence we do, but every step of the next example has been worked out to optimize something about the process.

Examples

When we start a new book (and let's assume the design has already been approved) we do the following in precisely the same order every time. Some of these actions have subdivisions which are also documented and followed rigorously.

translate digital files
query and/or replace any which present problems
compare manuscript with digital file
obtain any missing files
compare instructions with original brief
set up job boxes with all time sheets, quality control records and design/briefing documents
analyse job and create time budget
select appropriate operator

And this is before any production work begins! The full list is too long so I won't go through it. The point is that even something as seemingly simple as "Start a new job" can be analysed, broken down and systematized in ways which greatly enhance control over time and quality.

Process Control should be a contributor to Quality management. Quality issues should be built into all systems. I said that some of the items in my last example had subdivisions. Some of those are solely for Quality reasons.

For example, one of the most distressing things which can happen in book production for print is to find that the digital files delivered to the printer are the wrong size. We had this happen years ago for a couple of different reasons. One was a specification change after job commencement the other a wrong figure keyed in during setup. Our Incident Report system picked up the errors and we agreed that an error of this sort had serious implications. So, we added to our Job Sheet a check point. No operator since has been allowed to move on until the specifications keyed into the file have been checked and signed off by another operator.

Power Use of Software

A program is a program is a program—right? Wrong! A program is a sledgehammer or a scalpel depending on how it is driven.

I mentioned earlier that we have rarely received a file in which an operator has altered the default settings. This is alarming. Software companies may be good at creating software, but ... Would you allow an aircraft engineer to fly your plane just because he built it? Or a surgical instruments manufacturer to operate on you because they built the tools. Of course not. And neither should we make the assumption that the defaults set up in applications represent anything other than a very rough approximation of what should be happening.

For example, the word and letter spacing settings in any major page layout application are attempts to compromise between the needs of wide and narrow columns. Type works quite differently depending on a mix (amongst other things) of: whether the text will be printed or viewed on screen, the typeface selected, the point size of the type, the width of the column and the leading. It is an insult to the type designer and disrespectful to the intended readers to simply assume that the default word and letter spacing will give a good result. They usually do not.

Or, as another example, why would you ignore the power of tools which allow you to do remarkable things in the same sort of application? Yet as many as three-quarters of all operators we have encountered ignore or misuse style sheets. This is potentially even more of a problem because the tidy thinking and systematic production processes which correct style sheet use foster are essential if outputting in any mark up language is contemplated.

Implicit in the things I have been talking about is the assumption that staff will be making use of all this to become power users. I am sure you have had the same experience as I have had with fightening frequency—looking over the shoulder of an alleged top operator only to observe that their skill is at trial and error done quickly. Power users, on the other hand, don't have to spend time trying out various solutions. They will know their software inside out and upside down. They will know the undocumented features. They will know and use the key commands. They will use structure and style sheets correctly. They will backup rigorously according to documented procedures. They will, consequently, complete work within budget, have very low correction rates or rounds of proofing, create work of consistently high standard and achieve higher levels of productivity.

Conclusion

I have addressed both why and how adequate attention to training, quality control, process control and power use of software can contribute significantly to operational and ecconomic efficiency. Don't under-estimate any of the matters I have mentioned. So much of the potential which modern hardware and software and good designers offer us is lost in fixing problems which were avoidable in the first place. Over the years we have watched our own standards grow and have seen the benefits which accrue from getting it right first time. We have had lots of feedback from printers which is along the lines of: Not only are your files always trouble-free but you are the only supplier for whom this is true. This confirms both that there is a lot of room for improvement and that the new tricks I have outlined will turn old dogs into top dogs.

If:

- staff are adequately trained
- quality control systems have been developed and implemented
- process control has been developed by careful analysis and documentation
- power use of software is mandated

then you will have internal standards which deliver the benefits ISO envisaged and staff who are freed to concentrate on doing what they do best whether that is design, typesetting, web design, coding or whatever.

3,259 words

