

InDesign: Innovation for Japanese Publishing Workflows

Impact on Productivity and Return on Investment

When Desktop Publishing arrived in the market in the late eighties, it was based on a formidable promise: to replace the expensive and complex tools of traditional print production by standardized desktop software and cheap, easily replaceable personal computers. And despite strong initial doubts from professionals, DTP rapidly revolutionized publishing in a large part of the world - in countries, that is, which use Latin scripts.

There was a simple reason to this success: while desktop page layout software such as PageMaker and QuarkXPress could not provide all the bells and whistles of a high-end composition system, they provided enough functionality to start producing professional looking print products. **The situation for the Japanese market was completely different, however.** While QuarkXPress was available relatively soon in a version which offered some basics for Japanese type setting, **many professionals felt - and still feel - that desktop tools are not good enough to produce the quality of type setting and font handling their products require.** As a result, a majority of Japanese publishing still uses traditional type setting systems

When Adobe InDesign arrived on the market three years ago, it came with the promise to offer many high-end Japanese publishing features previously unavailable on QuarkXPress, or requiring costly add-on programs: **InDesign provides grid-based composition, as well as a number of refinements such as a very precisely programmable ruby-function, as well as a number of other typographic subtleties specific to Japanese publishing.**

About this Report

This report is based on productivity and return on investment research conducted in 2002 by Pfeiffer Consulting for Adobe Systems. This research has been adapted and expanded to cover specific aspects of Japanese print production and typography in detail: **specific productivity benchmarks for Japanese typesetting have been devised and conducted by Takashi Sasaki of ImageExplain, using Pfeiffer Consulting's productivity benchmark methodology.** These benchmarks compare real world productivity of InDesign 2.0 J, compared with a QuarkXPress-based publishing workflow, including specific extensions for Japanese typography. **Additional productivity benchmarks were conducted to measure the impact of original functionality in InDesign, such as support for drop-shadows, transparency effects, as well as tight integration with applications such as Adobe Photoshop and Adobe Illustrator. For more details about the methodology of the benchmarks and the hardware configurations used please see the Methodology side-bar on page 3.**

Major Findings

- InDesign 2.0 J offer **many high-end typographic features for Japanese typesetting** previously only available from high-end composition systems
- Integrated functionality can provide Adobe InDesign 2.0 with **important productivity increases over QuarkXPress-based workflows.**
- **Close integration with Adobe Photoshop and Illustrator** increases productivity of InDesign 2.0 in many design and publishing workflows.

About Pfeiffer Consulting

- Pfeiffer Consulting is an independent technology research institute and consulting operation focused on the needs of **publishing, digital content production, and new media professionals.**
- Download the full **InDesign 2.0 J Productivity Benchmark Report** at www.pfeifferreport.com.

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InDesign: a New Approach to Publishing

Major Points

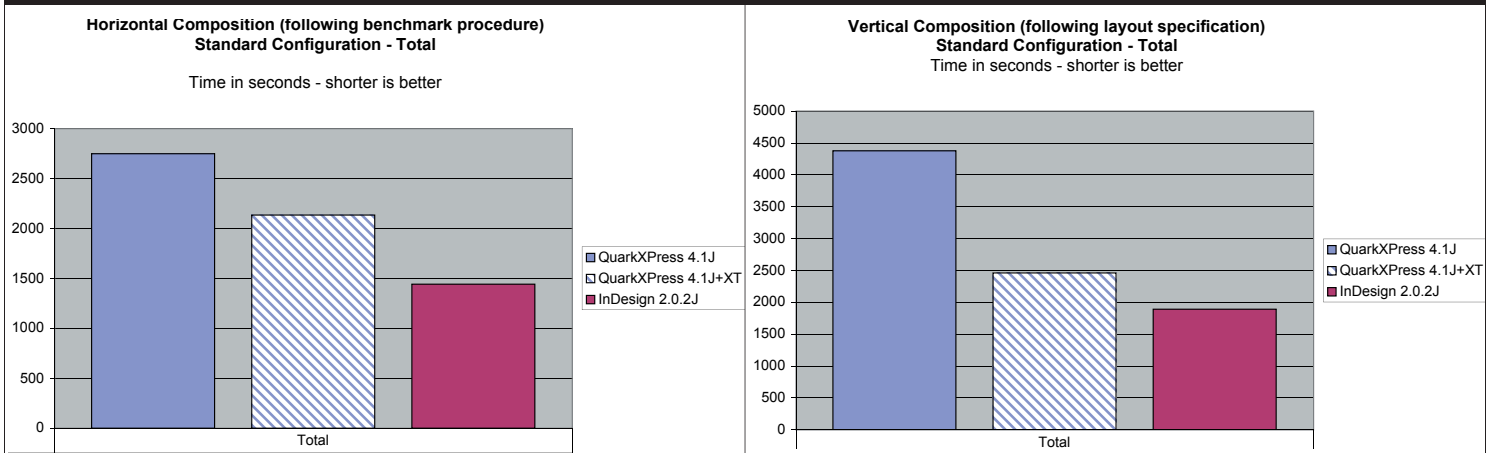
- InDesign offers **a new approach to desktop publishing** which provides increased creative freedom within the page layout application
- High-end typographic features in InDesign 2.0 result **in greater productivity in both vertical and horizontal typesetting**
- InDesign is more productive than QuarkXPress based workflows, even when equipped with special extensions for Japanese typography.

Desktop publishing the way we know it today was defined in the second half of the 1980s, by the arrival of programs such as Aldus PageMaker, followed by QuarkXPress, as well as the indispensable additional graphics and image processing applications, Adobe Illustrator, MacroMedia Freehand and of course Adobe Photoshop. The way these programs work together has hardly changed over the years: there is the main page layout application, in most cases QuarkXPress, which is responsible for setting type, and integrating it with graphic elements created in one of the other applications.

In this classic DTP workflow, the role of the page layout application is simply that of an aggregator: compared programs such as Adobe Illustrator or MacroMedia FreeHand, the creative possibilities of QuarkXPress are relatively limited. This means that up to now for many designers, the creative part of the work does not really happen in QuarkXPress, but in Illustrator and Photoshop.

This is particularly true in Japan, where licensing constraints of typefaces often oblige designers to create a complete page in Illustrator, and to transform characters into outlines before the page is placed in a QuarkXPress file for output. Obviously, this way of working can become very convoluted, and even overbearing when designers are trying to create very elaborate pages. **Going back and forth between creative applications and page layout program also has a strong negative impact on the productivity.** (We will discuss these aspects in detail later in this report).

Productivity Comparison: Horizontal and Vertical Composition



Benchmarks conducted for this project measured the productivity in Japanese type setting, both for horizontal (left) and vertical composition (right). The benchmark procedures closely mimicked the way professional publishers work, and included revision cycles. (Please see the full benchmark report for more

details). QuarkXPress was tested in the standard configuration, as well as equipped with specialized extensions for Japanese typography (middle bar of the chart). Nevertheless, productivity is significantly higher with InDesign 2.0.J (Time in seconds. Shorter is better)

Methodology

This report is based on international market research and market specific productivity benchmarks conducted by Pfeiffer Consulting for Adobe Systems. **Benchmarks concerning specific Japanese publishing requirements, were defined and supervised by Takashi Sasaki of ImageExplain** (based on Pfeiffer Consulting's methodology for productivity benchmarking).

Two types of benchmarks were conducted: composition productivity benchmarks specific to Japanese typographic requirements, and application integration benchmarks. **Market specific page layout assignments included:** Vertical composition benchmark, horizontal composition benchmark, complex page layout, (including Illustrator and Photoshop integration). **Additional benchmarks** measured the impact of InDesign-specific functionality on overall productivity. For more details on systems configurations and benchmark methodology, please download the complete **"InDesign 2.0 J Productivity Benchmark Report"** at <http://www.pfeifferreport.com>

Configurations

All benchmarks were conducted on the Macintosh platform. Each benchmark was conducted once on a standard configuration, corresponding to the average equipment in a Japanese publishing environment, as well as on a high-spec configuration.

Standard configuration: 400 Mhz Power Macintosh G3 with 256 MB of RAM

High-spec configuration: 1 Ghz Power Macintosh G4 with 512 MB of RAM

Software: The most recent commercially available version of each software package was used. (QuarkXpress was not only tested "as is" but also with widely used extensions for Japanese typography.) To represent real-world working conditions as closely as possible, no scripting was used during any benchmarks.

For more information, please contact: research@pfeifferreport.com

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Desktop Publishing in Japan

In Japan the situation of DTP is even more complex: while Quark has released two versions of its flagship page layout program for the Japanese market (version 3.x and 4.x respectively) publishers in Japan were much more hesitant to move their production to Desktop Publishing (DTP). There's a good reason for this: in countries using Latin scripts for typesetting, QuarkXPress could claim that, without offering all the refinements of high-end type-setting systems, it nevertheless had all the tools necessary to start working and producing professional-looking output.

Not so in Japan: while QuarkXPress supports Japanese characters and some of the essential requirements for Japanese typesetting, it falls short of high-end publishing systems such as the well-established Shaken system in many ways. Of course, extension developers have moved in and created some additional modules for Japanese typesetting. **Nevertheless, Japanese publishers have not taken to DTP tools in the same way publishers in countries with Latin script fonts have done.** (Reliable market figures are very hard to come by, but it is commonly estimated that at best 30-40% of Japanese publishing is done with DTP tools, while in the west, print production has practically completely switched from traditional methods to computer-based tools)

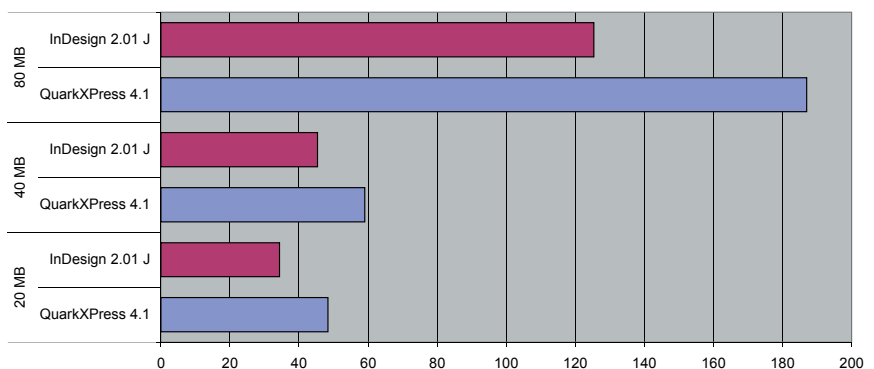
A New Approach to Japanese Publishing

From its' inception, InDesign aimed at providing very high-end typographic features. This is true for western typography (the program offers some type-setting refinements which have never been replicated in DTP systems before), and particularly for the Japanese market. The list of high-end typographic controls included in InDesign 2.0 J is comprehensive: the program offers a sophisticated ruby function, as well as kerning on the kana level; tracking of parenthesis and punctuation marks is fine-tuned to correspond to specific Japanese requirements. But it is in association with the potential of the new OTF fonts which support kanji variants and specific kana for horizontal and vertical composition that the typographic potential starts to shine.

In short, InDesign is setting out to bring the typographic quality of high-end typesetting systems to the DTP user. By doing so, it has the potential to bring enormous changes to the way in which publishing is done in Japan. This report measures some of the productivity gains professionals can expect. The most important impact of Adobe's program, however, could be to bring the quality of high-end typography to a completely desktop computer-based workflow.

Photoshop Integration: Productivity Gains

PS Roundtrip - Standard Configuration - Total
Time in seconds - shorter is better



The fact that InDesign can work directly with native, multilayered Photoshop files brings consistent productivity gains over a workflow where a file needs to be flattened and saved to a different format. This chart shows the productivity gains for a round-trip to edit a 20, 40 and 80 MB Photoshop file and update the layout in QuarkXPress 4.1 and InDesign2.0. (Time scale in seconds - shorter is better)

Productivity Gains in Magazine Workflows

Major Points

- **Close integration with Adobe Photoshop and Adobe Illustrator** gives InDesign a clear productivity advantage in many magazine publishing workflows.
- Integrated support for frequently used options such as transparency and drop shadows can **significantly increase productivity in magazine production.**
- The **mature support of Japanese typography** offers productivity increases in composition and throughout through revision cycles.

The Challenge of Magazine Publishing

Magazine publishing is a very interesting challenge for any page layout application: while the appearance of books and newspapers has changed relatively little since the advent of Desktop Publishing, magazine publishing has taken on many of the possibilities offered by the new generation of graphics and design tools.

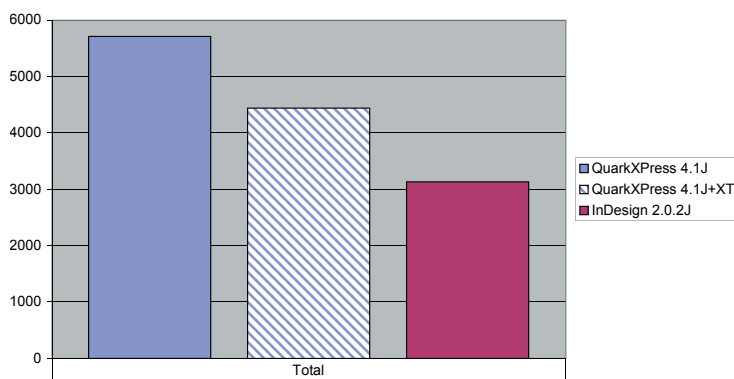
Specifically in the Japanese market, the arrival of InDesign could have a significant impact on production methods in magazine publishing. There are a number of aspects to this. One of the more fundamental ones is that Adobe's page layout program supports the new OpenType fonts, which are a revolution in itself, especially for the Japanese publishing world. (Please see the sidebar on font issues.)

But beyond font handling, **InDesign offers a completely different approach to the integration between the main page layout application and the indispensable graphics applications, Adobe Illustrator and Adobe Photoshop.** We have already seen that in a classic DTP workflow, the page layout application plays the role of an aggregator: it allows the designer to combine text, photographic images and vector graphics.

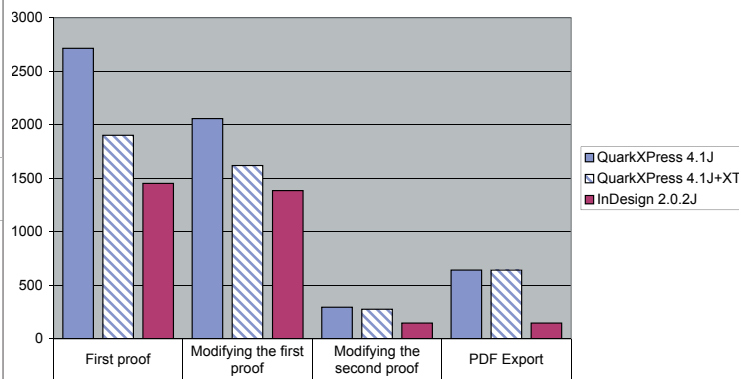
However, before InDesign, these applications had only very limited design possibilities. In a traditional DTP workflow most graphic effects such as an

Complex Page Layout: Major Productivity Measures

Complex Layout Productivity Benchmark - Standard Configuration - Total
Time in seconds - shorter is better



Complex Layout Productivity Benchmark - Standard Configuration - Detail
Time in seconds - shorter is better



Phases of the productivity benchmarks conducted for the complex page project included composition related tasks (typesetting headlines as well as body copy) as well as graphics related work: creation of a stroked headline, and creation of a transparency effect over a placed photograph. InDesign is almost twice as

productive in the benchmark than the standard version of QuarkXPress 4.1. When compared to QuarkXPress equipped with special extensions for Japanese typography, InDesign is still almost 50% faster. (Time in seconds. Shorter is better.)

OCF vs OTF Fonts: Profound Changes in the Japanese Font Landscape

In terms of Font Formats and typographic requirements, the Japanese market is much more complex than Western countries. In Western countries, PostScript fonts took over from proprietary font formats in the late eighties, and currently the market is beginning the transition to OpenType fonts.

While a typical Roman font counts a few hundred glyphs, a complete kanji font from a traditional vendor can contain over 20 000 characters - and obviously, the cost of creating such a font can not be compared with the cost of creating a typical roman font.

PostScript Type 1 OCF fonts arrived on the Japanese publishing market along with the first wave of DTP tools. They have, however, some significant limitations. First of all they lack many of the characters necessary in professional publishing environments: OCF fonts contain around 6000 kana, which meant that production companies needed to add external character fonts.

As an added problem, Windows and Macintosh versions of the same OCF fonts have severe cross-platform compatibility issues, linked to variations of the character size information and

to the order of external character sets. In short, it is impossible to send a page layout file from Macintosh to Windows without running into text reflow problems.

OpenType or OTF fonts solve many of the problems associated with PostScript font. OTF fonts based on the AJ 1-5 specification contain a much larger glyph set of around 15 000 characters, including alternate kana for vertical and horizontal composition and special ruby glyphs. OTF fonts also contain alternate kanji variants necessary for some publishing jobs.

Another important aspect are printer fonts: with OCF, there is the need for high-resolution printer fonts which are very expensive and have to be purchased separately for every high resolution device which is used. OTF solves this problem once and for all: there is no more need for a separate printer font - the same font which is used for proofing on a laser printer can be used for final output.

In short, Open Type fonts hold enormous potential for Japanese publishers, and can contribute considerably to making professional level Japanese typesetting with desktop tools a reality.

outline on a headline, a drop shadow, or transparency effects over photographs, need to be achieved in a Illustrator or Photoshop, saved as an image file and then placed in the page layout. **Worse, in many cases it is necessary to maintain different files for the creative work, and for placing a picture in the page layout application.**

This has two immediate implications for the designer: the first one is obviously that graphic effects are complicated to integrate, especially when there are several revisions of the same document which is very common in professional publishing. The second implication is of course that **creative experimentation becomes very time consuming, and that designers tend to stick with the simplest effects, just because the integration between their graphics and page layout program is complex.**

A New Publishing Workflow

When working with InDesign, this workflow is significantly changed: the first major difference is that InDesign offers many of the features that require an additional program in a traditional DTP workflow. **Stroked text, drop shadows, transparency effects, even creating a PDF file from a design can be achieved with InDesign directly.** This obviously results in significant productivity gains (see related article elsewhere in this report).

The second significant change lies in application integration. While InDesign integrates some functionalities of Illustrator and Photoshop, it is obviously not intended to replace these applications. It does, however, feature a much more streamlined integration between the different programs designers use. InDesign can directly open multilayered Photoshop files, displaying the layers which are visible when the file was saved. It can even output a RGB Photoshop file in CMYK, if necessary, thus reducing the need for an intermediary file format such as TIFF or EPS.

Likewise, native Illustrator files can be placed in an InDesign document and are displayed exactly the same way they look in the original application. The productivity gains of this new publishing workflow are very clear when analyzing the productivity figures obtained in the benchmarks conducted for this report.

Last but certainly not least there are the productivity gains linked to composition: **the mature implementation of high-end typographic features in InDesign offers clear productivity gains for vertical and horizontal composition as well as when working with complex documents** It is interesting to note that the considerable productivity gains are obtained during revision cycles, which are usually where print production tends to slow down.

Towards an Integrated Workflow

Many Japanese publishers still use a very traditional approach to the basic editing workflow: basically, the editing and typesetting part are completely separate. After the first round of typesetting, the galley proof is manually corrected and then sent back to the typesetter, who keys in the corrections, and produces another proof, which in turn is manually corrected.

Also, most editors mark up the galley proofs manually to specify typesetting specifications, and send back the corrected galley for the changes to be applied. This is a very time-consuming and labor intensive task, especially when multiple corrections are needed, which is often the case.

Of course desktop publishing offers the possibility to improve this traditional workflow in terms of efficiency - but in the past technical problems, such as cross-platform compatibility and problems related to OCF font technology made it difficult or impossible to create a coherent digital workflow for Japanese publishing.

InDesign could change things considerably on this level: through the use of OTF fonts and PDF files as elements of the approval cycle, the editorial workflow using Microsoft Word and Adobe InDesign can eliminate many of the traditional bottlenecks in professional publishing and typesetting.

Return on Investment: How InDesign Affects Publishing Workflows

Major Points

- Market-specific productivity measures show **significant increase in productivity with Adobe InDesign 2.0** over QuarkXPress-based workflows.
- **Innovative functionality, better integration with Adobe Photoshop and Illustrator, and better PDF support** are key elements of higher productivity.
- Sophisticated typographic features significantly increase productivity in many publishing workflows

What is return on investment? In most industries, the answers are quite simple, but not so in the design and publishing world. Defining ROI for publishers and designers is significantly more complex than simply weighing a financial investment against revenues generated.

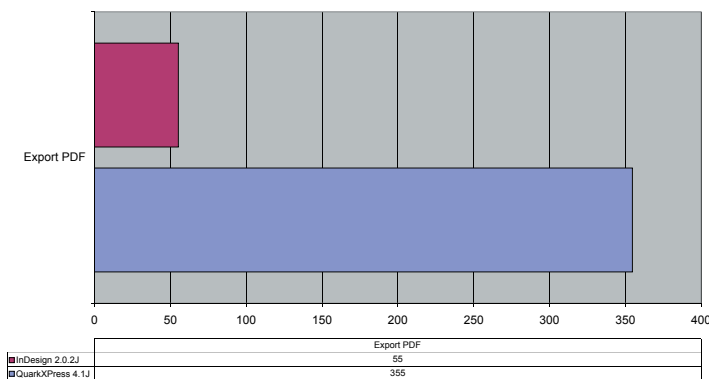
The complexity starts with defining what constitutes the investment. In the case of the adoption of Adobe's InDesign, some professionals only see the cost of the software licence; other are concerned about the cost of training, and for others yet it may go along with an upgrade to Mac OS X, which is, in itself a momentous move. Generally, the bigger the company, the more complex the situation becomes. Similarly, what constitutes an appreciable return on investment is also very variable. **For many design professionals, saving time is not nearly as important as gaining or maintaining the creative edge in a highly competitive market place.**

Savings Through Increased Productivity

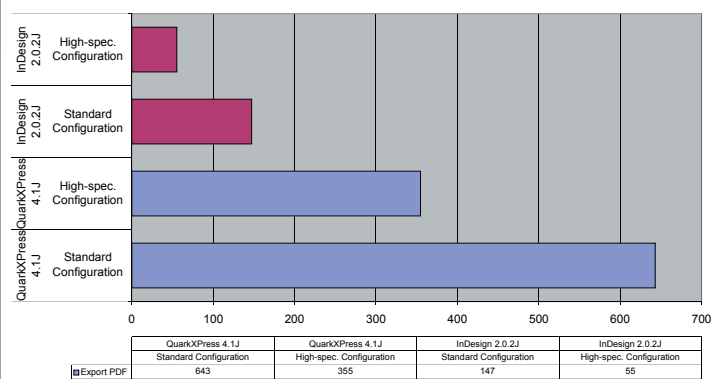
The productivity measures conducted for the research project show significant productivity gains with Adobe's page layout software: **all major test assignments could be completed with InDesign 2.0 J significantly faster than with QuarkXPress based workflows - even when that program was equipped with costly, specialized extensions.** This means increased produc-

Generating PDF Files: Performance Comparison

PDF Export - High-spec. Configuration
Time in seconds - shorter is better



PDF Export - Configuration Comparison 2
Time in seconds - shorter is better



Generating PDF files is a very important part of many publishing workflows. Usually this process is quite complex since it involves generating a PostScript file from a page layout, document.

This PostScript file is then transformed into using Acrobat Distiller. InDesign,

on the other hand, offers the possibility to export a document to PDF without any assistance from Distiller, thus offering very significant productivity gains.

Depending on the configuration InDesign is four to seven times faster than QuarkXPress in this operation. (Time in seconds, shorter is better)

ROI Projections for InDesign based Japanese Publishing Workflows

Productivity Gains and Savings	Productivity Measures QuarkXPress 4.1 J	Productivity Measures QuarkXPress 4.1J + XT	Productivity Measures InDesign 2.0 J	Time Gain Ind 2J - QX 4.1J (in seconds)	Productivity Gain Ind 2J - QX 4.1J (%)	Time Gain Ind 2J - QX 4.1J+XT (in seconds)	Productivity Gain Ind 2J - QX 4.1J + XT(%)	ROI Generated (1 hour @ ¥ 2,500)	ROI Generated (1 hour @ ¥3,500)	ROI Generated (1 hour @ ¥ 5,000)	ROI Generated (1 hour @ ¥ 6,000)
Vertical Composition	4232	2218	1741	2491	58.86%	477	21.51%	¥1,730	¥2,422	¥3,460	¥4,152
Savings over QX 4.1+XT								¥331	¥464	¥663	¥795
Horizontal Composition	2748	2136	1443	1305	47.49%	693	32.44%	¥906	¥1,269	¥1,813	¥2,175
Savings over QX 4.1+XT								¥481	¥674	¥963	¥1,155
Complex Page	5712	4443	3133	2579	45.15%	1310	29.48%	¥1,791	¥2,507	¥3,582	¥4,298
Savings over QX 4.1+XT								¥910	¥1,274	¥1,819	¥2,183
Photoshop round-trip 40 Mb	59	n/a	45	14	23.73%	n/a	n/a	¥9.72	¥13.61	¥19.44	¥23.33
Savings for 10 operations								¥97	¥136	¥194	¥233
Savings for 100 operations								¥972	¥1,361	¥1,944	¥2,333
Photoshop round-trip 80 Mb	187	n/a	125	62	33.16%	n/a	n/a	¥43.06	¥60.28	¥86.11	¥103.33
Savings for 10 operations								¥431	¥603	¥861	¥1,033
Savings for 100 operations								¥4,306	¥6,028	¥8,611	¥10,333
Simple transparency effect	135	n/a	15	120	88.89%	n/a	n/a	¥83.33	¥116.67	¥166.67	¥200.00
Savings for 10 operations								¥833	¥1,167	¥1,667	¥2,000
Savings for 100 operations								¥8,333	¥11,667	¥16,667	¥20,000
Create drop shadow	113	n/a	11	102	90.27%	n/a	n/a	¥70.83	¥99.17	¥141.67	¥170.00
Savings for 10 operations								¥708	¥992	¥1,417	¥1,700
Savings for 100 operations								¥7,083	¥9,917	¥14,167	¥17,000
Export PDF	643	n/a	147	496	77.14%	n/a	n/a	¥344.44	¥482.22	¥688.89	¥826.67
Savings for 10 operations								¥3,444	¥4,822	¥6,889	¥8,267
Savings for 100 operations								¥34,444	¥48,222	¥68,889	¥82,667

tivity, especially in revision cycles, which are usually a important reason for loss in productivity. In addition, the availability of frequently used design options such as transparency or drop shadows within the page layout program, as well as better integration with Photoshop and Illustrator create significant time savings and favor creative experimentation, making art directors less dependent on production departments within or outside of the company.

Reducing the number of steps necessary to achieve a desired result has a number of benefits: saving time is the most obvious, but not the only one. For a designer or art director, fewer steps to a result will mean **less distraction from his or her creative impulse, more latitude to experiment.**

Equally important, in a production environment, **fewer steps will reduce the risk of errors.** This is particularly true for steps which involve saving files in a different format, or with a different name (and sometimes in a different directory.) Each one of these operations contains the potential risk of an operator mistake which can be hard to detect and take along time to correct.

In many cases, significant return on investment will occur because of a streamlined workflow. The productivity measures show that each “round-trip” from the page layout software into Photoshop for editing a native file saves roughly between 30 seconds to a minute. If a designer saves just 6 minutes a day this way for 20 workdays a month, it means that at the end of one month, the tighter integration of InDesign with Photoshop alone has saved two hours!

If a production department relies on these exchanges intensely, savings can be impressive - just for this one feature. Likewise, based on the productivity benchmarks conducted for this report, generating a single PDF file in InDesign can generate significant time savings.

The main return on investment, however, will be in the cumulative effect of the different productivity gains, as the table shows.

This table shows some of the return on investment that integrated functionality in InDesign 2.0 can yield over QuarkXPress based workflows.

How Original Functionality Impacts Productivity

Major Points

- Integrated functionality can provide Adobe InDesign 2.0 with **clear productivity increases over QuarkXPress-based workflows.**
- During the productivity benchmarks, **the creation of frequently used design effects such as transparency or drop shadows took four to five times longer with QuarkXPress and Photoshop** than with InDesign 2.0.
- These productivity increases **can provide important time savings** in ad-production and magazine publishing.

From the outset, Adobe's new page layout software has attempted to "push the envelope" in terms of design functionality, and **many operations that can be achieved easily with InDesign 2.0 previously required the help of other applications such as Photoshop, Freehand or Illustrator.**

But while most users will easily recognize the convenience of such options, it is not as easy to assess the real impact on productivity. For this benchmark project, Pfeiffer Consulting has measured **the time necessary to achieve some common effects, and compared it to a workflow where the designer needs to switch to another program to create the same result.**

The results are impressive: creating a stylized headline with an outline could be achieved in about 30 seconds in InDesign. The same operation takes over four times as long if one has to switch to Illustrator or Freehand to achieve the same result. Creating a tracing paper effect for a text box took just over 40 seconds; the same effect created with the help of Photoshop requires over 3 minutes.

The impact on creativity. One of the most important aspects of these possibilities, however, will be increased creative freedom for designers. Beyond simply providing higher productivity, the integration of options such as transparency gives the designer greater liberty to experiment without having to switch programs. **This is in stark contrast with current design workflows, where the page layout tool is increasingly used as a container for graphic elements created in other programs.** It will be interesting to watch the impact of these possibilities on graphic design over the next few years.

Productivity Gains from Integrated Functionality

The most spectacular productivity gains of Adobe InDesign 2.0 are linked to functionality which is directly available in the program, while QuarkXPress-based workflows rely on other products such as Adobe Photoshop or Illustrator to achieve the same results.

As a consequence, creating drop-shadows or tracing paper effects can be achieved in seconds, while it will take several minutes in a classic workflow.

In addition, the fact that no intervention of another program and additional files is necessary provides designers with greater ease of experimentation and higher throughput when modifications are required.

Create Drop Shadow - Configuration Comparison - Total
Time in seconds - shorter is better

