

PDF Documents vs. Dynamic Data

White Paper



Abstract

This paper has been created to highlight the differences between document-based systems and dynamic database-driven systems.

The information contained in this document represents the current view of ICON on the issues discussed as of the date of publication. As ICON must respond to changing market conditions, it should not be interpreted to be a commitment on the part of ICON, and ICON cannot guarantee the accuracy of any information presented after the date of publication.

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ICON • Information working for you

Registered Office: 18 The Point, Market Harborough, Leicestershire LE16 7QU
 Tel: 01858 468345 • Fax: 01858 469893 • web: www.iconsystem.co.uk

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Executive Summary

Document management systems, whether they are web-based or not, have a number of failings when compared to database-driven content management systems.

The main problems with using a document management system for communicating specification information are as follows:

- A 'manual' must be completed and approved before it can be published
- There is considerable potential for duplication and conflict across documents
- Content changes introduce page formatting and pagination issues
- Document based information is presented in one pre-determined way
- There is often a lack of consistency of presentation across document types and between authors
- Holding large amounts of information in sets of documents created by different authors will only result in un-structured information that no one person can ever have the overview of.

Utilising the ICON System's Design Specification Management solution provides an answer to all of these issues.

Problem Definition

Introduction

Throughout this paper there are a number of references to Adobe PDF files. Whilst it is assumed that these PDF files will have been created from applications such as Microsoft Word, Excel etc. the issues discussed here are just the same as if the source Word or Excel documents had been uploaded directly to a document management system.

Also, throughout this paper, references have been made to Construction Industry related information and practices. The issues presented are the same for any line of business that is dealing with document based specification information.

Fundamentally, PDF files are just 'electronic paper' documents. The problems which apply to publishing specifications and design standards as discreet sets of 'documents' or 'manuals' still apply, regardless of the distribution medium.

The main problems with using a document management system for communicating specification information are as follows:

Completion before publishing

It can often be the case that the majority of a set of specifications are approved and ready for issue, but a small percentage remains unresolved or awaiting final approval. This causes a publication delay to the whole manual until all aspects are signed off.

It is also possible that by the time the original outstanding issues are approved, subsequent ones have arisen, thus delaying the issue even further; sometimes indefinitely.

Duplication and conflict

Often different types of specification share common information. This has to be reproduced for every manual in which it appears. Whilst it is often not a problem when the manuals are first compiled, it can lead to difficulties later on when the data is maintained and updated. There is then a need to identify which documents contain a particular specification requiring an update and make sure that it is amended in all locations.

Page formatting and pagination

PDF documents (and other file-based formats) are pre-formatted to a particular page size, thus allowing a high degree of page layout and formatting to be applied (e.g. page breaks, page numbering etc.).

This can lead to problems if changes are subsequently made, particularly if the new information is longer than the old information, thus causing a 'pagination knock-on'.

In these instances the entire manual may have to be re-issued as the page numbers have changed.

Whilst it is possible to adopt a 'substitution' method, this also relies on the end user inserting the new information in the correct place.

Documents have fixed layouts

Typically, information is presented in a pre-determined format.

For example, finishes schedules may be manually prepared and supported by a series of datasheets for each material. Likewise with lighting schedules, door schedules, equipment schedules etc..

Overcoming this relies upon the compiler ensuring consistency and eliminating contradiction.

Consistency of presentation

Often different aspects of specifications are compiled by different parties, e.g. Architects, M&E Engineers, Signage Specialists etc.. Unless presentation guidelines and / or templates have been issued to the contributors, the resulting documentation is often disjointed and far from seamless.

No possible single overview

Ultimately, the content of a PDF or other file is determined by its creator. In theory, there is nothing to stop duplication, conflicting information and deficient areas appearing in a set of specification information.

Holding large amounts of information in sets of documents created by different authors will only result in un-structured information that no one person can ever have the overview of.

This is probably the most common problem found with file-based systems, in that nobody really ever has an overall picture of exactly what is contained in them.

Solution

Introduction

The scenarios below are borne from over 18 years experience in managing various clients' specifications and standards from paper manuals, through the emergence of electronic paper (PDFs) up to the system ICON has developed today.

The Design Standards part of the ICON System was developed specifically to avoid these problems and to manage the ongoing changes to clients' specifications and design standards in the most effective and efficient way.

Completion before publishing

With the ICON System, sets of information are stored in individual units. This allows the publishing of what is complete, with the subsequent publishing of outstanding information as and when approval is obtained.

As a result, users have total confidence in what has been published. They can also be directed to 'information sponsors' who can be contacted for guidance on information which is as yet unresolved.

Duplication and conflict

The ICON System avoids the need for duplication as all information is entered only once into the system but tagged as belonging to appropriate specifications. In this way, there is only one place to amend the data.

This also provides a useful checklist, if a standard is changing, to be able to instantly see where it is used in a design or specification.

For example, somebody may specify a change of paint colour to the Staff Toilets; the system would flag up that the particular paint colour was also used in the Store Room and the Cleaners' Cupboard, thus allowing a change to be made to all areas if required.

Page formatting and pagination

With the ICON System, the information a user requests is gathered 'on the fly' (for example when displaying a finishes schedule), formatted to suit the user's web browser window and subsequently to the destination printer.

Documents have fixed layouts

The ICON System contains 'dynamic' information, i.e. information that is compiled into a number of views from a common data source. This allows the creation of a schedule or a datasheet from the same set of data, ensuring no contradiction.

Consistency of presentation

The ICON System has two means of addressing this.

Firstly, the use of standard 'templates' through which the data is displayed, ensures consistent presentation. These templates also assist in ensuring an agreed minimum level of specification information is provided.

Secondly, the process by which ICON uploads the information onto the system allows the performing of an editorial role in standardising the presentation of the information via standard style sheets, heading levels, fonts and other styling (paragraph spacing etc.).

This ensures a much more consistent level of presentation across the entire spectrum of data.

No possible single overview

With the ICON System we have a saying, ‘a place for everything and everything in its place’, as the system has an inherent structure in which the data is stored.

This ensures that a door gets logged as a door, a piece of equipment as a piece of equipment and an engineering services specification as just that.

This has two benefits. Firstly it helps identify where information is deficient or missing, and secondly it flags up any duplication or conflict, as the author would be attempting to put two or more sets of information into one pigeon hole.

Business Benefits

Some of the business benefits of using a database driven Content Management System (CMS) are as follows:

- As there is no scope for duplication, there should be no scope for conflicting information which leads to fewer errors on site
- As information can be published as and when it is ready, changes to the specification will start being utilised much sooner
- A consistency of presentation leads to better understanding of the information
- As each section of information has an owner, any queries can be quickly answered and resolved
- The versioning of the specification items allows the user to track back through previous specifications and determine what should have actually been installed, to what specification on a particular date.

Call to Action

If you would like to know more about ICON's Specification Design Standards solution, please either call us on 01858 468345 or use the enquiry form on our website at www.iconsystem.co.uk and we will arrange an online or 'in-person' demonstration for you.

You may also like to view a Sainsbury's Supermarkets case study which can be found at www.iconsystem.co.uk/clients/casestudies/ICONSystemCaseStudy-Sainsbury's.asp.

There is also more information on our Specification Management solution at www.iconsystem.co.uk/system/specificationmanagement.asp.

Acronyms

PDF Portable Document Format

CMS Content Management System

For More Information

References

The ICON System:

ICON
18 The Point
Market Harborough
Leicestershire LE16 7QU
01858 468345
www.iconsystem.co.uk

Adobe Acrobat:

www.adobe.com