White Paper 2014-16

What the Key Parameters to Consider in the Specifications of a Document Control System Are

While all agree on what a proper Document Control System should do in general, there are many parameters to consider when defining the functional specifications of the tool prior to its implementation: depending on the organizational context, the types of projects involved, the specific business challenges, focus and priorities will differ. The organization's culture and maturity may also influence the requirements. The expectations and specifications for a document control tool shall be carefully documented to allow the selection of the solution best adapted to one's business. This White Paper explains the main parameters what will impact the specifications for the right tool.

Guiding Principles

Personnel involved in project management activities will usually agree that project deliverables shall be controlled, in a dedicated system. But when drilling down, what do they really expect from the ideal Document Control System? What should we keep in mind when defining the document control system specifications?

Setting the common grounds for requirements and principles leading the implementation shall be the priority when starting to define a document control system specifications. The guiding principles will focus on high level expectations such as:

- Provide a comprehensive overview and status of documents at any point of time (revision, progress stage, workflows in progress…),
- Ensure information security, right access to the right document at the right time,
- Ensure that, for each revision of a document, system can associate all required related files and properties,
- Ensure full audit trail of changes, comments, approval, transmissions is available (who did what and when),
- Ensure each user has a clear overview of his/her respective tasks,
- Ensure transmissions can be managed and tracked in the system (what was transmitted, when, for which reason),
- Ensure transmissions can involve client, vendors and any other party with full traceability,
- Search facilities (full text, metadata, advanced search).

These requirements can apply to any Document Control System, in any context. But when going into details, what variables do you need to consider as a priority based on your current context?

Document Control is a requirement from ISO 9001 standard to ensure proper retrieval and security of information, control, monitoring of deliverables status, traceability, and auditability. But how does this translate into system functional specifications?

Key variables

The company profile and geography

The challenges are not the same for a 200 people company which will have to handle 3 to 4 projects at the same time, with users located in the same office, and mostly accessing information from the same place, compared to a global company with 30 offices worldwide and 10,000 employees spread all over.

The focus of the system will also be different if the company is acting as a client on projects, as a main contractor or a sub-contractor. A contractor executing large EPIC projects will give special attention to the transmissions capabilities and segregation of documents as it will be managing its own documents, as well as client and subcontractors' documents, and all incurred exchanges.

Impact of projects and company geography is huge. In a centralized company managing single site projects and teams, the architecture won't be a challenge: good performance and storage capabilities are indeed required but it is much more complex and critical for geographically spread companies, projects and teams. In that case, global infrastructure is to be given special attention, possibly with replications and synchronisation between servers installed in various locations. If the documents and data need to be accessible in remote sites, such as fabrication yards or offshore, on vessels where connections may be difficult, it will have to be stated clearly in your specifications and carefully considered when evaluating the right solution.

The Scope

Which documents will be managed in the future system?

The document control system core focus is on the projects deliverables. But what about other project documents such as technical queries, change requests, reports, and minutes of meetings (commonly parked as "uncontrolled documents")? Do you expect your system to cater for this? What about Correspondence: do you expect the document control system to be also a correspondence control tool? If so, this will require dedicated set of requirements.

Specifications shall define which types of workflows need to be implemented (review/approval, parallel/sequential, automated distribution matrix or not, delegations/re-routing) and how documents shall be reviewed (in-line comments/outside comments, both, comment replies...). This is essential for the system architecture and often requires management involvement to decide.

Some document control systems can be set up with automated planning and progress measurement features which make them tools for planners as much as for document controllers. At the minimum, ensure the solution allows easy export of document progress and planning information for planners to use. Advanced features might be required depending on the planners' expectations.

Projects types and size

This will impact some functionalities such as automation of certain processes (e.g. numbering), as well as infrastructure.

The more the system can do and the more automated it is, the more complex it will be to implement and roll-out. So keep the right balance and focus on YOUR business priorities.

The complexity of the set-up for each project start will be less critical for a company that handles large projects that last and don't happen every month, than for a company handling smaller but numerous projects at the same time, possibly fast track projects, where reactive and quick set-up will be required.

Large projects lasting several years may require a more complex system that will take longer to set-up, but allows more configuration options and capabilities, than a small fast track project that will have limited amount of documents and transmissions.

Regarding the storage, performance and scalability of the system, having some benchmark can help to incorporate into your specifications indications on the volume of data and documents to be managed.

Automation is always tempting, but think if it is really required for you, and always keep the possibility to go manual when automation is not really required. (documents numbering, bulk workflows, distribution, planning and progress updates).

The usage

Will the usage of the system be broadened? In addition to core business projects, will departments, internal projects, be willing to use the same tool? If the answer is yes, the specifications will need to take sufficient level of flexibility in account in order not to lock the system into a restrictive usage.

What is expected from the end users? Will they be the ones preparing their documents inside the system or will the document controllers be the only people allowed to create and store documents in the system once provided by authors?

Depending on the business and expectations, some functionality can move from Nice to Have to Must Have: red-lining tool to comment engineering drawings, digital signature, specific portals and accesses for external parties…

The profile of the Document control team and processes

Document controllers' profiles can differ drastically from one company to another or from one country to another within the same company. Some document controllers are used to act as system administrators and may be comfortable with configuring system when a new project starts, or trying to play around with all available features. In the case of a mature document control team with such profiles available, a flexible system with advanced configuration options and features will bring a lot of benefits. If the document control team have more clerks than information systems savvy people, the specifications may be more orientated towards a plug-and-play tool, which may be less complex to set up, at least in a first phase (especially if, on top of this, the IT resources for applications support are limited).

If established document control procedures, archiving and record retention policies exist within the company, they may also impact the system specifications.

What needs to be stated in the specifications document

As a minimum, the specifications for a document control system shall include the following information:

1. Context: why the company is willing to implement such tool, what are the existing tools in place, what are the current challenges and pain points, what business activities and locations are involved,
2. High level Document Control requirements,
3. Technical information and pre-requisites (infrastructure available, volume benchmarking…),
4. Detailed expectations for each module: document preparation and profile, workflows, transmissions, specific tools if required (progress monitoring, mass import and export of data and files for instance, electronic signature…),
5. If expanded scope, dedicated sections for additional modules such as correspondence tracking, or any other specific need,
6. Minimum reporting capabilities,
7. Search engine expectations,
8. High level process flows showing different roles and circulations of documents,
9. Phases: differentiate the *must have* from the *nice to have* (that can be kept for later enhancements),
10. Flexibility: identify which parameters need to remain configurable from a project to another (ideally, limit the amount of hardcoded information).

Conclusion

Project Value Delivery has implemented a number of Document Control systems for regional and global project-driven businesses and can provide benchmarks and a framework for such system's implementation or enhancement. Contact us to benefit from our experience!