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Four Guiding Principles for Designing an IBM FileNet System

Author: Mike Monteiro, Intelligent Automation Solution Consultant

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You are probably reading this because you either own an IBM FileNet installation or are considering making the investment. In either case, this article provides some mental floss for that technology-oriented mind of yours. The material comes from my recent and real-world experiences and observations working with large companies to implement or transition existing LOB (line of business) systems to FileNet as a content management platform.

Given FileNet's robust capabilities and enterprise-level applicability, you should consider it through that lens. To ensure that the technology has long-term success and to maximize the return on your investment, your technology capabilities and corporate vision, objectives and strategy should align. So come along with me and let's ponder the possibilities.

In general, **when developing a corporate technology program, you will want to approach the topic through four areas of interest: purpose, people, technology and process.** As you might expect, different business managers will prioritize each of these areas of interest in a different way. When you can align your plan to each of these four areas, organizational resistance will melt away and success becomes a matter of focus over the duration of the implementation program.

Here's a glimpse into what this white paper will cover:

ESTABLISH PURPOSE

Building your content management strategy

Technicians struggle to rise above their everyday problems and look at the big picture, but it's a necessary thing to do. To articulate a purpose and a strategy for a technology platform like FileNet, you must identify how it will align with corporate directives and initiatives. After all, a company must be committed to the technology for the long run – to own it, staff for it, leverage it and count on it for business success and competitive advantage.

Over the past few years, I found the driving forces for internal technology investments are:

1. Compliance and regulatory concerns
2. Risk management
3. Information governance (particularly around personally identifiable information and protected health information)
4. Liability concerns
5. Operational excellence
6. Process automation
7. Market opportunity and pressures
8. Technology obsolescence

Understanding and prioritizing these motivations to meet the needs of your business will help you arrive at an overall strategy easier. Typically, your strategy should address the following:

1. How content (documents, emails, videos, pictures) essential to business success are:

A) Acquired
B) Indexed and stored
C) Secured
D) Retained
E) Archived and/or disposed of

2. The plan to extract business intelligence from your repository(ies). Can you describe in business terms what this data would be – either in its raw format or aggregated into some business metric?

3. Are you trying to lift one or more key performance indicators (KPIs) by automating, expediting or refactoring the business process? If so, define them.

4. Establish what you're trying to get out of process reporting and metrics.

[recap]

To summarize, you have to know and plan for how FileNet will align with corporate directives and initiatives. If you don't, you will walk down an expensive, unproductive and frustrating path.Many organizations have a variety of concerns about making such a significant investment, so developing a content management strategy beforehand is a helpful way to make sure you and your teams stay on track.

GROOM *your* TEAM

Recommended roles & duties of your FileNet team

Since you are going to have a FileNet "bus," you need to identify the types of seats on the bus. Only after that can you start the process of ensuring you have the right people in the right seats.

I like to put the "people-ware" aspects of technology ahead of hardware and software because in the long run the people on your team determine your success.

As luck would have it, my team recently put the finishing touches on a FileNet staffing recommendation for a client. Here is my take on some of the roles you will need on your FileNet team. There will undoubtedly be some overlap within your organization, but I find that this breakdown of roles aligns the real world with IBM's training paths (as outlined here).

FILENET ADMINISTRATOR

- Responsible for FileNet infrastructure
- Install software
- Annual upgrades/release management
- As-needed patches
- As-needed hotfixes
- Architecture documentation
- Review/maintain log files
- Troubleshoot server
- FileNet security

SOLUTION BUILDER/ DEVELOPER

- Build case solutions (UX layout, queues, roles, pages, tasks, views)
- Configure FileNet workflows
- Desktop configuration (menus, toolbars, plug-ins)
- Search configuration
- Deploy and test solutions
- Promote solutions

ARCHITECT/ TECHNICAL LEAD

- Understand business requirements
- Assess technical solutions (impact on infrastructure, WebSphere, database, storage, OS, web services, etc.)
- Design application architecture
- Design document data model
- Design case data model
- Design security model
- Design integrations with internal/external LOB applications

FRONT END DEVELOPER

- User interface customization
- Navigator developer
- Widget developer
- Develop and register plug-ins/widgets
- Skill set
  - Navigator APIs
  - JavaScript and Dojo
  - Java
  - Web Services
  - HTML and CSS
  - XML/JSON
  - Browser technologies

FILENET DEVELOPER

- Develop workflow components
- Web services (FileNet API based)
- Skill set
  - FileNet Java APIs
  - FileNet REST APIs
  - FileNet .NET APIs
  - XML/JSON
  - Web Services
  - Servlets

INTEGRATION DEVELOPER

- Develop integration with LOB systems
  - Doesn't need to know FileNet, just how to call LOB solutions
- Skill set
  - Java APIs
  - REST APIs
  - .NET APIs
  - Database/SQL
  - MQ Series
  - IBM Integration Bus

If you are a technician, the information presented above may resonate with your own position on the technology team at your company. I assume there are also other non-FileNet roles within your IT organization, such as:

- Server engineers (all variations of mainframe, midrange and LUW)
- WebSphere administrators
- DBAs
- Mainframe team
- Enterprise team – architecture, security, network and firewall
- Storage engineers

This list of talents and skills should impress upon you the strategic nature of operating a successful FileNet-based technology platform.

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This project will take an entire team so make sure you have all the roles delegated beforehand. I recommend a team that consists of an admin, four developers and a technical lead (depending on the size of the organization and magnitude of the project of course).

TECHNOLOGY'S TURN

Four focus areas when setting up FileNet

There are many books about things to consider when designing an enterprise technology platform. The same is true for FileNet, believe me. I have probably read them all. It seems that they all come down to four main considerations:

#1: SYSTEMS ARCHITECTURE DESIGN

Usually enterprise-level groups manage and enforce IT strategy and technology standards. For a successful FileNet project, establishing your guidelines and/or requirements for your enterprise-level groups is a must.

When designing an enterprise technology platform, you have to consider four main things: your systems architecture design, application server, repository design and an integration-friendly

1. Workflow engines, process automation and related metrics
2. Rules engines for codifying and maintaining business rules in a somewhat modular and independent fashion
3. Integration standards to set up data exchange with existing systems of record in your enterprise ecosphere
4. Authentication methods
5. Service Bus technology. If there is a preferred Service Bus technology, does it allow credentials to pass-through to the services distributed on the bus? This is important if you plan to leverage the object-level security that is available to you in a FileNet object store.
6. User experience standards
7. Reporting needs and exporting the operational data for long term reporting

Note: Refrain from using Cognos Real Time Monitor. This product is not going to evolve beyond its current capabilities.

8. Data warehousing for analytics and business intelligence
9. Data retention rules and disposition schedules
10. Business continuity expectations (i.e. for disaster recovery)

#2: YOUR APPLICATION SERVER: IBM CASE MANAGER

IBM Case Manager (ICM) represents a true evolution in approach and thinking when it comes to defining a strategy. Applying ICM is generally misunderstood because of its complexity. However, from that complexity comes capability.

ICM consolidates, leverages and amplifies ALL of the components of IBM's Analytics portfolio to one degree or another. Once you understand how to deploy the technology for business success through one or two applications, then you will be ready to scale the technology to the enterprise.

ICM is several years old and the adoption curve is beyond the early adopters. These days, early adopters are starting their journeys to next generation applications built on ICM, so the solution architecture of those early applications are being put to the test of time. *Were they designed for the enterprise perspective? Do they align with existing systems of record?*

Frequently, the answers are no.

So, from tales of the road and lessons learned, I developed Case Manager models (for the banking and financial services and P&C, life and health insurance markets). And, for the topic at hand, I strongly encourage you to **consider developing a model that will suit you for the long haul as your ICM applications start to stack up.**

My primary recommendation is that you align your user's mindset and experience with the actual work they do. Identify the "business objects" they use, and make those the basis of your enterprise case model. This would allow you to either maintain systems of record data in one location or to synchronize your ICM data with the systems of record data in a straightforward manner.

As advertised, ICM collects data, activity, history and comments related to your business objects in one convenient location. This produces a "single-point-of-contact" scenario for your business clients and users — no matter who the point person is, they will have a full view of the client's record.

#3: IBM P8 CONTENT MANAGER REPOSITORY DESIGN

The name of the game here is taxonomy. When I think of taxonomy, there are three considerations that come into focus.

First consideration: knowing how "wide" to design your object stores and related document classes.

The latest out-of-the-box ICM search technology doesn't allow you to search across object stores. To overcome this, I partition object stores by areas of a company. Below are examples object stores organized by specific operations.

- Corporate Services (legal, finance, board, accounting, facilities management, etc.)
- HR
- Sales & Marketing
- IT
- Operations (supports most of your users including onboarding, client management, reviews, renewals, quality and audit functions)

Second consideration: whether you are going to use ICM and have an enterprise case manager model.

If you do, you will find it beneficial to group case types for operations departments into the same object store. (Clearly, if you are not planning to implement ICM, then this is not a consideration for you.)

Third consideration: the actual layout of the repository objects – folders and document classes.

Several design elements have to come together.

The Overall Information (Data) model
This is the comprehensive information architecture in your enterprise. Once you identify your primary business objects and the data that it takes to create, manage, update and report on them, you will be well on your way. This takes a significant investment in time and effort and usually results in the formal identification of a Data Architect role in the company.

Case Model
With IBM's Case Manager technology, there are four possible levels where you could distribute the data elements.

1. Case (added to Solution Definition and used by the Case Type definitions)
2. Task (added to the Solution Definition, used by Task definitions)
3. Work Item (in the form of traditional work item parameters)
4. Document (document properties i.e. metadata)

Access Control Model aka Security
Besides the typical create, read, update and delete permissions on accessing and managing the content and data, additional considerations come into play. These include the need to dynamically change access based on a) milestones in the business process, b) the role of the person(s) accessing the content, and c) a retention schedule.

Recall that a FileNet repository supports object-level access control which integrates with your Directory Services (e.g. Active Directory). In its final form, **a taxonomy is a Document Class Model which accommodates the safe storage of content and related metadata.** The hierarchy could include a general-to-specific inheritance of document properties, security abstractions, and Case Manager-related considerations. Also vetted is the location of personally-identifiable information and personal health information, to the extent that this data needs to reside as metadata on the objects in the repository.

#4: INTEGRATION-FRIENDLY AUTHENTICATION MODEL DESIGN

A different security-related consideration is authentication and establishing a session with FileNet (and its many related applications). Because of the many integration options available (APIs, web services, REST and JavaScript), my clients are known for creating some interesting integration scenarios. The most common one is P&C (Property and Casualty) insurers that use Guidewire products as systems of record.

While it is technically viable to "embed" a FileNet interface (user interface or some abstraction of the repository), you MUST understand the security implications. The base security capability of FileNet will allow for some fine-grained control over your access control lists in the repository.

If you...

A) Embed FileNet
B) Use a Service Bus and
C) Do not use a single sign on (SSO) technology

….Then you are asking for trouble. This combination will take you down a slippery slope of increasingly complex technical issues.

To say it differently, **if you must embed your FileNet technology stack into another application or platform, insist on an SSO** (or equivalent security token-sharing technology) **so applications can conveniently share credentials.** If you also have Mainframe credentials to consider, then the least-risky approach is to prototype the authentication model before you commit to it.

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When setting up FileNet for strategic and enterprise use, there are four design considerations you should pay attention to:

1. Systems architecture ⟶ Establish guidelines for enterprise-level groups.
2. IBM Case Manager ⟶ Make business objects the basis of your enterprise case model.
3. IBM P8 Content Manager Repository ⟶ Design a taxonomy that accommodates the safe storage of content and related metadata.
4. Integration-friendly authentication model ⟶ Embed FileNet into another application platform and use an SSO.

Keeping these things in mind will ensure a successful project.

That PROCESS Thing

Setting up your development

How do you get from strategy to implementation? Yet again, here is a topic loaded with options, options and even more options. Here are four of my favorites based on recent experiences developing IBM Case Manager (ICM) applications using some variations of the Agile Methodology.

START WITH DOCUMENTED REQUIREMENTS

AGILE: Project approach where every aspect of development is continually revisted throughout the life cycle of the project which consists of work

My first recommendation is that the team **start with a document that lays out the business perspective of the application.** This will facilitate a high-level solution architecture conversation in the Agile Team and a better starting point from a design perspective. It is also a convenient artifact for establishing your initial product backlog (if you plan to use a scrum agile development process).

Usually a business analyst either in the LOB or IT complies with the requirements document. I always suggest that a technical lead or representative from the Agile Team be present to hear and understand the LOB commentary and to help manage LOB expectations early in the project.

SPRINT CADENCE

A frequently-asked question is how long should our sprints be for an ICM-based application?

Agile Teams sometimes attempt to use the Minimum Viable Product metric to establish the end of a sprint or to time the release to production. What I find to be more universally successful is to **align your sprints and testing cycles to your actual production release schedule.** All Release Management functions derive from the release schedule so working backwards from those dates allows time to meet governance and documentation requirements and avoid year-end blackout dates, etc.

COMING TO TERMS WITH ICM DEPLOYMENTS

Time and time again agile teams developing ICM solutions run aground when it comes to promoting an ICM solution (for the first time or as updates to an existing solution). Until they become routine, promotions between environments ALWAYS take longer than expected. Opinions about the promotion process and related tools range from overly-complicated to downright torturous. Everything must be perfect to effectively work the Case Manager Admin Client and FileNet Deployment Manager tools. Without getting into all the specifics of these tools, there are a ton of concepts to understand:

- Environment pairs, half maps
- Mapping security principles, services and data
- Getting the Include options right
- Generating accurate manifests for FDM
- Interpreting the resulting message log

I strongly recommend that you plan early for this necessary step in your development process. Start by identifying a team resource and a backup person to be responsible for these deployments. Train them and expect them to know how to work the tools — especially the basics. Have them practice it (i.e. execute the migration process early and often from the lower environments into subsequent environments). Expect that some of these deployments are simply for practice (i.e. no new code or functionality is delivered into the environment).

SYSTEM MAINTENANCE

This item assumes that you have responsibility for installing, maintaining and updating your FileNet infrastructure. Like most FileNet admins, I'm sure you carefully documented the following:

A) The IBM website where you can download your software
B) Your FileNet and related product licensing
C) Your environment-specific run books
D) The different credentials required to access the administrative end of FileNet

Yes, the list of basic responsibilities for FileNet admins is long. The question is – have you made the critical jump to optimizing your systems too?

I have seen at least three different clients fail to focus on the long-term implications of standing up FileNet for enterprise use. The reality is that you will have a persistence layer (i.e. repositories and databases) that will grow forever into the future. While it's true there are records management tools and techniques out there, you will need to carefully study the IBM-provided recommendations for optimizing your installation and you must prepare early for maintaining your system — in fact, the earlier the better.

I start EVERY client engagement with the following three tips:

1. Use the PELog tool to prune old data from the Process Engine logs.
2. Apply the Events Table index as outlined here for retrieving Case History (displayed on the Case Info widget).
3. Perform the above two steps in the lower environments too, not just in PROD (Production).

While there is extensive IBM documentation here for performance tuning, I consider those three items "must-do" ones.

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So how do you actually set up FileNet? Well, I suggest you start with document requirements. Then determine what your sprint cadences will be and how you will deploy IBM Content Manager. Follow that with a system maintenance plan and you are golden.

So, there you have it — what it takes to stand up a FileNet platform in your organization and start benefitting from it.

When considering your overall design, there are a number of pre-built features and products out there, like Pyramid eXpeditor for Content to speed the process and gain greater functionality.

As an added bonus, you can actually try PX for Content before you buy it. Go to pyramidsolutions.com/px-content-trial/ to participate in a free two-week trial.

Take a look at this video if you want to learn more about PX for Content.

ABOUT THE AUTHOR

Michael Monteiro engages in the purposeful application of technology for successful business outcomes. He has decades of successful experience in corporate IT program development and implementation, enterprise architecture, and system integration. Mike has performed numerous implementations in Advanced Case Management and workflow systems in banking, commercial lending, mortgage origination and insurance (P&C, life and health).

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