Businesses today, realize the importance of being agile and customer centric. Enterprises across the globe are redefining their processes by pushing them closer to end customers and making them highly responsive to the market demands. Technology is acting as the biggest enabler in bringing about this paradigm shift to create more responsive business processes. The most significant development has been the movement from rule based, fully automated processes to human centric workflows with contextual and analytical capabilities integrated at every work step. Situational processes triggered by specific events demand customized handling of work and a high degree of flexibility. This is enabled by the Adaptive Case Management Frameworks (ACMFs), built for managing complex, industry specific processes. It extends process flexibility all the way to the worker engaged in a process as well as to the customer who seeks a special treatment.

Case Management is fast replacing transaction handling as the potent management approach to handle real world, dynamic, customer facing processes through a high degree flexibility and adaption capabilities. With rapidly increasing competition and ever tightening regulatory mandates, customer-specific situational handling has become an even bigger business imperative. Organizations across industries are seen adopting this newfound way of doing business. And the benefits reaped out of it are immense – empowered resources, greater productivity, delighted customers and cost optimization are just few of the many. It is leading to smarter processes that improve business results significantly by placing greater responsibilities into the hands of the case workers.

This publication offers insights into why case management has become a strategic imperative in today’s business environment. It dwells on the essentials of an effective Case Management Framework by elaborating on its various components. Further, it highlights the industry applications and most typical use cases for CMFs. The publication also features a research report from Gartner – “Critical Capabilities for Case Management Frameworks”, evaluating 11 providers against 11 critical capabilities, and across 4 use cases.

I am sure you will enjoy reading the newsletter.

Best Regards,
Diwakar Nigam, CEO, Newgen Software
Enterprises in the digital age are taking on adaptive business models to combat the dynamism fuelled by rapid technological innovations and an ever evolving customer behavior. New ways are being devised to capture and process unstructured data, considered to be of much greater value than the perpetual streams of information getting stored in legacy systems. Resources are being trained to respond to unforeseen circumstances with speed and agility. Growth initiatives are no longer confined to traditionally stronger territories and customer segments, as business leaders venture far and wide into unchartered territories through innovative service and delivery models. This is the onset of a new business order, calling for process agility, operational speed and strategic swiftness. Forward looking organizations have realized that they must respond now or face the imminent danger of getting extinct from the corporate world.

Rising customer expectations and stiff competition along with recent regulatory reforms are driving these game changing developments. With so much happening in the external world, it is natural for the management to look outside for answers. The solution, however, lies within. Traditional hard coded workflows operating across legacy systems are incapable of handling the slightest of drift in the processes. While, Business Process Management (BPM) solutions provide organizations the ability to automate and optimize many critical business processes, it fails to handle dynamic processes that require high degree of human intervention and collaboration at multiple levels to improve the quality of their outcomes. Most BPM solutions are not built to provide business users with tools to access contextual information and the architectural flexibility to apply their domain expertise at critical junctures. This can severely impact the business outcomes and create a huge gap between the desired and final quality of outcome.

Herein, the role of Case Management Framework (CMF) comes to light, as it brings the much needed flexibility and personalization across key processes. CMFs represent an amalgamation of contextual capabilities integrated within the process design and its execution to help case workers make highly informed decisions. They enable world-class customer services and incessant adherence to regulatory mandates by redefining not just the process flow but the entire response mechanism of an organization to different business scenarios. Most CMFs, however, have had their origins as Business Process Management or Enterprise Content management (ECM) solutions. BPM suites provide the platform that allows organizations to build effective CMFs for key business processes. Organizations use BPM suites with a CMF as the foundation for building their case management solutions. Thus, CMFs are essentially agile and specialized process execution frameworks developed on top of a robust rule driven business process management platforms.
This gives rise to some pertinent questions that have left global IT leaders engaged in long deliberations and gripping debates.

- **What is the difference between BPM and Case Management?**
- **What is the need for Case Management?**
- **How can they work in tandem to optimize business outcomes?**

Their answers to these questions will help a lot of businesses overcome the dilemma of having to choose between agility and standardization. A good way to begin will be by understanding today’s business environment and the evolving role of business users. For long, businesses have concentrated on automating straight-through processes to create operational efficiency and cost effectiveness. The process, and not its outcome, has been the main focus with a lot of effort going into identifying all possible operational bottlenecks. Today, however, many visionaries have had a dawning realization that many processes, especially those that involve customers, need to be mapped end-to-end with the prime objective of improving the quality of their outcomes. They need some amount of human intervention to manage deviations not foreseen during the implementation phase. These loosely structured processes commonly referred to as “cases” can pose many challenges when it comes to automation, as they move forward through dynamic workflows based on inconsistent flow of information. In their bid to provide superior and more personalized customer experience, organizations have started treating these unique cases as opportunities to differentiate themselves from the competition. They are thus looking to empower their resources with information and authority, transforming them into responsive ‘knowledge workers’, being sensitive to unique customer needs and yet retaining their speed and accuracy.

Knowledge workers need all the contextual information they can get to improve the quality of their actions and eventually the final outcome. Typically case-related information can be extremely diverse, aggregated across multiple participants, systems, data repositories and enterprise applications. Traditional BPM engines are intrinsically focused, supporting collaboration only at the process level and nothing beyond. Herein, CMF creates a parallel process environment allowing knowledge or case workers to retrieve information from diverse sources, consult with subject matter experts and conduct active analysis of supporting data and content. It supports personalized workbenches for participants (based on role, preferences, access rights and so on) and provides interactive access to tasks, content and other resources.

Another stark difference lies in the objectives of the two management practices. BPM views “process” as the most important organizing theme with a firm focus on its optimization to increase the productivity of the work completed during that process. Repeatability is a key aspect which a potent BPM solution tries to establish for maximizing process efficiency. While, BPM manages process exceptions to some extent by configuring and altering business rules externally, it becomes highly ineffective when exceptions extend beyond the degree of variance defined by business policies. Case Management has a completely different design goal and focuses on the final outcome with quality and not quantity being the most important parameter. It manages processes that are unstructured or ad-hoc through extensive human - human and human – system interactions. Think of it as a police investigation. While it involves series of standard procedures to start with, the case can suddenly take a turn and necessitate a new course of action. The investigator will rely on his skills and all contextual information that he can lay his hands onto. He will collaborate with fellow investigators, forensics and other state departments to move forward and will ultimately be judged by the final outcome and not the speed of investigation.

**BPM Enabled CMFs – The Key to Success**

While case management is the potent approach to drive successful outcomes for critical organizational functions, it relies heavily on the core BPM capabilities to realize its true potential. Modeling, user rights management and work item distribution are key elements in establishing how cases are managed within an organization. Advanced analytics are leveraged to govern the user behavior with insights from past process and market related information. Monitoring and reporting tools allow businesses to track their performance over a period of time and strive for continual improvement.

BPM is thus an integral component of case management frameworks as it provides the platform on top of which enterprises can rope in the much needed process flexibility and business agility. While BPM system, incorporating all business rules and central processes forms the heart of the operations, CMFs can govern its customer facing modules to effectively manage interactions with all external stakeholders. This enables the knowledge workers to capture precise information while improving their work efficiency. The captured information can then be fed into the BPM engine for further processing. This allows businesses to define case templates that can be dynamically changed by case workers to manage the case resolution workflow more effectively.
Case Management Framework Simplified

Key Components and Technology Enablers

Essentially, an effective case management framework (CMF) should be able to initiate, manage and monitor the end-to-end resolution of unique organizational functions (referred as “cases”) and optimize their outcomes to derive maximum value. Unlike the routine and structurally rigid organizational processes, cases are highly flexible in nature advancing through undecided paths chartered by a combination of internal and external events. These random event occurrences provide the context of each work item in a case and determine the tasks/activities to be performed by a case worker. A case involves highly complex and dynamic arrangement of processes with elaborate interactions between content, people and business policies to arrive at a definite outcome. This outcome can be measured against a pre-defined set of parameters to ascertain the success rate for each case.

Case management frameworks (CMFs) are created with problem solving approach wherein advanced technological tools and unique business applications are strategically orchestrated to map the varied business scenarios. A case can be at different stages of its life cycle, which warrants a unique response from the organization. CMF has to track the case right from its origination to its successful fulfillment going through various hierarchical levels of processes including the below:

- Case creation
- Case preparation
- Case Processing
- Case review
- Case approval
- Case closure
- Case archival
- Case approval
- Case closure
- Case archival

Newgen’s Unified Case Management Framework

Newgen’s Case Management Framework is built on its globally recognized ECM and BPM platform. It eases the management of a case life cycle by allowing the orchestration of disparate sources of information through rules defined processes and policies. Newgen’s Case Management offering is highly adaptive, allowing case workers to take swift business decisions and put them in motion in the face of unaccounted and unplanned business occurrences.

The Newgen Case Management Platform empowers Knowledge workers by delivering two core capabilities:

Dynamic Actions Performed on a Case

- Ad-hoc, parallel, sequential and fixed routing of cases
- Available actions are group specific and role specific
- Ability to add more content or work automatically
- Escalations management based on rules
- Ability to save ad-hoc manual cases and tasks as templates
- Ability to suspend cases automatically using events, as well as manually

Collaborative Working on any Case

- Keeps a log of work done by each worker on a case
- Support for parallel and asynchronous work- multiple case workers can work simultaneously on the case
- Web access allows third-party users to collaborate on cases

Source: Newgen
Highlighted below are some of its key components:

**Document Scanning and Capture:** The Newgen Case Management Software provides excellent on-ramp capabilities with its powerful scanning & mobile capture applications. Information and case content may exist in various formats and across different locations. Newgen’s capture applications assimilate all case related content under a single location. They extract, index and classify relevant data from the content captured, providing accurate and actionable information. The solution also has integration adapters for capturing content from external social media platforms like Facebook, Twitter etc. and passing it to the rules engine. The solution optionally OEMs with third party components (SMC4) for capturing social media content by utilizing advanced sentiment and content analytics.

**Agile and Collaborative Workflow:** The case management automation has a workflow automation platform for creating, designing and deploying synchronized and ad-hoc processes. Individual cases may need different stakeholders to participate. Sometimes routing structures may need to be altered as per case requirements. The Newgen Case Management application lets enterprise leaders and case managers create intelligent workflows, allowing them to collaborate across the case. It allows key stakeholders including business owners, business analysts, process analysts, business users and IT users to collaborate across the process lifecycle, right from process design to execution and monitoring. This is made possible through a collaborative Chat option that enables domain experts and process stakeholders to discuss various aspects of the process. Users can interact with other authors, and simultaneously update the process diagram, avoiding redundancy and saving time and effort.

**Document and Content Management:** Newgen's dynamic content management capabilities lets case managers create, manage and share relevant content, information, data and reports to all case stakeholders. The Software has an integrated output management system for outbound content such as correspondence and reports.

**Analytics and Activity Monitoring:** Smart analytics is the lifeblood of Newgen’s Case Management application. The application has inbuilt tools which creates performance indicators, underscoring the health of processes. The tool helps in gauging performance of each of the case elements. This is critical to since the extemporized nature of ad-hoc transactions necessitate constant readiness and monitoring. Leveraging the Newgen Business Activity Monitoring tool, case managers can govern case KPIs, set control charts and manage deviations in real time. The tool creates real time dashboards, providing valuable feedback on how each element of the case is performing. Clearing bottle-necks as they arise becomes easy.

**Storage, Archival and Retrieval:** Newgen has a smart records manager and auto-classification tool which eases storage, archival and retrieval of case related information.
CMF – A Growing Business Necessity

Industry Applications and Use Cases

Today’s businesses stand amidst a sea of change. Technology has completely transformed the traditional style of doing business. Customers have started expecting more out of every transaction, placing greater value in personalization than ever before. Regulatory watchdogs have suddenly spurned up, taking notice of the slightest bit of callousness from enterprises. This challenging business environment demands a radical shift in both the top level business strategy as well as the operational functioning of a business setup.

More and more industries have come to accept the fact that they will come across operational exceptions on a regular basis. These will need to be tackled strategically as they hold the potential of creating the much needed competitive advantage. Contrarily, if mishandled they can fire up to inflict severe damage to the brand image. There has to be a well laid out strategy for handling these exceptions. Merely getting alerts / notifications and filing them away for future reference will not serve the purpose. Thus, the growing importance of case management frameworks across industries stands vindicated.

The concept of case management can be applied to meet varied business needs. Some of the key use cases are listed below:

Investigative Case Management: Adaptive CMFs help businesses in optimizing fraud investigations across numerous organizational processes through advanced analytics and audit capabilities. It dynamically tracks cases right from their origination, maximizing visibility and allowing comprehensive reporting of critical information. Centralized case information helps expedite investigations by analyzing fraud within structured or unstructured data silos. Advanced case management solutions let you prepare case reports automatically through fraud intelligence and threat detection analytics. In fraud investigation process, case management performs two complementary but distinct functions:

- Reactive tasks pertaining to the investigation of alleged or confirmed fraud
- Proactive tasks related to trends identification, and frequent defaulters

Service Request Management: Customer requests can be extremely diverse in nature necessitating specific actions to be taken by the operational team. Some service requests are simple and can be handled using straight through processing, while other require deeper involvement and longer processing times. These are quality driven cases that require extended, role based access to various knowledge bases across the enterprise. Adaptive Case Management solutions ramp up the response mechanism of an organization in terms of its output quality by streamlined flow of contextual information. Some common examples of such cases include customer on-boarding, loan origination, grants management etc.

Incident management: Incidents that can create operational, customer related or statutory issues for an organization need to be identified, analyzed and addressed immediately, to put off any imminent threats to the organization. These are highly unpredictable in nature and warrant a great degree of readiness on the organization’s part. If not managed, an incident can easily escalate into an emergency. There is a strong need for processing speed and sensitivity in these cases. Case management systems enable organizations to establish a consistent method of dealing with incidents from start to finish. This is particularly important in demonstrating compliance with a host of regulations, and minimizing the likelihood of incidents. Natural disasters, employee grievances, patient care come under the purview of this aspect of case management.

Process to Decision Case Management: This category involves more structured processes that are inclined towards quick and accurate decision making. These are governed by pre-determined rules or policies which are often changed or modified based on the organization strategy and/or industry regulations. These rules-heavy cases can be easily managed by advanced Case Management Frameworks (CMFs) which allows run-time change in policies and business rules. Tax filing, compliance case work and mortgage orientation fall under this category.
The above typical use cases of case management can be extensively observed in the following sectors:

1. **Government**: Government institutions are faced with the arduous task to improve their service delivery by providing citizens with anytime anywhere access to diverse information. Case Management presents a perfect opportunity for them to drive transformation at all levels and bring in a greater amount of accountability and transparency into their operations. Case Management enables government to live the promise of truly connected governance. Highlighted below are some government functions that have benefitted from the value offered by Case Management Frameworks.

   - **Social Welfare**: Manages end to end social welfare services like child care, healthcare, food and shelter programs etc. by tracking and integrating the delivery of these previously independent programs across their complete life cycle.
   - **Grants**: Automates grants provisioning process to bring more clarity and accountability by rendering comprehensive decision management capabilities governed through dynamic government policies.
   - **Licenses and Permissions**: Improves technical reviews and decision making to expedite permits and licenses through enhanced process visibility and access to information.
   - **Grievance Redressals**: Helps in capturing citizen complaints and directing them to appropriate government officials for timely redressals. Also, it ensures end to end process mapping to remove any identifiable bottlenecks.
   - **Workers Compensation**: Provides a common platform for the state agencies, employers, insurers, third party administrators, medical providers and workers compensation court to enable quick relief to workers who have sustained an accidental injury or occupational disease during the course of their labor.

2. **Financial Services**: Financial sector is always grappling with large scaled frauds and stringent regulatory guidelines that affect its performance and operational efficiency. Effective case management software takes care of the subjectivity required in managing and resolving risk, compliance and fraud issues. It provides the metrics necessary for bringing in transparency to the below key processes:

   - **Anti-money Laundering Investigations**: Renders advanced tools for detection, investigation and reporting of suspected money laundering and terrorist financing activities.
Customer Due Diligence: Allows enterprises to improve customer relationships through a comprehensive risk evaluation process spanning multiple applications and systems.

Operational Risk Management: Provides in-depth insights across organization to manage all risks, controls and compliance obligations, concerning profitability but reputation.

Trade Compliance: Closely monitors trading activities with dynamic scenarios and detection techniques to identify potentially manipulative or illicit trading practices.

Financial Services Fraud Detection: Enables a comprehensive view of financial activity through enterprise wide surveillance of all accounts, customers and third parties in transactions across all business lines.

Service Request Management: Facilitates smooth operations for critical processes including claims processing, claims assessment, loan origination etc.

3. Healthcare: As the healthcare industry evolves through rapidly changing market dynamics and a series of regulatory reforms, a lot of impetus is being given to the quality of services. Advanced case management frameworks can transform operations for both the payers and the providers into truly person centric programs that meet business, quality and regulatory demands. Following processes have been transformed by leading healthcare organizations using case management solutions:

Care Management: Enables real-time decisioning through advanced predictive and adaptive analytics to develop personalized care plans and deliver a patient centric experience.

Appeals & Grievances Management: Ensures speedy resolutions of complaints, appeals and grievances through skill based, role based and case based case routing with provisions to manage escalations and case exceptions.

Member Enrollment: Bridges the gap between people, process and content to manifold member enrollments through smarter prospecting and faster processing.

Payer-Provider Contract Management: Fortifies contracting process by comprehensively tracking performance against pre-defined SLAs and contractual obligations.

4. Manufacturing: Manufacturing industry has traditionally been a volume centric sector focusing on high productivity and cost optimization. More recently, though, a lot of attention is being given to customer services to deliver a truly delightful experience to them. This service quality is turning out to be the biggest competitive differentiator for companies today. Case management solutions help enterprises to bring in this agility in the otherwise humdrum operations. Below are a few processes that have been transformed through this approach:

Product Development: Leverages advanced analytics and contextual capabilities to predict the market demands and bring in the much needed clarity in the product design.

Quality Management: Ensures highest quality standards by end-to-end process monitoring through comprehensive reporting capabilities.

Order Exception Management: Allows companies to cater to personalized orders with seamless deviations in process flow.

Asset management: Manages the lifecycle of all movable and immovable assets bringing down the total cost of ownership and maintenance for an organization.

Product Recalls: Facilitates easy product recalls through well-defined communication and inventory management programs.

5. Legal: Legal industry is highly document sensitive where contextual information plays a critical in the outcome of a case. Advanced Case Management Frameworks allows legal firms to focus on all key aspects of a case by rendering contextual knowledge from multiple sources. Highlighted below are some processes that can be optimized by CMFs:

Result-oriented Practice: Bolsters the chances of winning a case by organizing (storage, archival and retrieval) every detail pertaining to a case.

Client Communication: Ensures real-time activity streams to be communicated to clients/staff to ensure all internal and external stakeholders are on the same page.

Document Assembly Management: Allows staff members to collaborate swiftly for consolidating complex documentation.
Critical Capabilities for Case Management Frameworks

Case management frameworks built on BPM suites offer an alternative to specialty applications and custom coding to help solution architects and business process directors implement case management solutions. We evaluate 11 providers against 11 critical capabilities, and across four use cases.

Key Findings
Case management solutions treat a “case” as the primary aspect of work to be managed to a successful outcome; workflow is secondary. Cases do not progress serially nor predictably. There are multiple dependent workflows and associated object types, such as data, content, people, machines and policies. These interdependent relationships are the key architectural challenge.

• Case management solutions treat a “case” as the primary aspect of work to be managed to a successful outcome; workflow is secondary. Cases do not progress serially nor predictably. There are multiple dependent workflows and associated object types, such as data, content, people, machines and policies. These interdependent relationships are the key architectural challenge.

• Compared with COTS applications, CMFs built on a business process management suite (BPMS) are easier to change and extend by altering visual metadata via models.

• “Adaptive case management” hype exceeds the reality of what buyers are ready to adopt. Many of these solutions enable case workers to dynamically initiate ad hoc actions on a case, altering the execution behavior directly in the production environment. However, the “devil is in the details” of vendors’ implementations.

Recommendations
Solution architects and business process directors:

• Reconsider potential requirements for “adaptive” behavior in case-style work, and identify appropriate guardrails within which case workers can be empowered to exploit their judgment and expertise without creating chaos.

• Prioritize CMFs running on top of BPMs when it is important to adapt the solution over time without depending on a consulting and system integration (C&SI) or COTS application provider for ongoing customization. These frameworks offer greater flexibility compared with COTS specialty applications for case management domains.

• Use this report to establish your own weighted criteria and narrow a shortlist of CMF providers.
What You Need to Know

CMFs provide a hybrid, alternative approach to COTS applications and homegrown, custom-built development to meet case management solution needs (see “Hype Cycle for Business Process Management, 2013”). These frameworks are partial solutions, meant to accelerate the time to solution and also be extended and tailored for unique requirements by the buyer. When available commercial off-the-shelf (COTS) solutions are not suitable (due to lack of fitness to requirements, cost, inappropriate platforms or inflexibility), then CMFs, such as those reviewed in this report, should be considered. This review of the critical capabilities of 11 CMF providers can help solution architects and business process directors narrow their shortlists of providers for case management solutions. They can also leverage this research to create their own weighted criteria for evaluating CMF providers.

Our analysis of these offerings suggests that this is a market segment with considerable promise, but that it also has several areas of immaturity and room for improvement. Based on the capabilities of these offerings, “adaptive case management” is still more hype than reality. The “adaptive” behavior enabled in these frameworks is typically limited by predetermined options, human tasks only, and role-based privileges. Many use configuration and parametric models that expose predetermined options rather than incorporating techniques and technologies that enable dynamic and ad hoc solution behavior in production mode. Vendors that scored higher in our orchestration capability enable more ad hoc behavior than others.

In some of these solutions, case workers can dynamically initiate an ad hoc (unplanned) action on a case, altering the execution behavior directly. This is particularly useful to empower case workers to create an unexpected action for a case such as request additional data, route the case to be reviewed with someone outside of the defined participants, repeat a prior action, delay until some time frame or event, and so on. Vendors incorporate various techniques to do this, and the implementation details are revealing. Some use techniques that establish constraints — guardrails — around the ad hoc actions that are possible, but without prescribing every possible action. In others, the ad hoc action is open-ended, with little metadata captured in the execution history that would describe its context. Ad hoc action is a crucial concept to adaptive case management. This ability essentially empowers the worker to alter the flow, based on context, judgment, data and policies, rather than following a prescribed set of actions and flow. Enabling ad hoc action in this way requires a fine line to be maintained between chaos and control. Clients interested in this capability should examine tools closely, leveraging our scores in the orchestration capability, to see how well the product enables them to establish that fine line.

At this point, buyer demand for truly dynamic and ad hoc adaptation at the individual case level still tends to be relatively rare. For most users, predefined and user-selected options for case handling are sufficient. However, we recommend that clients reconsider their potential requirements for “adaptive” behavior in case-style work and identify appropriate guardrails within which case workers can be empowered to exploit their judgment and expertise without releasing chaos.

In general, the client reference examples we reviewed demonstrated adaptability (see “Two Factors That Help Identify the BPM ‘Sweet Spot’”) in conjunction with data and process integrity (see “Balance Process Agility and Process Integrity Choices Along the Application Continuum”). These model-driven CMFs offer greater short- and long-term flexibility for case management use cases compared with traditional coded COTS specialty applications for case management domains. The use of visual models (including configuration, parametric and explicit models), declarative languages, and heuristics (based on rules), as well as event- and state-driven technologies, is the main contributor to this greater level of adaptability in solutions. Many of the solutions reviewed here provide out-of-the-box configuration and parametric models, which are valuable for accelerating implementation time, given how difficult it can be to design and architect case management solutions from scratch. However, configuration and parametric models are not as easily extended and modified as explicit metadata models.

In addition, the co-innovation capabilities offered by these frameworks tend to be better than those of COTS applications, although there is still room for improvement in this area. Co-innovation means that the provider’s upgrade procedure respects and protects buyer customizations by minimizing manual reconciliation of changes initiated by the buyer versus changes initiated by the provider.
Analysis

Introduction

Today, many technology buyers in industries beyond government, legal and insurance are thinking about their work as case-oriented rather than simply transactional. Case work is nonroutine; typically, each work item — aka “case” — is a unique situation that involves complex interactions between content, people, and business or regulatory policies to achieve an optimal outcome. Designing a software application to address the needs of this unstructured process style is challenging. The complexity of case handling has kept it a specialized software application area for years.

However, as business becomes more complex, with greater demands for operational oversight, we’ve seen growing market interest in case management as a process style to address complex solution requirements. Many BPMS and intelligent BPMS (iBPMS) vendors have recently expanded their platforms and solution offerings to capitalize on this opportunity, in competition with industry case management application specialists, enterprise content management (ECM) suite vendors, CRM application vendors and C&SIs offering prebuilt or custom-developed solutions. Some providers market themselves using the term “adaptive case management” to distance themselves from traditional BPM providers, and to emphasize the importance of the case as the primary object to be managed to a positive outcome, rather than the workflow (the sequencing of prescribed activities). BPMS vendors offering case management frameworks differ from traditional COTS applications in that they are easier to extend via visual models (such as flow models, integration models, rule models and data models) — not just at design time, but also potentially in production.

CMFs built on a BPMS provide a hybrid, alternative approach to COTS applications and homegrown, custom-built development to meet case management solution needs. Frameworks are partial solutions meant to accelerate the time to solution and also be extended and tailored for unique requirements by the buyer. When available, COTS solutions are not suitable, based on requirements, costs, platform or flexibility issues, CMFs should be considered.

BPMS-based case management frameworks provide the newest and most flexible approach to providing case management software solutions. They enable the solution to evolve over time based on buyer needs, even when those needs diverge from vendor intentions. In this way, they hold the promise of supporting co-innovation. Gartner believes that CMFs that run on top of BPMSs can be especially beneficial, because buyers need architectural best practices and design guidance in this process style. Because case work is complex (nonroutine, contextual, and often judgment- and policy-driven), designing a case management solution is a challenge — one that most solution architects, outside traditionally case-centric industries, have little experience addressing. Features in a platform alone are often not enough to help them architect a solution. For these reasons, we chose to evaluate this segment of the overall market for case management solutions.

This report evaluates BPMS-based CMF providers based on the critical capabilities needed to support a range of use cases that we have observed across multiple industries. This analysis provides a detailed evaluation of 11 CMF offerings against 11 critical capabilities, and across four common use cases. This can help solution architects and business process directors narrow their shortlists of providers for case management solutions.

Product Class Definition

Case work handling is complex and is a more unstructured process style because:

1. The flow of work (the individual case) is nonlinear and not easily predetermined at design time and is often recursive.

2. There are multiple, dependent workflows often running in parallel for different objects in the case.

Although case management applications have existed for years, as a process style, case management is now being adopted more broadly in industries beyond the government, legal and insurance sectors. New areas being considered for case management software designs include mortgage origination, investment portfolio management, fraud detection, HR grievances, university admissions, grant management and customer complaints. The degree of flexibility needed for progressing cases in each of these domains to a successful outcome varies considerably. Case-management-style processes range from areas where the workflow and data interactions are fairly well-understood and somewhat structured (such as insurance claims), to highly diagnostic and investigative case domains, which are far less structured and more challenging. The latter case management domains are increasingly described as “adaptive” or “dynamic” case management.
Case management frameworks are commercial software offerings designed to reduce the complexity of creating case-style process solutions by embedding some “best practices” and architectural patterns into the framework. They provide out-of-the-box design patterns and executable software components (such as case folders, content indexing, role-based workbenches, business rules, activities and milestones) to be configured and extended by buyers. CMFs can be cross-industry design patterns for certain types of case work (such as investigative cases or service request cases), solution-specific (such as offers for university admission or tax filings), or industry-specific (such as U.S. healthcare medical claims). Even frameworks that are application- or industry-specific are still frameworks — that is, partial solutions, not 100% application solutions. Unlike a traditional packaged application, a framework is not meant to provide 100% of needed functionality. It is an out-of-the-box design pattern to jump-start solution creation, meant to be finished by the end consumer.

BPMS-based case management frameworks enable buyers to create a customized solution, using a “middle ground” option between the usual “buy” and “build” choices. Although case management is not a new process style, BPMS-based frameworks are a relatively new product offering. Because case-style work is unstructured and nonroutine, any commercial solution — whether a traditional packaged application or a newer, BPMS-based framework — must provide buyers with an ability to easily adjust, extend the functionality and customize functionality to their needs. The model-driven approach of BPMS-based CMFs makes them easier to modify and maintain than traditional coded and compiled application solutions. The techniques mentioned above to enable dynamic and ad hoc actions also add greater degrees of flexibility than traditional COTS applications. The 11 CMF offerings evaluated here are all BPMS-based (although some leverage explicit models more so than others).

Critical Capabilities Definition
Gartner has defined the following 11 critical capabilities for case management solutions. We apply these critical capabilities to the CMFs included in this evaluation, to help enterprises distinguish the right product based on how they intend to use these solutions:

1. Supports a broad range of content types and content interaction services. Case management solutions always require a broad range of data types, from highly structured data (such as an individual’s name, address or ID) to highly unstructured data (such as scanned images, blueprints, faxes, email communications, and audio or video files). Case workers must be able to interact with this content, using capabilities such as view or read, comment or redline, highlight, update or change, and append.

2. Supports a broad range of collaboration services to facilitate individual and group interactions among all (internal and external) case participants. Collaboration among people (and even potentially with machines?) is incorporated into the CMF so that all interactions are recorded as part of the audit trail of how a case is handled. Multiple technologies are typically integrated to support collaborative interactions, including email, chat, text messaging, social media and e-rooms.

3. Interoperates well with other external content (structured and unstructured data) and process services, such as Content Management Interoperability Services (CMIS), portals, mashups, rule engines, application environments, social data feeds and service-oriented architecture (SOA) application services. Case management solutions often depend on external content and process services from repositories and applications that may not be provided by the CMF provider. The attraction of open, standard specifications (like CMIS and Web services standards) is that enterprises will know that integration with most content repositories and external software will require less custom code or specialized adapters to connect to other systems. Another prospect for improvement is a better content client, such as a portal, rich Internet appliance or a browser-based mashup. Similarly, case handling is often constrained by rules, which may be managed in an external rule engine and thus shared with the content management framework, as well as with other applications.

4. Provides vertical- and horizontal-specific data models, nomenclature, hierarchies and case life cycle management. Some CMF vendors have had substantial experience in specific domains, and have transferred the lessons learned from consistent use cases and data definitions directly into products of high value to buyers. Often, these out-of-the-box configurations are derived from directly supporting customer implementations, or even from industry standards. Other times, they are developed by service partners — whether system integrators or independent software vendors — that will “own” the solution while being certified to the vendor-provided case management platform. Because case management solutions are difficult to design and architect, such out-of-the-box configuration patterns accelerate the implementation time.
5. Provides application adapters to industry- and domain-specific environments, including legacy, industry, Web and social data sources. CMFs must integrate with critical systems of record. Some vendors are certified partners of particular ERP, CRM or other packaged (commercial) business applications. Although integration may utilize standard Web services and enterprise service buses, more typically, specific application adapters are still needed. Case management domains include some industry-specific, esoteric commercial applications. Framework providers are well-acquainted with the specialized applications and data sources that dominate certain industries and domains, and thus offer out-of-the-box specialized adapters to accelerate integration with core systems of record.

6. Provides comprehensive, highly configurable, role-based user experiences. Every manager wants to limit the amount of training, support and change management required to move people into a new case management application. Moreover, experience suggests that role-based user interfaces or workbenches focus and simplify case handling, a critical step toward productivity gains. Idealizing the interface between case workers, the content in cases and the managers who make decisions based on the work in progress is a crucial factor for success. Increasingly, mobile device support and mobile work are key ingredients to the user experience.

7. Provides business-role-friendly dashboards, metrics and reporting. Buyers want a case management solution that enables subject matter experts to manage their own solutions, modify them and get meaningful information from them. CMFs should provide open and easy access to a database of case execution history, as well as appropriate dashboards, models, visualizations, reports and other tools to monitor, analyze and report on case handling. Presentation of the data on mobile devices is a growing requirement as well.

8. Supports a broad range of case orchestration, from highly structured to highly unstructured flows. A CMF and the BPMS it runs on must provide case orchestration for a spectrum of applications, ranging from very structured (predictable sequences of activities, usually represented in a flow model) to very unstructured flow (where progression is not easily predictable, and ad hoc activities may be invoked during the execution of the case). Routing of the case can depend on context metadata, such as skills, expertise or locations. Case handling that requires more-unstructured activities and sequencing is increasingly referred to as “adaptive case management” or “dynamic case management,” and depends on event-driven architecture, rule and complex-event processing, and other technologies that intelligently and dynamically guide the execution flow.

9. Has been proven in deployments with 100,000 cases or more annually. While some use cases for case management do not require the volume capabilities of 100,000 cases or more, others do. Because running a CMF on a BPMS is a new approach to implementing case management solutions, very large-scale case handling is a critical capability in this evaluation. It is especially important for areas such as claims management and fraud investigations.

10. Provides intelligent and versatile onramps and offramps for incorporating content (such as optical character recognition (OCR), document capture, mobile phone cameras, fax servers and e-forms). It doesn’t matter how the information exists, whether on paper, in a digital document, as an image, in an email, in a voice mail or on the Web. Case management will almost always require capture and control with as much upfront intelligence as possible. Intelligent data capture as part of imaging or scanning processes is one aspect that buyers value. Another big value proposition is the ability to convert from paper to e-forms. Using mobile devices for content capture is also important. Coupled with the ability to deliver various inbound content objects to a case folder is the ability to generate outbound content to customers, such as reports, precomposed letters, correspondence or statements. Also important is the ability to export case data using a variety of outbound file formats.

11. Leverages models for easy adaptability of the solution. CMFs leverage visual models (metadata, not code) to enable business and technical roles to easily adjust their solutions as needed. This includes easy adaptation of the design as well as easy adaptation of executable behavior. Adaptive case management, in particular, requires the ability for dynamic and ad hoc adjustments to in-flight work. This means that the execution path of in-flight cases can be immediately adjusted in an unanticipated (ad hoc) way. Case workers may have appropriate privileges to adjust the work by manipulating models, or the environment itself may have built-in rules and other intelligent mechanisms to adjust execution behavior. Models may be parametric, configuration-based or explicit (dynamic).
Use Cases

Gartner has defined four primary use cases for which we evaluated the CMFs included in this report. They are:

- **Investigative cases (data-heavy).** Investigative cases are perhaps the most complex in terms of process (workflow) and content (data). These cases are data-heavy. Often, data is captured as part of the case and relationships between data elements emerge over time. Patterns in the data are discovered, evaluated and acted on. Sequencing of actions on the case is very ad hoc, and event- and milestone-driven. Examples include tax, credit and insurance fraud, as well as legal investigations, background checks and IP protection.

- **Service request (workflow-heavy).** Service request cases involve the fulfillment of a request for servicing. Fulfillment is often a contractual obligation that specifies the service-level expectation. These cases progress in a fairly structured manner, where the appropriate actions and sequences are well-established. In case-style work, a large number of actions and sequences are possible, and the case worker must decide which of the various options are appropriate to the circumstances. These cases are workflow-heavy, meaning that the workflow is complex and critical to how outcomes are achieved. Examples include insurance and healthcare claims, warranty fulfillment, and telecommunications service provisioning.

- **Incident management (collaboration-heavy).** Incident management cases are also highly complex, largely because they don’t happen on a schedule. They are anticipated, but when they actually occur is highly unpredictable. Natural disasters, car or workplace accidents, illnesses, HR grievances, and patient care are examples. These cases often exhibit a greater sense of urgency for resolution than other types of cases. Although these cases are data-intensive (similar to investigative cases), the process is highly ad hoc and situational. Thus, these cases are most distinguished by the degree of collaboration activity required to resolve the case.

- **Process to decision (rules- or policies-heavy).** These cases are more structured than other types, in that the workflow is more easily predicted and can be designed into a software solution. The purpose of these cases is to make a decision, in cases where a well-established and often large set of rules or policies must be followed to make that decision. The rules tend to change frequently, and may be regulated by an industry or a government agency. These cases are rules-heavy. Examples include mortgage origination, compliance audits and tax filings.

Figure 1 shows examples of case-based processes that fall under each of these four use-case categories, and shows the structured vs. unstructured nature of the processes and data associated with each.
Table 1 shows the relative importance of our critical capabilities in the context of these specific use cases.

### Table 1. Weighting for Critical Capabilities in Use Cases

<table>
<thead>
<tr>
<th>Critical Capabilities</th>
<th>Overall</th>
<th>Investigative Cases</th>
<th>Service Request</th>
<th>Incident Mgmt</th>
<th>Process to Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports a broad range of content types and content interaction services</td>
<td>10%</td>
<td>15%</td>
<td>8%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Supports a broad range of collaboration services to facilitate individual and group interactions among all case participants</td>
<td>6%</td>
<td>8%</td>
<td>15%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Interoperates well with other external content and process services</td>
<td>10%</td>
<td>8%</td>
<td>10%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Provides vertical- and horizontal-specific data models, nomenclature, hierarchies and case life cycle management</td>
<td>12%</td>
<td>8%</td>
<td>5%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Provides application adapters to industry- and domain-specific environments, including legacy and Web data</td>
<td>8%</td>
<td>8%</td>
<td>5%</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td>Provides comprehensive and highly configurable role-based user experiences</td>
<td>8%</td>
<td>12%</td>
<td>10%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Provides business-role-friendly dashboards, metrics and reporting</td>
<td>12%</td>
<td>10%</td>
<td>12%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Supports a broad range of case orchestration, from highly structured to highly unstructured flows</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Has been proven in deployments with 100,000 cases or more annually</td>
<td>10%</td>
<td>10%</td>
<td>8%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Provides intelligent and versatile onramps and offramps</td>
<td>11%</td>
<td>8%</td>
<td>5%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Leverages models for easy adaptability of the solution</td>
<td>5%</td>
<td>5%</td>
<td>12%</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: Gartner (February 2014)

**Inclusion Criteria**

We applied the following criteria for a product to be included in this CMF evaluation:

- The case management solution uses a BPMS to execute the framework.
- The framework provider has demonstrated a focus on CMFs, and its case management solution has been available and actively marketed to buyers for at least 12 months prior to the start of our product evaluation.
- The provider does business primarily in North America and Europe, which is where Gartner sees the strongest buyer demand.
- The provider markets its product across industries, rather than focusing on being an industry specialist.

The CMF supports at least two of the following four uses cases:

- Investigative cases
- Service request cases
- Incident management cases
- Process-to-decision cases

The vendor can provide Gartner with five client references — representing a diversity of industries and use cases — that have had the CMF in production for at least a year.
Vendors Considered but Not Included

The providers listed below were considered for this report but were not included, typically because they did not meet one or more of the inclusion criteria listed above. In a few cases, the provider was not included for one of the following additional reasons:

- We were not aware of the provider when we started the evaluation.
- Some providers declined our initial invitation to participate, and we also later determined they were not appropriate for inclusion. For example, a number of CRM application providers are promoting their case management capabilities, but these vendors primarily focus only on service-request-type cases, which are typical of customer service, rather than the broader set of use cases reflected in this report. In addition, we determined that some providers were not suitable for inclusion due to the timing of our evaluation in relation to their product plans. In one case, the provider’s product was only recently made available; in another, the provider’s product strategy shifted significantly during the course of the evaluation.
- We excluded system integration and professional services firms that offer vertical-industry- or cross-industry-specific solutions built on someone else’s BPMS technology platform. For example, IBM has a number of partners that offer COTS solutions built on the IBM Case Manager. We focused on the providers of the frameworks, rather than solutions built using those frameworks.

- A few of these providers (such as Alfresco and Eccentex) have offerings that execute on a BPM platform, not a complete BPMS (see “MarketScope for Business Process Management Platform as a Service” for a definition of BPM platforms vs. BPMSs):

- AINS (eCase)
- Alfresco
- Appway Numcom
- AWPL
- Column Technologies
- Computas
- DST Systems
- Eccentex
- Hyland Software
- Image Process Design
- Iron Data
- Laserfiche
- Microsoft (Dynamics CRM)
- Northrop Grumman (e.Power)
- OpenText (Assure)
- Oracle (BPM Suite)
- Perceptive Software
- SAP
- XMPro

Critical Capabilities Rating

Based on these criteria, we rated products from 11 vendors. Each of the product sets that meets our inclusion criteria has been evaluated for its critical capabilities on a scale of 1 to 5, with 1 being the lowest score and 5 the highest. Table 2 shows product ratings on the critical capabilities.
Table 2. Product Ratings on Critical Capabilities

<table>
<thead>
<tr>
<th>Critical Capabilities</th>
<th>Appian</th>
<th>BeInformed</th>
<th>BizFlow</th>
<th>EMC</th>
<th>IBM</th>
<th>IsisPapyrus</th>
<th>K2</th>
<th>Kofax</th>
<th>MicroPact</th>
<th>NewgenSoftware</th>
<th>Pegasystems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports a broad range of content types and content interaction services</td>
<td>3.8</td>
<td>3.9</td>
<td>3.0</td>
<td>4.5</td>
<td>4.5</td>
<td>3.8</td>
<td>3.2</td>
<td>3.8</td>
<td>4.0</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Supports a broad range of collaboration services to facilitate individual and group interactions among all case participants</td>
<td>4.5</td>
<td>4.0</td>
<td>3.4</td>
<td>3.2</td>
<td>3.5</td>
<td>3.2</td>
<td>3.6</td>
<td>3.6</td>
<td>3.0</td>
<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Interoperates well with other external content and process services</td>
<td>4.7</td>
<td>4.5</td>
<td>3.0</td>
<td>4.0</td>
<td>3.8</td>
<td>3.6</td>
<td>3.6</td>
<td>3.7</td>
<td>3.0</td>
<td>3.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Provides vertical- and horizontal-specific data models, nomenclature, hierarchies and case life cycle management</td>
<td>3.0</td>
<td>3.5</td>
<td>2.5</td>
<td>4.0</td>
<td>4.2</td>
<td>3.0</td>
<td>3.5</td>
<td>3.6</td>
<td>3.7</td>
<td>3.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Provides application adapters to industry- and domain-specific environments, including legacy and Web data</td>
<td>3.9</td>
<td>3.0</td>
<td>3.0</td>
<td>3.2</td>
<td>3.2</td>
<td>3.5</td>
<td>3.3</td>
<td>3.1</td>
<td>3.5</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Provides comprehensive and highly configurable role-based user experiences</td>
<td>4.6</td>
<td>3.0</td>
<td>3.8</td>
<td>3.8</td>
<td>4.0</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.0</td>
<td>3.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Provides business-role-friendly dashboards, metrics and reporting</td>
<td>3.5</td>
<td>2.7</td>
<td>3.5</td>
<td>4.2</td>
<td>4.0</td>
<td>2.8</td>
<td>3.5</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>Supports a broad range of case orchestration, from highly structured to highly unstructured flows</td>
<td>4.7</td>
<td>4.3</td>
<td>4.3</td>
<td>4.3</td>
<td>4.3</td>
<td>4.0</td>
<td>3.5</td>
<td>3.8</td>
<td>3.9</td>
<td>4.4</td>
<td>4.4</td>
</tr>
<tr>
<td>Has been proven in deployments with 100,000 cases or more annually</td>
<td>4.0</td>
<td>3.5</td>
<td>4.0</td>
<td>3.5</td>
<td>3.5</td>
<td>2.7</td>
<td>3.5</td>
<td>2.5</td>
<td>4.0</td>
<td>4.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Provides intelligent and versatile onramps and offramps</td>
<td>3.2</td>
<td>3.0</td>
<td>2.0</td>
<td>4.8</td>
<td>4.0</td>
<td>4.2</td>
<td>2.8</td>
<td>3.8</td>
<td>3.7</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Leverages models for easy adaptability of the solution</td>
<td>4.6</td>
<td>4.8</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.0</td>
<td>3.8</td>
<td>3.8</td>
<td>3.6</td>
<td>3.8</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Source: Gartner (February 2014)
To determine an overall score for each product in the use cases, we multiplied the ratings in Table 2 by the weightings shown in Table 1. These scores are shown in Table 3, which also provides our assessment of the viability of each product.

Figure 2 shows the overall score for each vendor’s product, based on the nonweighted score for each critical capability.
**Table 3. Product Score in Use Cases**

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Appian</th>
<th>Be Informed</th>
<th>BizFlow</th>
<th>EMC</th>
<th>IBM</th>
<th>Isis Papyrus</th>
<th>K2</th>
<th>Kofax</th>
<th>MicroPact</th>
<th>Newgen Software</th>
<th>Pegasystems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>3.9</td>
<td>3.6</td>
<td>3.2</td>
<td>4.0</td>
<td>3.9</td>
<td>3.4</td>
<td>3.3</td>
<td>3.5</td>
<td>3.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Investigative cases</td>
<td>4.0</td>
<td>3.6</td>
<td>3.3</td>
<td>4.0</td>
<td>3.9</td>
<td>3.4</td>
<td>3.4</td>
<td>3.5</td>
<td>3.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Incident management</td>
<td>4.2</td>
<td>3.7</td>
<td>3.4</td>
<td>3.9</td>
<td>3.8</td>
<td>3.4</td>
<td>3.5</td>
<td>3.6</td>
<td>3.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Service request</td>
<td>4.0</td>
<td>3.6</td>
<td>3.2</td>
<td>3.9</td>
<td>3.8</td>
<td>3.3</td>
<td>3.4</td>
<td>3.5</td>
<td>3.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Process to decision</td>
<td>4.0</td>
<td>3.6</td>
<td>3.2</td>
<td>3.9</td>
<td>3.9</td>
<td>3.3</td>
<td>3.3</td>
<td>3.5</td>
<td>3.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>

The overall score is the sum of the product ratings in the overall use case, multiplied by the weights in the overall use case. It is not an average of the other four use cases. Source: Gartner (February 2014)

**Product Viability Rating**

Product viability is distinct from the critical capability scores for each product. Product viability is our assessment of the vendor’s strategy, and its ability to enhance and support a product throughout its expected life cycle; it is not an evaluation of the vendor as a whole. Four major areas are considered:

- **Strategy** — Includes how a vendor’s strategy for a particular product fits in relation to the vendor’s other product lines, its market direction and its business overall.

- **Support** — Includes the quality of technical and account support, as well as customer experiences with that product.

- **Execution** — Considers a vendor’s structure and processes for sales, marketing, pricing and deal management.

- **Investment** — Considers the vendor’s financial health and the likelihood of the individual business unit responsible for a product to continue investing in it.

Each product is rated on a five-point scale — poor, fair, good, excellent and outstanding — for each of these four areas. The product is then assigned an overall product viability rating (see Table 4).

**Table 4. Product Viability Assessment**

<table>
<thead>
<tr>
<th>Product Viability</th>
<th>Appian</th>
<th>Be Informed</th>
<th>BizFlow</th>
<th>EMC</th>
<th>IBM</th>
<th>Isis Papyrus</th>
<th>K2</th>
<th>Kofax</th>
<th>MicroPact</th>
<th>Newgen Software</th>
<th>Pegasystems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Outstanding</td>
<td>Fair</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Good</td>
<td>Excellent</td>
<td>Good</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Outstanding</td>
</tr>
</tbody>
</table>

Source: Gartner (February 2014)
The weighted capability scores for all use cases are displayed as components of the overall score.

Figure 3 shows the overall scores, while Figure 4, Figure 5, Figure 6 and Figure 7 show the four uses cases: investigative cases, incident management, service request and process to decision, respectively.

**Overall Use Case**

- **Pegasystems**
- **EMC**
- **Appian**
- **IBM**
- **Newgen Software**
- **Be Informed**
- **MicroPact**
- **Kofax**
- **Isis Papyrus**
- **K2**
- **BizFlow**

**Worst Fit to Use Case**
- Supports a range of content types and interaction services
- Supports a broad range of collaboration services
- Interoperates well with content and process services
- Provides vertical- and horizontal-specific features
- Provides industry- and domain-specific adapters
- Provides role-based user experiences
- Provides business-role-friendly dashboards, metrics and reporting
- Supports a broad range of case orchestration
- Has been proven in deployments with over 100,000 cases annually
- Provides intelligent, versatile onramps and offramps
- Leverages models for easy adaptability

**Best Fit to Use Case**

Source: Gartner (February 2014)
Investigative Cases Use Case

- Supports a range of content types and interaction services
- Supports a broad range of collaboration services
- Interoperates well with content and process services
- Provides vertical- and horizontal-specific features
- Provides industry- and domain-specific adapters
- Provides role-based user experiences
- Provides business-role-friendly dashboards, metrics and reporting
- Supports a broad range of case orchestration
- Has been proven in deployments with over 100,000 cases annually
- Provides intelligent, versatile onramps and offramps
- Leverages models for easy adaptability

Source: Gartner (February 2014)
Incident Management Use Case

- Supports a range of content types and interaction services
- Supports a broad range of collaboration services
- Interoperates well with content and process services
- Provides vertical- and horizontal-specific features
- Provides industry- and domain-specific adapters
- Provides role-based user experiences
- Provides business-role-friendly dashboards, metrics and reporting
- Supports a broad range of case orchestration
- Has been proven in deployments with over 100,000 cases annually
- Provides intelligent, versatile onramps and offramps
- Leverages models for easy adaptability

Source: Gartner (February 2014)
Supports a range of content types and interaction services
Supports a broad range of collaboration services
Interoperates well with content and process services
Provides vertical- and horizontal-specific features
Provides industry- and domain-specific adapters
Provides role-based user experiences
Provides business-role-friendly dashboards, metrics and reporting
Supports a broad range of case orchestration
Has been proven in deployments with over 100,000 cases annually
Provides intelligent, versatile onramps and offramps
Leverages models for easy adaptability

Source: Gartner (February 2014)
Process to Decision Use Case

- Supports a range of content types and interaction services
- Supports a broad range of collaboration services
- Interoperates well with content and process services
- Provides vertical- and horizontal-specific features
- Provides industry- and domain-specific adapters
- Provides role-based user experiences
- Provides business-role-friendly dashboards, metrics and reporting
- Supports a broad range of case orchestration
- Has been proven in deployments with over 100,000 cases annually
- Provides intelligent, versatile onramps and offramps
- Leverages models for easy adaptability

Source: Gartner (February 2014)
Appian BPM Suite is one of the highest-scored products in this evaluation, largely due to its core strengths as an iBPMS. BPM Suite provides a unified Web, XML and Java-based architecture inherently designed for the cloud and modern computing styles. Its support for mobility and social-media-style, collaborative user experience is better than that of any other vendor in this evaluation. Many of its case management capabilities are a fundamental part of the platform, and are exposed in its horizontal (cross-industry) CMF to provide design guidance to implementers. The CMF is found in Appian’s Reference App, included in the iBPMS itself. This Reference App is a zip file that contains design templates for case-handling rules, user interfaces and workflows, and also includes user stories and other documentation. These assets are essentially samples of common case objects that are recommended to accelerate development through easy reuse. Although conceptually similar to code libraries, these objects are explicit models — metadata — that can be easily adapted using the visual authoring tools and executed immediately.

For buyers who do not have an ECM repository, Appian also offers its own content repository (which is really a file system for documents).

One of Appian’s best capabilities for case management is its ability to support a broad range of case orchestration, from highly structured to highly unstructured flows. Appian leverages the Business Process Model and Notation (BPMN) 2.0 specification for authoring. BPMN’s “ad hoc” activity is used to enable dynamic and some nonprescribed behavior in the runtime environment. Social tasks address ad hoc human actions. In addition, Appian provides many out-of-the-box Smart Services, which are prebuilt reusable objects (such as rules) that can trigger actions based on a condition or event. Customers can extend Appian’s capabilities by writing their own extensions using Smart Services. Smart Services are also used to enable access to external assets, such as an external content repository. Smart Services, Appian-provided integration technologies and application adapters enable customers to easily integrate existing software assets into their case solutions, including Microsoft’s SharePoint (an unusual capability for a Java-based platform).

Another distinguishing area for Appian is its understanding of the user experience (not just the user interface). Appian’s Tempo layer provides a very social experience to enable case workers to navigate across and monitor a wide variety of data objects, including event streams. Mobility is seamlessly integrated into the Tempo experience, supporting out-of-the-office and field experiences when needed. Case workers can also completely tailor Tempo to their personal interests and preferences as often as they want through visual configuration directly in the production environment. This is particularly valuable in investigative cases in which key information is not yet known, so a highly adaptive experience is desirable. Appian’s capabilities to support human collaboration and data-driven actions contribute to its higher scores for investigative and incident management types of cases than others in this evaluation.

Interactions within less structured content (such as “view,” “redact,” “comment” or “search”), as well as intelligent onramps and offramps for content, are largely provided through partnerships and repackaged technology. Capabilities here are weaker than those of some of the other evaluated vendors. For example, AnyDoc from Hyland Software is integrated for scan and metadata capture. OCR capability and automated correspondence are also not native to Appian. In addition, Appian has only a limited amount of horizontal and vertical solution content of its own. Most of these capabilities come through partners that build on the Appian platform.

Overall, Appian provides an easy-to-learn and easy-to-use environment for solution architects and developers, as well as business analysts and business professionals collaborating throughout the entire process management life cycle. Role-based capabilities are visually obvious in both the design (authoring) environment and the runtime experience (including configurable dashboards and reports, although these are not as out-of-the-box as they could be).
Be Informed

Offering evaluated: Be Informed Business Process Platform 4.2

Be Informed is a small, privately held company based in the Netherlands. Although the product meets Gartner’s definition of a BPMS, its architecture is a bit different from many other offerings evaluated here. Its core strengths come from its direct, declarative models. Unlike other providers in this evaluation, Be Informed layers multiple levels of models, thus nicely separating different aspects of the solution. These aspects are actually four domain-specific languages (DSLs), each of which has a metamodel for its respective aspect. The four layers are:

1. Products & Decisions (primarily the realm of classic business rules)
2. Processes & Activities (the “classic” workflow realm)
3. Registrations (the classic “data” realm)
4. Interaction (the classic user interface and integration realm)

Although the environment is very visual and template-based, it is more appropriate for technical roles than business ones, and it uses an Eclipse-based desktop design, composition and configuration tool.

Its case-handling capabilities are inherent in the platform; there is no separate, cross-industry CMF. Instead, Be Informed offers prebuilt case management solutions primarily for the government sector and financial services. Solutions for the government sector comprise: Multi Permit, Multi Tax, Multi Benefit, Multi Subsidy, Multi Rights Registration, Public Safety & Security, and Intelligent City. They are “multi” in that Be Informed has defined the generic business functions, registrations, portals and design patterns for the products and services in a certain domain, on top of which specific implementations can be modeled. Solutions in financial services comprise: Life & Pensions, Claims Handling Processing, Governance, Risk & Compliance, and Multi Channel Sales & Advice.

In addition to having strong semantic models, Be Informed interoperates very well with external assets, using OSGi Web-services-style invocation and leveraging the Apache Camel (open-source) integration framework. The Be Informed platform also supports very well a broad range of case orchestration, from highly structured to highly unstructured flows. It uses a nonstandard visual notation that separates the flow from the conditions (rules). The presence or absence of a condition determines what happens next, thus enabling very dynamic (although not ad hoc) behavior. The platform can also establish and maintain a hierarchy of metadata. In this way, the platform can manage the interactions with the content and rely on the ECM repository for versioning of the content.

Although operational dashboards come standard, overall reporting and monitoring of metrics are weak. Operational data is available, but little effort has been put into visualization and reporting of the data. Data typically needs to be extracted from the platform and reformatted for a data warehouse or data mart to support reporting.

Be Informed depends heavily on C&SI partners to implement solutions based on its platform at end-user companies. In addition to its advanced architecture and unique constructs, Be Informed Business Process Platform embeds and leverages a considerable amount of third-party technology, including open-source technologies, Microsoft technologies, the Daeja viewer from EMC Documentum, and other relationships for OCR and scanning. This means that there are many “moving pieces” under the covers. In Gartner’s view, this makes for a very complex environment to administer and maintain simply from a versioning and software compatibility perspective. Customers and references with whom we have spoken over the years express a high degree of satisfaction with the product, yet they universally depend on a C&SI partner to maintain the solution.
**BizFlow**  
**Offering evaluated: **BizFlow Plus v.12.1

BizFlow (formerly known as HandySoft) offers BizFlow Plus, a unified platform for designing, implementing and deploying case management solutions. The suite provides a wide variety of case orchestration capabilities. BizFlow Plus supports ad hoc and dynamic workflow steps within a process instance, changes to a structured workflow during that workflow, dynamic human and system routing (for example, forwards and event responses), and user collaboration via discussion boards. It implements an easy-to-use model-driven approach for capturing process metadata. The model is used to drive the execution of the process. However, BizFlow Plus is limited in its business-event-triggering capabilities; it does not support rule-based complex-event processing natively.

BizFlow Plus also has the capability to scale to meet large enterprises’ needs, scoring among the top products in this evaluation. BizFlow is used by customers for case management with more than 100,000 work items annually. It provides a highly scalable and multitiered distributed architecture. The CMF handles case transactions statelessly, in queue-based guaranteed processing with persistent state management in a database. These characteristics enable BizFlow Plus to support large volumes of cases without performance degradation.

BizFlow’s user experience scored on par with the other vendors. It provides a user experience that can be tailored to specific users or groups of users (based on roles, responsibilities and geographies, for example). Similarly, BizFlow Plus provides capable on-demand reporting, analytics, data analysis and configurable dashboards with built-in notifications for tracking day-to-day operations. BizFlow meets our requirements for integration capabilities, providing adapters for several industry-standard ECM and CRM applications. It also provides APIs and a software development kit for more-complex integrations.

While BizFlow is strong in the areas mentioned above, it is weak in its native support for handling content and in vertical framework offerings. Beyond interactions with documents and forms, interaction with less structured content, and intelligent onramps and offramps for content, are largely provided by partner technology. On mobile devices, BizFlow can capture content, but it does not provide native document management capabilities to version the captured content. While BizFlow has been used to solve problems in a variety of industries, many of these solutions have been built by customers or partners on the BizFlow platform and were delivered as part of a C&SI professional services engagement. As a result, some “solutions” are not out-of-the-box commercial offerings from BizFlow but instead come from BizFlow resellers.

Overall, BizFlow provides an easy-to-use modeling and execution environment that is best-suited for customers looking for case management capabilities leveraging their existing content or document management tools and models.

**EMC**  
**Offering evaluated: **EMC Documentum xCelerated Composition Platform (xC) 2.0

EMC Documentum features a balance of content and process management functionality and supports case management solutions and development. Documentum xCP is a fully integrated component of the Documentum Platform 7, which includes core content management with a repository and other components such as intelligent capture (Captiva), and customer communications management (Document Sciences). Documentum xCP is an application development platform that uses a configuration approach to case management solutions, rather than coding, to provide quicker delivery time. EMC has a number of industry case management solutions, along with over 100 certified partner-developed solutions. Documentum xCP can also be deployed as a managed-service, private cloud option using EMC OnDemand. For on-premises private cloud deployments, an automated provisioning and policy-based deployment option called xCelerated Management System (xMS) is available to deploy Documentum xCP software and applications into the VMware private cloud infrastructure.

One of Documentum xCP’s strongest capabilities for case management is its ability to support a broad range of content types and content interactions, ranging from unstructured content to structured data. It provides for management and storage of the content as part of the Documentum platform. In addition, Documentum xCP provides an SOA, handling inbound and outbound messaging and events with standards-based integration adapters and connectors. It also supports CMIS for accessing other content repositories.

The Documentum platform with EMC Captiva and EMC Document Sciences provides good onramp and offramp capabilities. EMC Captiva provides intelligent classification and data extraction for high-volume capture and case-based capture applications for Documentum xCP processes. EMC Document Sciences automates the creation of personalized customer communications and correspondence with multichannel delivery as part of the case-based workflow processes in Documentum xCP.
The adaptability of Document xCP is on par with other case management products in this evaluation. Documentum xCP implements case management patterns to enable runtime configuration in-flight by process workers based on their role, and users can override templated processes with parameters and initiate ad hoc workflows. In addition, xCP includes a dynamic data-modeling mechanism — type fragments — that enables the case model to be enhanced after design time without having to redefine it. Type fragments include new information model and event behavior, and can be consumed at runtime. Business users have the opportunity to enrich the case by attaching different fragments, which could include tasks and additional business changes, to the case. Solution designers have to incorporate type fragments into the initial design to be exposed through configuration at runtime in order for workers to leverage them and adapt to unanticipated case work changes.

Overall, Documentum xCP provides a robust case management platform with a number of frameworks and developed solutions. With a strong partner ecosystem to develop case management solutions and tight integration with Documentum for content management functionality, Documentum xCP can deliver out-of-the-box case management and ROI.

IBM

Offering evaluated: IBM Case Manager (ICM) v.5.2

ICM is a cross-industry case management framework. This framework runs on top of IBM Case Foundation (the original FileNet BPM P8 platform) and includes a FileNet Content Manager entitlement. IBM and its partners offer many industry-specific and domain-specific solutions that leverage the ICM framework. ICM is one of the stronger products in this evaluation, with better than average capabilities in all critical areas. However, with that strength comes complexity.

The complexity of implementing solutions based on ICM derives from two issues. First, the infrastructure under ICM includes multiple IBM technologies as well as many acquired technologies — for example, Cognos (for analytics), Datacap (for content capture and integration with third-party repositories) and Content Navigator (although now included in version 5.2.02). This makes system administration and management of the environment complex. Second, the richness of capabilities offered in the ICM framework makes solution development quite challenging and really requires sophisticated programming skills. Consequently, nearly all customers with whom we have spoken have engaged IBM or partner professional services to lead the development of their solutions (contributing to a high initial investment required to get started). IBM has started to address this issue with a wizardlike front end meant to enable high-level designs for the simplest of cases to be done by less technically inclined individuals. In addition, to address the price and complexity issue, IBM has released a bundle called IBM Content Foundation that is a simpler, lower-cost content management capability that competes with SharePoint. It has the same core content engine, plus the newer Content Navigator UI architecture.

The best capabilities of ICM are its strong content management and content interaction services. ICM not only leverages the IBM ECM repository underneath, but can also easily work with many third-party repositories via the CMIS standard or by leveraging the capabilities of Datacap. The list of interactions with content — not only documents — is extensive (as would be expected of any provider from a strong ECM heritage). These interactions include search, collaborate, revise, tag, scan, view and more. Content Navigator (available during our evaluation phase as version 5.2.02) also extends the interactions with other content and is a much better UI framework than the original Business Space and form UIs. (Migration from the older UIs to Content Navigator requires redoing widget wiring and custom widgets.) Mobility is enhanced also with Content Navigator.

Solutions built in ICM are adaptable to the extent that solution designers anticipate needs for adaptability. ICM’s models are essentially configuration models — and there are many possibilities. For example, at runtime, workers can add ad hoc tasks and take ad hoc actions at their discretion. However, this is possible only if the solution designer grants them this privilege, and if this custom task capability was included in the solution design. Thus, solution behavior is adaptable to the extent that designers anticipate needs for adaptability. Under the covers of ICM are multiple execution engines, including a BPEL engine and the FileNet workflow engine for document and human workflow. JavaScript is also used in places. Although the overall solution meets Gartner’s definition of a direct, model-driven solution framework, execution behavior is not quite as “adaptive” as a few other products are.
Isis Papyrus

Offering evaluated: Isis Papyrus Adaptive Case Management 7.1.6

Isis Papyrus Adaptive Case Management is based on the Papyrus Platform, a proprietary and object-oriented environment developed by Isis Papyrus. The Papyrus Platform is made up of a set of components (metaobject models), including document capture and creation, rules, a library of class definitions, and output management built on the company’s own Papyrus Objects object integration architecture. Isis Papyrus offers many prebuilt solution components in its architecture. Its component library includes data objects, rules and technology adapters. From these components, Isis Papyrus and its partners offer prebuilt business processes that integrate with ERP, CRM and ECM environments, with integration via REST or SOAP. It also provides integration with content repositories via CMIS.

Papyrus Adaptive Case Management is a solution framework that executes on the Papyrus Platform. It provides a model-to-execution paradigm to define work to achieve well-defined process goals. The Papyrus WebRepository enables the modeling of data and content entities for business roles to assemble processes from application-specific framework libraries. Using its prebuilt models, an authorized worker can modify the solution execution (within the boundaries of the predetermined options exposed in the components). Modified executions of the processes can be saved as new templates (and shared) to fulfill certain goals. It is not necessary to create flowcharts; rather, users interactively assemble the various elements into a process and iterate in their use until they become more stable and influence the basic standard template.

In this way, the Papyrus Platform, with its solution frameworks, provides more of a composition environment (in which users assemble prebuilt components, configure them and then create an application environment using them) rather than a development platform. There is an optional BPMN-like designer for establishing and monitoring the workflow. User interaction is created using Papyrus portal technology and leverages widgets for configuring user experiences. Forms are also possible using the Papyrus Correspondence Framework.

The heritage of this company is in the document management and customer correspondence management arenas. The Papyrus Document System for outbound customer communications as well as output management. Another strength of Papyrus Adaptive Case Management is the ease of creating a role-based user experience, including customized views of the process and content. User presentation (the graphical UI) can be defined by role, using Papyrus Widgets. Dashboards can be customized in the Papyrus Platform but have limited analytics and reporting capabilities.

Overall, Isis Papyrus Adaptive Case Management provides an integrated platform suited for more document-centric processes and case work. While this makes the Adaptive Case Management framework more limited in its applicability to our use cases, many of its case management applications provide quick deployment and ROI.

K2

Offering evaluated: K2 Case Management Framework 4.6

K2’s CMF is part of the K2 blackpearl BPM/IS, built completely on top of Microsoft platform technologies. However, the CMF is made available to customers separately, on request. K2 charges for the core BPM products and not for the CMF. K2’s CMF is a general, cross-industry framework that includes some workflow templates, K2 SmartObjects and configuration tooling appropriate for cases. K2 is a longtime key partner to Microsoft. This framework leverages all of the core strengths of the blackpearl platform, which itself leverages core Microsoft application platform technologies, including Yammer for SharePoint, Lync, Windows Workflow Foundation, SQL Server and Excel BI services. Thus, for buyers who have a strong preference and dependence on Microsoft technologies and applications, K2 is a natural add-on.

One of the best aspects of K2’s CMF on blackpearl is its models. Many aspects of a case solution development effort will be accelerated by using K2’s visual models and templates—for reports, dashboards, forms, data access and integration with standard packaged applications. Since version 4.5, K2’s blackpearl platform has been enhanced with a more business-role-friendly wizard in the design environment, making it much easier for business and IT roles to collaboratively build solutions. In addition, K2’s strong leverage of so many familiar Microsoft technologies makes the overall environment more accessible to designers, developers and case workers and keeps it lower-cost than many other providers in this evaluation.

The CMF offers quite good support for dynamic and ad hoc human behavior. The case life cycle is captured as stages (a somewhat prescriptive approach), and as actions are taken, added or triggered based on an event, the workflow is tracked. This dynamic redo capability enables workers to redo actions as many times as appropriate. Declarative rules provide some degree of constraints around ad hoc human actions as well.
K2’s CMF offers very general-purpose, core architectural constructs for cross-industry case solutions. As such, all buyers should expect to do a significant amount of customization to complete their solutions. Per our definition of a case management framework, K2’s CMF embodies architectural guidance for solution developers, but not many prebuilt, domain-specific capabilities. K2 does not offer any vertical-specific domain templates. Instead, K2 has a small number of C&Si partners that are experienced with the framework and offer professional services to build out the required functionality.

Overall, K2’s CMF scores are about average in most of the critical capabilities we have defined, largely because of the way K2 leverages core Microsoft technologies to fulfill these critical capabilities. For example, K2 has adopted Microsoft SharePoint (including Yammer) as the default (but not the only) collaboration and content store for its CMF. Cases are stored in the SharePoint repository and, as a result, inherit all of the interaction services of SharePoint. SharePoint can store both structured and unstructured content (including emails, faxes, video, audio and documents); thus, a case can incorporate and interoperate with such content. K2’s deep integration with SharePoint enables case workers to interact with SharePoint content. K2 integrates with other ECM repositories in a similar fashion, although its integration with SharePoint is the deepest.

Kofax

Offering evaluated: Kofax TotalAgility 6.0

Kofax TotalAgility is a process application platform with strong support for content-centric case management solutions. TotalAgility addresses a wide spectrum of process-related needs, ranging from highly structured and predictable sequences of activities to more dynamic, ad hoc and unpredictable use cases. Its BPM engine provides a combination of predictable and unpredictable event processing capability and supports a broad range of applications and use cases. TotalAgility also provides visual models that enable both business and technical users to easily modify the case management solutions and make dynamic changes to work in-flight in response to both predictable and unpredictable events. Kofax currently has eight solutions built using TotalAgility for a variety of industries. It can be deployed as an on-premises or multitenant BPM platform as a service (bpmPaaS) solution.

TotalAgility is integrated with other Kofax products for onramp and offramp capabilities. Kofax Capture and Transformation products can ingest content in multiple formats and from multiple channels, making images and data available to the case management processes. Kofax’s Communication Server and integration with SMTP servers provide for easy email integration and use of Microsoft Office for late-binding letter composition and mailing. TotalAgility provides integration through several methods, including industry standards such as CMIS, technology adapters such as Web services, and platform-specific adapters for products such as Microsoft SharePoint.

Similar to K2, TotalAgility leverages third-party collaboration tools for internal and external (business-to-business and business-to-consumer) collaboration. It leverages Microsoft products for collaboration, including Microsoft Lync, Exchange and SharePoint. Case management applications can route processes based on Lync presence status; automatically store Lync messages as notes against a case; utilize Lync for process guidance; and use SharePoint for wikis, shared calendar management and collaboration workspaces. This dependence requires release coordination on the part of system administrators across these platforms.

TotalAgility provides extensive process auditing, analytics and dashboarding. Process map analytics enable users to rapidly identify hot spots and to understand how to effectively optimize cost or time with a process or activity. In-flight changes to the process can then be made by the user or automatically invoked based on specific conditions. SLA indicators can be specified for any activity, allowing for quick visualization of process issues. Predefined dashboards and mobile dashboards provide real-time business intelligence. TotalAgility also integrates with Altosoft, an analytics software product recently acquired by Kofax, for cases when broader-based business activity monitoring and analytics capabilities are required.

While built for cooperation in heterogeneous technical environments, TotalAgility is best-suited for Microsoft shops, which can leverage its native integration to many of the Microsoft infrastructure platforms. Service requests and process-to-decision represent strong use cases for TotalAgility.
MicroPact

Offering evaluated: entellitrak Case Management Framework v.2

MicroPact is one of the smaller and more specialized providers in this analysis. Originally a contractor to the U.S. federal government, MicroPact shifted its business model in 2002 to become a software product provider and launched entellitrak in 2006. This product is purpose-built to address the complexity of case handling. Although the core platform meets Gartner’s definition of a BPMS, it is a specialized platform meant for case-management-style processes. Data (rather than workflow) is treated as the primary, first-class object; thus, modeling begins with the data model. Data (both structured and unstructured) and policies (rules) are elevated over procedures (structured and unstructured flows), all driven by content and event states.

The CMF is bundled with the entellitrak platform but is not part of the platform; it is a cross-industry preconfiguration that adds common case management functionality over and above the features of the platform. The framework provides basic out-of-the-box design patterns and executable software components, such as case detail folders, workflow elements, document repositories, contacts (listings of individuals related to a case) and form letters. The platform itself includes role-based security models, user management, searching, reporting, interfaces and interoperability that are common to most case management scenarios. On top of the core framework, MicroPact offers 22 preconfigurations (such as Alternative Dispute Resolution, Equal Employment Opportunity Management, Press & Media Relations Management, Background Investigations, and Workers Compensation Case Processing).

With a strong focus on case data, entellitrak’s best capabilities are its support for structured and unstructured data. Beyond documents, unstructured content support includes video, audio, email, scanned documents and reports. Case workers can collaborate and comment on all types of data that exist in the system pursuant to their roles and permissions. In addition, via the optional document management module, participants can interact further with the content, performing actions such as annotating, commenting, redacting and collaborating on text-based document data. As a Java platform, entellitrak also can interoperate well with external assets via open Web services standards and APIs.

Entellitrak’s other strength is its proven usage in large-scale deployments. The largest deployments are all in U.S. federal government agencies. MicroPact has only recently expanded its sales focus to the private sector, initially targeting primarily healthcare enterprises.

Although MicroPact has good capabilities in other critical areas, many of these capabilities are not part of the CMF. For example, domain-specific adapters that are not part of the CMF are supplied upon request at no additional cost. In addition, mobile, direct scanning, fax and OCR (escan), and portals for constituents external to the organization (efile) are provided in add-on modules that aren’t included in the base CMF. Parts of the business intelligence (BI) or analytics capabilities are also an optional module.

The execution behavior of solutions can be as adaptable as designers deem appropriate for the workforce. Entellitrak uses a combination of parametric, configuration and explicit models. Control over solution behavior is based on design approach and permissions. With permission, workers can dynamically add ad hoc “events,” which are actions and workflows determined by the worker. These models are highly configurable and easy to use. However, they are not very visual; they are very data- and text-oriented. As a platform purpose-built for case handling, entellitrak is better at unstructured flows than traditional structured workflows.

The biggest weakness for entellitrak is its UI capabilities and user experience. The UIs are mostly forms; there are few other choices of UI styles. The user experience is very dependent on role. Workers do not have flexibility to change their own experience. Overall, entellitrak is a young product from a case management domain specialist.

Newgen Software

Offering evaluated: Newgen OmniFlow for Case Management 10.0

Newgen OmniFlow for Case Management is a CMF built on the OmniFlow suite, a BPMS product. The CMF includes both core BPM capabilities and “solution accelerators.” OmniFlow for Case Management has strong BPM and ECM capabilities, including support for managing a broad range of data types, with an underlying repository that is platform-neutral with regard to the format of documents. It provides the ability to associate different types of objects with a case. These objects include processes, documents and structured data attributes, with capabilities such as view or read, comment or redline, highlight, update or change, and append. The product has good onramp and offramp capabilities with strong content capture functionality from multiple sources, including mobile capture, and integrated output management for outbound content such as correspondence and reports.

OmniFlow for Case Management provides a broad range of case orchestration for structured and unstructured flows. It supports case work that is event-driven, or that which requires support for ad hoc responsiveness within specific contexts.
Using its process engine, the product can leverage business rules as it accesses structured data, unstructured content and repositories of process models, and then use analytics to provide reporting and case status, and maintain context throughout a case cycle. Out-of-the-box solution accelerators such as service request management, correspondence management, legal case management, customer onboarding and loan origination have been developed for OmniFlow for Case Management to support rapid deployments. Additional solution accelerators have been developed through Newgen's service partners.

One of the strengths of OmniFlow for Case Management is its user personalization and graphical UI (GUI) support. The GUI architecture is based on a component model where a container called OmniApp is provided. Different desktops and dashboards can be configured for different sets of users and applications by administrators. The product provides default processing desktops for all standard use cases, which can be further configured. An HTML5-based mobile app for content and workflow management is also available for users with features such as viewing, searching, downloading and emailing of case documents on their mobile devices.

Overall, OmniFlow for Case Management provides a strong and configurable platform for case management, with industry solution accelerators for quick deployments.

**Pegasystems**

**Offering evaluated:** Pega 7

As an iPMS market leader with a platform that supports many process styles very well, Pegasystems is one of the highest-rated providers in this evaluation. Pega 7 is an application infrastructure platform that uses an event-state-based architecture. It combines process flow definitions, rule processing, data handling, cross-platform UIs (mobile and other), predictive analytics, business activity monitoring (BAM), content management, application integration and other functions in one direct, model-driven development and runtime architecture. It is a functionally rich and sophisticated Java platform. Pegasystems does not offer a separate general-purpose CMF. Rather, it offers over 20 cross-industry and vertical-industry-specific solution frameworks for many types of case-handling needs. These solutions are additional, licensed, fee-based solutions on top of the platform.

Pega 7 scored well in many areas. This is a mature product, with strong balanced functionality across all of our 11 defined capabilities. Much of this strength derives from its unified architecture and integrated technologies. There is no repackaged technology here; Pegasystems owns it all. When Pegasystems acquires technologies (for example, its recent acquisition of Atemma to enhance its mobile capabilities), it reimplements the capabilities to tightly integrate them into the platform. Internally, Pega is a multilayered set of models and modules, with many APIs, Web services and other interfaces (such as RESTful ones) that can be used to integrate external business applications into the solution.

Another major strength of Pega is its declarative rules language. Rules are the primary mechanism by which solution behavior is controlled, at very fine-grained levels of restriction or freedom. For example, the user experience and UIs are controlled through rules. Rules are also used to control and automate upgrades. Rules are used to intelligently capture content from various onramps, as well as to customize correspondence for offramps. Rules also enable Pega to handle complex, nested case hierarchies very well. Rules enable Pega to support a very wide range of solution behavior, from very prescriptive and controlled to very dynamic and ad hoc, should the designers want to allow that degree of freedom to individuals or groups of workers. In this way, solutions built in Pega 7 have the potential to be more adaptive than those we’ve seen from most of the other providers in this evaluation (although few organizations fully exploit its power).

Although most of the critical capabilities we define in this report have been in the platform for years, they were not readily obvious to solution architects. In version 7, Pega introduced a new visual designer, referred to as its “stage-based” case designer, meant to simplify the visualization and management of the case life cycle and introduce case types and stages. Stages in the new designer reflect the major actions for case handling and represent milestones. Conceptually, milestones are relevant to many types of cases. Similar to project work, many types of cases have dependent tasks or workflows that have to sync up at certain points — milestones. Cases are often reassessed at these points to determine the next most appropriate actions. (Healthcare claims are an example of case handling that often utilizes this concept.) Furthermore, changes in one case can have a ripple effect on other cases. The new designer is meant to help move customers from linear workflow thinking to context and outcome thinking.
Nevertheless, we did not find this new designer that helpful for achieving these goals. Although visually somewhat intuitive for business roles, it is less useful for solution architects. Its chevron shapes aggregate actions into “stages” — milestones — in a list view, visually conveying linear, predictable flow rather than multiple, dependent and potentially parallel flows. Designing dependent, parallel flows is a critical architectural requirement for case management. Thus, we do not find this new designer that helpful for solution architects. Furthermore, there is nothing in the product that helps an architect decide:

1. Is my problem caselike?
2. If it is caselike, should I use the stage-based designer or the traditional designer?

Similar to IBM and EMC, Pega’s sophistication comes at a price — a high price, both in terms of license costs and desirable professional services. Pega’s solution content is strong and often competes effectively with full COTS applications. Unlike traditional COTS applications, Pega’s “build for change” solution frameworks are more easily extended, integrated and configured to meet specific buyer needs. However, most buyers desire professional services assistance to do this work, at least initially, because the development paradigm of Pega is so different from other environments they’ve used previously. Thus, there is a learning curve. In addition, customization of the solution frameworks requires a solid understanding of the out-of-the-box functionality. Pega has many trained and certified partners to deliver these services, as well as a smaller professional services group of its own.

Evidence

1 From our 2013 BPM Hype Cycle report: “Case management frameworks are commercial software meant to reduce the complexity of creating case-style process solutions by embedding some best practices into the framework. They provide out-of-the-box design patterns and executable software components (such as case folders, content indexing, role-based workbenches, business rules, activities and milestones) to be configured and extended by buyers.”

2 In our view, case management is an emerging opportunity under the broad, umbrella “BPM” market, and we have chosen to represent one emerging segment — specifically, CMFs that execute on a BPMS application infrastructural platform.

4 “Co-innovation” means that both the buyers (consumers) of the CMF and the provider can innovate the framework simultaneously and independently in such a way that neither steps on the other’s changes in upgrades. The upgrade procedures respect the separate innovations and protect buyer customizations in such a way as to minimize manual reconciliation of the changes.

5 Unstructured processes are nonroutine business processes that are mostly executed by individuals or small groups of professionals who are collaborating to achieve a business objective. Unstructured process segments depend heavily on human interpretation, collaboration, judgment and expertise for their successful completion.

6 In Gartner’s view, adaptive case management is a subset of case management as a process style, in which case handling needs to be extremely flexible. Instead of modeling the case flow, many adaptive case management solutions focus on modeling interim goals or milestones as critical determinants of case progression toward the desired outcome. Providers emphasize modeling the data and relationships across the resources participating in the case rather than modeling the workflow.

7 An example of person-to-machine collaboration is incorporating a virtual personal assistant into a process or a smart machine that assists in driving or parking a car. Robotic vacuums and manufacturing robots can collaborate with humans to get a job done.

8 Scoring for the critical capabilities was derived from recent independent Gartner research on the CMF market. Each vendor responded in detail to an extensive primary-research questionnaire covering its business and the technical features of its CMF offering. Gartner analysts reviewed and validated this information via requested live product demonstrations and discussion, corresponded with the vendors through the evaluation period, and conducted research checks with customers of these products. Gartner has also conducted more than 550 client inquiries with prospective and current end-user and consultant clients interested in case management solutions during 2012 and 2013.
Critical Capabilities Methodology

“Critical capabilities” are attributes that differentiate products in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

This methodology requires analysts to identify the critical capabilities for a class of products. Each capability is then weighted in terms of its relative importance overall, as well as for specific product use cases. Next, products are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities overall, and for each use case, is then calculated for each product.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor: Most or all defined requirements not achieved
2 = Fair: Some requirements not achieved
3 = Good: Meets requirements
4 = Excellent: Meets or exceeds some requirements
5 = Outstanding: Significantly exceeds requirements

Product viability is distinct from the critical capability scores for each product. It is our assessment of the vendor's strategy and its ability to enhance and support a product over its expected life cycle; it is not an evaluation of the vendor as a whole. Four major areas are considered: strategy, support, execution and investment. Strategy includes how a vendor’s strategy for a particular product fits in relation to its other product lines, its market direction and its business overall. Support includes the quality of technical and account support as well as customer experiences for that product. Execution considers a vendor’s structure and processes for sales, marketing, pricing and deal management. Investment considers the vendor’s financial health and the likelihood of the individual business unit responsible for a product to continue investing in it. Each product is rated on a five-point scale from poor to outstanding for each of these four areas, and it is then assigned an overall product viability rating.

The critical capabilities Gartner has selected do not represent all capabilities for any product and, therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making an acquisition decision.
Newgen’s Product Portfolio

**iBPS**

**Intelligent Business Process Suite**

iBPS provides a platform for business stakeholders to collaborate for designing and executing business processes. With active, on-demand, and predictive analytics, support for social media interactions, mobility, and complex event processing capabilities, iBPS facilitates smart decisions for dynamic process routing, allocation of tasks to the right users, and triggering of actions based on complex events.

**OmniFlow™**

**Business Process Management Suite**

OmniFlow is a platform-independent, scalable Business Process Management Suite (BPMS) that enables automation of organizational business processes. OmniFlow is designed to ease the creation, deployment, modification and management of Business Processes. Built using open technologies, it has seamless integration abilities allowing it to be introduced into any IT infrastructure.

**OmniDocs™**

**Enterprise Content Management Suite**

OmniDocs is an Enterprise Content Management (ECM) Suite for creating, capturing, managing, delivering and archiving large volumes of documents and content. OmniDocs manages Scanned Document Images, Electronic Documents and Emails as records. It also supports seamless integration with other enterprise applications.

**OmniOMS™**

**Customer Communication Management**

Newgen’s Omni Output Management System (O2MS) delivers smarter and targeted communications for better customer experiences. It offers the capability of leveraging prime paper space for customer-centric inline advertisement and consolidation across multiple products. It enables secure communication on improved templates with rich designs and graphical representation of analytics across multiple distribution channels. In addition easy archival & retrieval of correspondences for presentment, and efficient customer request resolution are achieved using this enterprise application.

**OmniReports™**

**Enterprise Reports Management and Archival**

OmniReports stores trillions of computer-generated output pages and reports in a highly compressed form. It has a high-speed ingestion process with simple interactive definitions, enables instant access to terabytes of reports independent of business application, and is fully searchable at field/row/page levels. OmniReports is ideal for sun-setting of business applications as well as optimizing core system performance by purging historical reports.

**OmniScan™**

**Production and Distributed Scanning Suite**

OmniScan is a production and distribution software scanning for document image capture. It supports distributed scanning, image quality enhancement and delivery of documents to business systems.
OmniExtract Engine
OmniExtract is the data capturing solution which extracts business-critical information from image documents and forms. It can extract hand-printed/handwritten characters, optical marks, barcode, machine-printed characters and MICR fonts.

Newgen's Invoice Processing System, with automatic data verification and validation capability, is a solution for automatic data capture from semi-structured invoice documents. It also supports seamless integration with SAP and other ERP's.

ChequeFlow Check Clearing & Payment
Newgen's ChequeFlow is an image based Cheque Processing solution for inward and outward clearing. Advanced and highly configurable sub-systems for Automatic Signature Verification, FOREX Cheque Processing, PDC Management, ECS/ACH mandates, add-ons for Cheque Deposit Machine/Kiosks.

ComplianceManager is an integrated solution for Governance, Risk and Compliance that's geared to ensure compliance with standards, best practices and guidelines of various regulatory acts.

ZapIn Mobile Capture Application
ZapIn is a highly secure application that helps a business executive on-the-move, to capture customer information and instantly initiate its processing at the back-office. ZapIn is available both on Mobile phones and Tablets. The key to the application is our advanced image processing that ensures high quality images and minimal size making it viable to be transferred over a GPRS/3G/4G networks.

OmniCapture Distributed Capture Solution
OmniCapture solution provides a unified platform for multichannel distributed capture. The platform allows documents to be captured from anywhere, anytime and any device and routed to appropriate business applications, processes or content repository.
About Newgen

- Leading Global Provider of Business Process Management (BPM), Enterprise Content Management (ECM) & Customer Communication Management (CCM)
- 1100 installations across 57 countries
- Solutions for Banking, Insurance, Healthcare, BPO/SSCs, Government and Telecom
- Credited with some of the world’s largest implementations
- Innovative culture, consistent R&D investments, 40 patents
- Employee strength 1600+

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“Newgen is ahead of others in the industry. Their solution is converging BPM, DMS with the Enterprise Performance Mgt. into a single comprehensive framework helping companies into practical successful implementations with measurable business outcomes.”

– Marfin Laiki Bank

“Newgen has great products and has a visionary management. Since my association with Newgen, I have seen the company grow in terms of product offerings. With retrospective approach they have a potential to grow further.”

– Abu Dhabi Commercial Bank

“Newgen support team with the spirit of honor and professionalism have always supplied good products and services to us.”

– Johnson & Johnson