

Customer Communications Management Hosted Managed Services Market Update 2nd Edition



MADISON ADVISORS

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EXECUTIVE SUMMARY

Customer communications management (CCM) hosted managed services (HMS) is a technology model that incorporates the critical components of CCM in a single integrated platform. This results-driven model offers a complete end-to-end solution that addresses enterprise communication requirements, relieves the burden on IT resources, and delivers an optimized return on investment (ROI) by shifting from a capital expenditure model (CapEx) to an operational expense model (OpEx). CCM hosted managed services solutions transfers the risks associated with purchasing and installing software to the provider while allowing the enterprise to obtain the full benefits of a CCM HMS solution.

This research is the second edition to Madison Advisors' introductory report, "*Hosted Managed Services: Changing the Paradigm in Customer Communications Management*,"¹ released in October 2015. In our initial report, Madison Advisors provided key insights into the challenges faced by enterprise organizations and how CCM hosted managed services providers developed solutions to mitigate those challenges and fill the technology proficiency gap associated with disjointed technology infrastructures and underutilized CCM software enhancements.

Standing out from the competition is no longer about selling a product or service at the best price—it's about the experience. Advancements in technology and consumer expectations set by leaders such as Amazon, Apple, and Google have many enterprises struggling to keep up. Organizations that provide an exceptional customer experience will reap the benefits of customer loyalty, deeper relationships, and increased sales. How customers perceive their interactions with a particular brand or business is the basic definition of customer experience. It is not limited to a single channel or a one-time experience—it is the sum of all experiences throughout the customer lifecycle and across all touchpoints.

This report will provide an update on the latest trends in CCM hosted managed services and how the research participants have developed or enhanced their offering to help enterprises solve challenges with customer communications and compliance, and increase customer engagement through an enhanced customer experience.

¹ *Hosted Managed Services: Changing the Paradigm in Customer Communications Management*, October 2015 available for purchase at www.madison-advisors.com.

KEY FINDINGS

While conducting this research, Madison Advisors found that there is still some confusion in the market regarding the definition of CCM hosted managed services and how it differs from CCM software solutions. When asked about major competitors, all participants in this research named at least two or three other participants as competitors, and also listed CCM software providers such as OpenText, Quadient, Oracle, SMART Communications, and MessagePoint. In addition to software providers, internal IT was also listed as a competitor since most internal IT believe that they can build the solution cheaper rather than outsource to a third party. Other key findings from this research include:

- Data security concerns, complexity of legacy applications, the size of the hosted managed services provider, and internal IT were highlighted as the primary barriers to adoption of a CCM hosted managed services solution. Lack of executive-level support or internal sponsorship were also noted as barriers.
- The ability to modernize complex, legacy print-based applications to improve design with additional multi-channel delivery is a strong capability that all of the participants offer to their clients.
- The convergence of customer experience (CX) with CCM is becoming more prominent as noted by the newly featured capabilities offered such as payment integration.
- All participants support delivery channels such as social media and personalized video; however, adoption rates are still very low.
- The prioritization of customer experience has some enterprises thinking about creating a CCM Center of Excellence; however, this remains a slow-moving trend with minimal adoption.

The market opportunity for CCM hosted managed services is substantial. Despite some early adopters, significant opportunity still remains in verticals such as financial services, insurance, and others that generate large volumes of transactional communications such as utilities and telecommunication companies. Smaller organizations such as credit unions and savings banks that may typically lack the resources and/or expertise in CCM technology present additional opportunity for this market to grow. Since our last report in October 2015, Madison Advisors has a more optimistic, yet still conservative view of this market, and estimates it to be greater than \$5 billion in the United States alone.

STRATEGY BEFORE TECHNOLOGY

Developing a CCM strategy is analogous to putting together a jigsaw puzzle: to arrive at the solution, the pieces need to be interlocked together correctly. A successful CCM strategy requires all of the critical components to be joined together in an integrated technology infrastructure to manage the entire communications lifecycle from data through delivery. Unfortunately many enterprises struggle to successfully integrate all the puzzle pieces and fall short of achieving their strategic CCM goals. There are several components to a successful CCM strategy and although technology is deemed to be the most critical, the strategy should be defined by the customer journey and take into consideration other critical aspects such as workflow, data security, risk mitigation, regulatory compliance, and the ability to make changes to communications responsively. In addition, many enterprises struggle with implementing a strategy for CCM due to the lack of understanding within executive leadership and buy-in across the organization. Investment in CCM technologies compete with other mission-critical technology budgets and are often overlooked as a priority. Madison Advisors believes that when developing a CCM strategy, a critical step in the decision-making process is to determine whether or not the necessary technology will be developed internally, purchased and integrated into the existing technology infrastructure, or outsourced to a hosted managed services provider. Table 1 provides some opportunities and challenges to consider with respect to these three options.

INTERNALLY DEVELOPED	
Internal IT is responsible for all CCM related development. In this scenario, the focus is typically on document composition and has limited focus on multi-channel delivery such as email or SMS notifications that a document is ready for viewing.	
Opportunities	Challenges
<ul style="list-style-type: none">• Ability to customize and develop CCM related capabilities based on organizational requirements• Ability to manage and control costs associated with developing the solution internally	<ul style="list-style-type: none">• IT projects subject to budgeting cycles and prioritization against a list of competing initiatives• Long development cycles with multiple project phases• Change control requests receive a lower priority• Retention of IT resources• Limited number of IT resources that know and understand the technology• Ability to keep up with and comply with strict regulations• Keeping up with technology and meeting consumer demands• Limited multi-channel delivery capabilities or reliance on a 3rd party print service provider for electronic delivery• Limited expertise on critical components of a complete CCM solution

HYBRID SOLUTION	
Components of CCM related software that are purchased and integrated into an existing technology infrastructure. This option requires some additional development by internal IT.	
Opportunities	Challenges
<ul style="list-style-type: none"> • Ability to select and incorporate best-in-class solution components means less reliance on IT to develop the entire solution • CCM software solutions will provide enhanced features and capabilities such as business rule creation, content management, responsive HTML 5 design for mobile or tablet devices, multi-channel or omni-channel delivery • CCM software solutions give business users more control with the ability to manage content, create business rules, and edit document templates 	<p>Same challenges as noted for Internally Developed option above, plus:</p> <ul style="list-style-type: none"> • Challenges with integration of separate components into existing technology infrastructure • IT resources are needed to build the connections to integrate all components together • Point solutions acquired for multi-channel delivery not integrated together • No ownership of product roadmap for point solutions and at mercy of third party for product updates and new functionality • Staying up-to-date with new software releases • No 360 degree view of all customer interactions
OUTSOURCED SOLUTION	
All CCM technology outsourced to a hosted managed services provider who provides all seven of the critical components of a complete solution.	
Opportunities	Challenges
<ul style="list-style-type: none"> • Relieves the burden on internal IT resources • Faster implementation time • Business users have control over variable content, messaging, and change control requests normally managed by IT • Better data management, reporting, analytics, and business intelligence tools • Ability to provide a better customer experience with omni-channel delivery and a quicker time to market • Disaster recovery and compliance risk mitigation • Greater flexibility with print service providers • OpEx vs CapEx financial model 	<p>All of the challenges noted above for Internally Developed and Hybrid Solution options are mitigated with the outsourced solution. Other non-technology related challenges may be:</p> <ul style="list-style-type: none"> • Breaking down internal barriers to adoption of an outsourced solution vs the other two options • Data security concerns if not running within company firewall • Ability to stay on course with the pace of implementation

Table 1 – Technology Strategy Options for CCM

In our initial research report, *"Hosted Managed Services: Changing the Paradigm in Customer Communications Management,"* Madison Advisors identified that CCM hosted managed services as a technology delivery model can help enterprises achieve strategic customer communications goals such as increased customer retention, risk reduction, and revenue enhancement. This model makes sense for numerous reasons, some of which are highlighted below:

- CCM hosted managed services providers offer a set of integrated technology capabilities that enable the end-to-end management of the full customer communications lifecycle.
- Complex technology capabilities are simplified and exposed through a browser-based thin client user interface which empowers business users to create and edit document templates, manage variable content, and manage business rules associated with communications.
- All technology components are fully hosted and supported by the provider within their own private cloud; therefore, enterprises can stay up-to-date with technology without additional capital investment.
- If requested, some of the providers will set up a hosted environment within a client firewall.
- Additional services such as communications redesign, business process reengineering, integration with client core systems, rationalization of document templates, and training and education for business users are also offered by the providers.

CCM hosted managed services not only changes the technology delivery model, but it changes the financial model as well. It is a model that is based on buying outcomes versus buying software and represents a shift from CapEx to OpEx. This model also shifts the risk of delivery from internal IT and operations to the hosted managed services provider.

MARKET POTENTIAL FOR NEW ENTRANTS

In our 2015 report, Madison Advisors featured three CCM hosted managed services providers, CEDAR Document Technologies (CEDAR), NEPS, and DataOceans, but indicated that the market was ripe for new entrants such as print service providers, CCM solution providers, and systems integrators. In our opinion, print service providers have the greatest opportunity to penetrate the market, specifically since these organizations already have a large customer base. Historically these organizations were the final step in the document lifecycle responsible only for the physical manufacturing of documents and submission to the US Postal Service for delivery. The logical creation of documents occurred further upstream and was the responsibility of the enterprise client. Today, many print service providers have expanded beyond their offering and provide additional services such as document composition, electronic delivery, and archive.

Since these organizations have built trusted relationships with their existing clients, it is only logical that they progress to become a full-service communications provider and offer a complete solution that starts with data collection and finishes with omni-channel delivery. By doing so, print service providers can offer additional value-added services and stand out from the competition. With print becoming more and more commoditized, it is critical for print service providers to expand their offering and deepen relationships with their existing clients and offer a compelling end-to-end solution to prospective new clients.

"Providing additional value-added services allows print service providers to have a different conversation with their customers; one driven by managing transactions rather than clicks, and outcomes rather than SLAs."

**Warren Lederer, Chief Operating Officer
Madison Advisors**

Our research this year features two new entrants to the market, Content Critical Solutions (CCS) and Bell & Howell. Content Critical Solutions is a print service provider headquartered in Moonachie, NJ. Content Critical Solutions has branded its CCM hosted managed services solution as SmartTouch™. Bell & Howell is a technology solution provider that offers software and hardware to streamline production of high-volume print communications. To create a hosted managed services offering, Bell & Howell partnered with DataOceans and white labeled their platform. Bell & Howell's offering, branded as CX TouchPointsSM will be featured as part of this research.

"Operational savings by itself is no longer enough to sustain business. Service providers need to offer business value to remain competitive. Customers are looking for strategic partners to help them grow and retain their customer base, saving a 1/10th of a penny is simply not worth the effort or risk."

**Ramesh Rattan
President & Chief Executive Officer
Bell & Howell**

BARRIERS TO ADOPTION

The idea of outsourcing customer communications to a hosted managed services provider is often met with apprehension for a variety of reasons, some of which come from internal IT who tend to believe that they can develop the solution or purchase a CCM software solution and integrate into their existing technology infrastructure. Data security and hesitance to send customer data outside the organization's firewall continues to be another barrier as well as concerns and risks associated with transitioning complex legacy applications to a new platform.

A few of the hosted managed services providers featured in this research noted that their company size in comparison to a prospective client has been a barrier to adoption. Despite their relatively small size, these companies offer innovative, successful, and proven technological capabilities with tremendous processing capability and capacity. For example, CEDAR delivers over 3.5 million statements per month for one client and is in the process of deploying another client that generates over 50 million customer communications per year.

"Large enterprises are looking for more nimble, flexible services from innovative technology companies such as CEDAR. Often times, enterprises can't get out of their own way and have to look for an HMS partner to provide the capabilities the seamless customer experiences requires."
John DiMarco, Chief Executive Officer
CEDAR Document Technologies

Content Critical Solutions is new to the market with its SmartTouch™ solution, and indicated that being a new provider in a competitive market has been a challenge for them. They are working to increase awareness in the North American market by using an enhanced marketing campaign for lead generation and by having a presence at certain industry conferences.

Each participant takes a different approach to overcome these barriers to adoption. Whether it is an implementation approach to onboarding new clients, flexibility in the hosting model, going to market via channel partners, or offering subscription-based pricing, each provider has a way of assuring prospective clients of their capabilities in the CCM market.

"Although we find that there is still a lack of understanding of what CCM is, this situation is being helped by industry analysts who provide client education."
Mary Hegarty, General Manager
NEPS

SELLING EXPERIENCES – THE NEW WAY OF CONDUCTING BUSINESS

The subscription-based on-demand economy is booming. Consumers are increasingly spending their dollars on subscription-based or on-demand services instead of purchasing products and making a capital investment in tangible property. There are new mobile application-based businesses being created and marketed to consumers almost daily, and based on the success rate of these companies, it is not about to stop. The pay-as-you-go model allows the consumer to receive the desired experience or end result without the costs or challenges associated with buying products and using valuable time to shop. The companies listed below are focused on filling a gap by offering a niche service that gives consumers a positive experience. Some examples include:

- Uber and Lyft provide on-demand transportation (also referred to as ridesharing) that is arranged through a smartphone application. Customers download the app to a mobile phone and request car service as needed. Drivers typically use their own private car to provide transportation to customers. Uber has recently expanded its service into food delivery, branded Uber Eats.
- Slice Labs provides on-demand “pay-per-use” insurance for the on-demand economy. Insurance can be easily acquired through the smartphone app and billed directly to a credit card, which allows the consumer to pay only for insurance that is needed, when it is needed. Slice Labs offers supplemental insurance for on-demand workers in the rideshare industry (Uber and Lyft) and home share industry (AirBnB).
- Meal kit delivery companies such as Blue Apron and Hello Fresh have built their success on the simple fact that many consumers lack the time and knowledge to prepare healthy dinners. Subscribers benefit by receiving a weekly shipment of pre-packaged ingredients necessary to create meals without having to plan meals, research recipes, and shop for ingredients. The exact amount of ingredients are included in the package right down to the amount of spices to be used. Subscribers can place orders on-line or through the mobile app and select from a wide variety of menu options to suit their meal preferences.
- Zip Car is a car sharing service that markets its business as an alternative to car rental and car ownership. Members join by downloading the mobile application and selecting a subscription plan based on their need. Approved members receive a Zipcard which is used to unlock the vehicle to access the keys locked inside by holding the Zipcard up to the card reader on the windshield. Available vehicles can be located through the app and be reserved immediately or up to a year in advance to use for as little as an hour and up to seven days. Members are charged a one-time application fee, an annual fee, and a reservation charge. Fuel, parking, insurance, and maintenance are all included in the price, and driving rates vary by city and by car model. When done with the vehicle, the member returns the Zip Car back to its parking spot, leaves the keys inside and uses the Zipcard or mobile app to lock it back up.

- Stitch Fix solves the challenges consumers have with on-line and in-store shopping such as putting together stylish outfits, finding clothing that suits personal taste, and selecting the right size. Stitch Fix is an on-line subscription-based personal shopping service for men and women. After completing a style profile, customers receive a monthly package with five hand selected pieces of clothing. Subscribers have the option to buy what they like, send back the rest, and provide feedback to their personal shopper to consider for the next shipment. Subscribers also have the option to order on-demand or set up automatic recurring shipments. Shipping in both directions is free.
- Sprout CoWorking is a membership-based co-working facility located in Rhode Island that provides shared office space and meeting rooms to its members. Memberships are available to suit a variety of needs including a virtual office which provides a business mailing address and access to meeting rooms, space for the 9-5 worker, a hot desk, and shared or dedicated office space. Traditional co-sharing office amenities include cubicles and desk areas, Wi-Fi, and office equipment such as copy machines and printers. Meeting space, conference rooms, a kitchen, and free coffee and tea are also provided.

New subscription-based, pay-as-you-go businesses are surfacing almost daily. This business model has become very successful because experiences desired by consumers can be reached without the upfront capital investment. In addition, these organizations have made business interactions very easy and accessible to the consumer through smartphone applications.

CCM hosted managed services is a technology delivery model that is similar to the business model described above. By outsourcing customer communications to a hosted managed services provider, enterprises do not have to make the capital investment in technology to build out and maintain the infrastructure required to generate and deliver customer communications. In addition, the pricing models offered by the providers are based on usage. Pricing models will be explored later in this report.

"The millennial consumer era with the expectation for instantaneous information has changed the global business landscape. Digital interactions via mobile and web apps are conducting business and directly affecting brand loyalty across all industries. Look at digitally centric businesses like Uber and Amazon and the impact they have had on their respective industries—now imagine the impact if your interactions were not as savvy."

Mike Lambert
VP of Customer Experience Solutions
Bell & Howell

The average number of request for proposal (RFP) received each year by the hosted managed services providers featured in this report ranges from a low of 5-7 to a high of 15-20. Madison Advisors believes that this RFP activity is a good indicator that enterprises are beginning to reconsider the importance of CCM, its impact on customer experience, and that outsourcing CCM may be a viable option to meet strategic business goals and objectives. However, as enterprises and print service providers narrow down the number of respondents to a short list, this list often includes both CCM solution providers and CCM hosted managed services providers, which signifies a lack of understanding between the two and a CCM strategy that is not fully vetted out.

In the book, "B4B – How Technology and Big Data are Reinventing the Customer-Supplier Relationship," authors Wood, Hewlin and Lah discuss "a shift in the technology industry from a product B2B model that was designed to sell things to customers, to a new B4B model which is about delivering outcomes for customers." This represents the fundamental difference between CCM solution providers and CCM hosted managed services providers. It is a mindset that, according to the authors, is not easy for executives to adopt, but nonetheless critical in order to remain competitive and stay in business.

The RFP can be a double-edged sword. While it represents the opportunity to gain a new client and increase revenue, the amount of work required to complete the RFP can be unrewarding for the following reasons:

- Most large enterprises have a standardized procurement process that is governed by an internal vendor management group. The procurement process typically requires the respondents to answer numerous questions, many of which are part of a standard template and unrelated to the actual services being requested in the RFP.
- The RFP questions related to CCM do not adequately address the business requirements of the enterprise and often focus on capabilities or topics that are less important.
- Many enterprises lack a holistic enterprise-wide CCM strategy and distribute RFPs for a single line of business, a particular use case, or for a point solution to enable delivery of communications via a new channel.
- The scoring and evaluation process is typically performed by IT without input from all critical stakeholders and lacks the necessary structure to ensure that the best respondent is awarded the business.
- Technology requirements for a hosted managed services solution are different from a CCM software solution; therefore, standard questionnaires and scoring mechanisms created by IT could potentially eliminate hosted managed services providers if no thought is given to those differences.
- The pricing models for CCM hosted managed services vary making the selection process a challenge since a side-by-side comparison cannot be performed.

- No further action is taken once the responses to the RFP have been collected. This may be due to a variety of reasons such as lack of buy-in from all key stakeholders, insufficient capital, other projects that have a higher priority, or the organization is not ready to undertake a major CCM initiative.

Although technology and capabilities are important considerations in the RFP process, a critical yet challenging topic is pricing. The B2B product model typically utilizes a license-based pricing model with an annual maintenance fee, therefore it is easier to understand what is being paid for. Since the B4B model focuses on delivering outcomes, pricing can be more difficult for enterprises to understand.

The RFP can be a useful tool that provides governance around the procurement and selection of a new technology vendor; however, the question remains as to whether or not it should be used for CCM related initiatives. Most large enterprises would vote in favor of the RFP, especially in highly regulated industries such as insurance and financial services. Smaller organizations may be less rigid and open to an alternative method of vendor selection.

"We find that RFPs focus on feature/function comparisons but do little to evaluate the engagement process of the potential suppliers. We believe this lack of process focus inhibits a complex enterprise from completing its CCM transformation. How can this service be leveraged as an Enterprise Shared Service and how can we align all stakeholders?"
John DiMarco, Chief Executive Officer
CEDAR Document Technologies

Madison Advisors suggest the following best practices for enterprises planning to distribute an RFP:

- Understand the business requirements for all stakeholders across the enterprise. This includes all lines of business who generate communications to customers as well as marketing and customer service personnel. In addition, understanding the requirements of IT and the internal print and mail operation if not outsourced to a print service provider, is also critical.
- Ensure all stakeholders are involved in the evaluation process and create a standardized scoring sheet for all to use.
- Create a list of questions that specifically target capabilities to match the requirements of the enterprise.
- Use a pre-qualification process to ensure vendors who meet the key requirements are invited to participate in the RFP process.

"Many RFPs that we are seeing require functionality for payments, print and full CCM functionality— an HMS offering can be the glue that bridges these typically separate offerings to deliver the complete solution."
Larry Buckley, Chief Executive Officer
DataOceans

CRITICAL COMPONENTS OF CCM HOSTED MANAGED SERVICES

Madison Advisors identified seven critical components of CCM hosted managed services, each of which is critical to managing the end-to-end communication lifecycle. A detailed explanation of each component and why it is a critical piece of a hosted managed services solution is provided in the tables below. Each section also includes the challenges enterprises often face with each component and how the hosted managed services providers in this research have solved for them.

Data Aggregation	
<p>Description: Collection, standardization and storage of data from a variety of sources including core processing systems, CRM systems, and external 3rd party sources. Data should be normalized and stored in a standard data model for use throughout the communication lifecycle. Data is the most critical piece since it is used for composition, execution of business rules that determine variable content, personalization and targeted marketing messages, analytics, and business intelligence.</p> <p>Data is also used to drive the print output management process including postal optimization, house-holding, and barcode placement for the print manufacturer's production workflow environment.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none">• Data extraction from core processing systems• Inability to manage multiple data formats• Mining, collecting, and standardizing unstructured data for use in data analysis• Lack of a standard data model• Data separately owned by individual lines of business (e.g. "silos")• No enterprise data warehouse (EDW)
<p>HMS Solution: Data collection and management is the most critical aspect of a customer communications platform and an area of expertise for hosted managed services providers who can ingest data files in a variety of formats, such as XML, ASCII, EBCDIC, TXT, PDF, and TIFF, as well as AFP and composed print stream data. Through the use of APIs and web services, data can also be collected from legacy and third party systems in real time. By integrating with source systems, response data can be transformed into the proper format and uploaded to support additional processing.</p>	

Table 2 – Critical Components of a CCM HMS: Data Aggregation

The term “big data” refers to a collection of data from both traditional and digital sources either from within an organization or from an external source. Data is extremely valuable to an organization; companies that are able to use data for discovery and analysis purposes to enhance their value proposition and increase customer satisfaction will most likely stay ahead of the competition. Another valuable opportunity for businesses lies within unstructured data; however, due to its unstructured nature, many businesses have difficulty unlocking the value from this data. Unstructured data is text-heavy and does not fit well into a relational database. It can come

from sources such as email, social media, blogs, documents, images, and even videos.

Content Critical Solutions is a print service provider that has recently begun to offer CCM hosted managed services. Since many enterprises struggle with data management, this capability will prove to be a value-add to its existing clients as well as prospects.

"We strategically began to offer a hosted managed services solution in preparation for print going away, but fortunately for us, we keep gaining more and more (print) clients. We have a long history of hosting data for our clients to meet their business requirements. The transactional data that flows through our facility represents the input; we can take any data stream and turn it into XML, after which we can do anything you want with it."

Fred Van Alstyne
Chief Operating Officer
Content Critical Solutions

Customer Profile & Delivery Preference Management	
<p>Description:</p> <p>Collection of customer profile information such as postal and email address, landline and mobile phone numbers, and delivery channel preferences. This process also allows customers to consent to electronic interactions. Consent should be at the customer level, but granular, to allow customers to specifically select preferences at an account-specific level.</p> <p>Self-management features allow customers to update this information as needed.</p> <p>Delivery preference data is used to optimize the composition process to generate the output according to customer preferences.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none">• Delivery preferences and/or customer consent are not collected or limited data is collected• Preference data collected and stored by line of business and not shared across enterprise; no centralized database• Marketing collects and stores preferences separately in a CRM database• No customer self-service capabilities that allow customers to update preferences• Preference data incomplete or limited and does not include language preferences, alternate contact information, mobile phone numbers, document accessibility preferences
<p>HMS Solution:</p> <p>Whether internally developed or partnership with a third-party software provider, HMS providers collect customer profile information necessary for both postal and electronic mail delivery, mobile phone numbers for SMS text messages and alerts, delivery preferences for all channels and for all communication types. Additional preferences collected may include language (e.g. Spanish, French, English, etc.), and support for electronic signatures (eSign) consent management is also a function of the preference management data collection process.</p>	

Table 3 – Critical Components of a CCM HMS: Customer Profile & Delivery Preference Management

Within the Oceanus® Preference Center component, DataOceans will allow its clients to collect new profile information as required, which may include a secondary email address or mobile phone number. This additional information helps to facilitate the bounce remediation process and reduce the likelihood of returning a consumer back to print delivery in the event of a hard or soft email bounce. The solution, also used by Bell & Howell, is fully integrated with complex capabilities to define delivery rules based on the type

of communication. In addition, the system can enable business rules to augment a consumer's delivery preference, if needed. For example, an SMS alert message can be sent out to a customer as notification that a due date for a bill is fast approaching for which a late fee will be charged if payment is not received.

Despite the preference management capability that is part of the hosted solution, many enterprises continue to maintain their own preference management database. According to NEPS, only 15% of their clients use the preference management offering. CEDAR indicated that it has four clients using its delivery preference management solution; however, since CEDAR's focus is on larger enterprises, most will typically maintain their own solution. Only recently has there been some movement by enterprises to outsource this function as some of the larger enterprises struggle to keep the technology current.

DataOceans and Bell & Howell indicated that approximately 80% of their clients utilize the Oceanus® Preference Management component since it offers greater flexibility than an internally developed solution. Preference data can be imported from other solutions with bi-directional synchronization of preferences to support existing processes that allow customer self-service of preferences on a DataOceans hosted preference screen. The solution can be modified to integrate with a third-party software solution such as PossibleNow, a market leader in preference management (www.possiblenow.com).

"The ability to create versus extract value for the recipient is critical to driving digital engagement. This will be the next wave of CCM, integrating customer experience management (CXM) and leading into customer expectations management (CEM)."
Larry Buckley, Chief Executive Officer
DataOceans

Content Management	
<p>Description: A centralized repository that contains all of the components necessary for the document composition process, including templates, business rules, variable text, and digital assets such as logos and other images.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none"> • Content stored in multiple repositories or on a shared network folder • Content stored at a 3rd party print provider if print and mail is outsourced • Content and digital assets are hard-coded into communications • No workflow to review and approve new content or changes to existing content • Variable text (e.g. state or product specific) or content (e.g. logos) hard coded into communication requiring multiple versions • No version control capabilities to ensure that the most up-to-date content is being used • No audit trails to track changes to existing content
<p>HMS Solution: Second only to data management, content management is a critical component of a hosted managed services solution. The content repository stores all of the components necessary for generation of communications with a thin client user interface that provides business users the ability to control and manage content which eliminates the reliance on IT for uploading new or changes to existing content.</p> <p>New artifacts and changes to existing content flow through an automated workflow for review and approval which helps to ensure version control. The repository also stores additional data associated with each artifact such as the date loaded, effective and expiration dates, version number, author, reviewer, and approver information to maintain an audit trail.</p>	

Table 4 – Critical Components of a CCM HMS: Content Management

The content management component allows business users to store and manage templates, logos, images, variable content, messages, and business rules in one centralized location.

Roles-based access rights that provide users the ability to create, author, and approve content can be managed by the client. Content can also be imported into the content management portion of the solution from another repository. Enterprises typically have multiple content repositories for digital assets and other variable content; therefore, no one source of the truth exists. Multiple content repositories lead to redundant maintenance for common assets, issues with version control, and disparate workflows in the composition process.

"Storing business rules externally allows for the ability to empower business users to make a rule change easily versus having to make a programming change to the composition process."

**Denise Miano, President
NEPS**

Document Composition & Post-composition	
<p>Description: The composition process combines data and variable content with document templates according to pre-determined business rules to create customer communications.</p> <p>Communications are optimized for the delivery channel(s) based upon the delivery preferences selected by the recipient. The composition process also creates an archive copy of all communications which is stored in the archive of record.</p> <p>Post-composition (post-processing) is performed for additional optimization for print manufacturing including application of barcodes, and postal optimization.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none"> • IT required to create new or make changes to existing communications • Longer change control timeframes • Multiple document composition tools used to create communications • On-premise composition solutions are typically two or more releases behind • IT responsible for composition and document change control • Legacy/core processing systems generate communications
<p>HMS Solution: Data, content, and business rules are stored separately from the document templates which allow for easy and efficient changes, as needed. By keeping these separate from the primary composition step, CCM hosted managed services providers create flexibility in the change control process so that enterprises can be more agile and respond to changing communication requirements as necessary. This allows enterprises to design a communication once for delivery across many channels.</p>	

Table 5 – Critical Components of a CCM HMS: Document Composition & Post-composition

The hosted managed services providers featured in this research support a printer agnostic business model and will direct print output files to a print service provider or back to the enterprise in-plant operation. Printer commands, finishing marks, and barcodes appropriate for printing and insertion will be included in the output files directed to the print operation. Although Content Critical Solutions is a print service provider, they too will direct print output to another provider if required by their client.

Omni-channel Delivery	
<p>Description: Delivering and making communications available via more than one channel including print, email, web portal, mobile, tablet, SMS, and social media. Responsive design during composition formats the communication to the device being used to enhance the customer experience.</p> <p>Multiple versions of the same communication can be delivered via more than one channel concurrently if specified in the delivery preferences.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none"> • Multi-channel delivery limited to print and email • Multi-channel delivery achieved via point solutions that are not integrated together • Available options for delivery may depend on line of business
<p>HMS Solution: Hosted managed services providers support all delivery channels for customer communications including print and mail, interactive PDF, web portal, secure email, tablets, smartphones, and SMS text.</p>	

Table 6 – Critical Components of a CCM HMS: Omni-channel Delivery

Social media as a delivery channel is supported; however, according to the participants in this research, adoption rates are still low.

The most common social media platforms supported include

LinkedIn, Facebook, and Twitter. NEPS indicated that their

clients are exploring how to effectively use social media, but none have started to use it. While none of their clients are using social media to deliver customer communications, DataOceans has more than 20% of its client base using SMS as a delivery channel, which is expected to grow to 40% in 2018.

"Most organizations deploy physical print, social media, mobile and Web solutions as standalone communication channels. Only recently has there been a movement to better standardize the look, feel, branding, and content across all channels to achieve the best customer experience."

Bell & Howell

NEPS supports digital mailbox integrations and has approximately

10% of production client volume utilizing this delivery channel. DropBox,

Evernote, and Google appear to be the preferred digital sites in the industry due to the lack of critical mass from any one provider. Although delivery to a digital mailbox can be supported by the other providers, none have clients utilizing this delivery channel to date.

A successful omni-channel delivery strategy requires the ability to engage customers in the preferred channel and with content that is personalized and relevant; this also includes printed communications. Content Critical Solutions believes that direct mail should also be a part of the conversation for a CCM solution. As a print service provider, Content Critical Solutions has the expertise around color inkjet and the use of color in printed

transactional and direct mail communications, both of which are beneficial in the conversations they have with their clients.

"Today's communications are personal and each individual has their own preference on how they want to receive messages. A comprehensive program of messaging should be considered, to include targeted marketing messages. Consistency in the message, delivery, and presentation of the communications deliver a cohesive and convincing communication platform."

John Slaney, Chief Technology Officer Content Critical Solutions

Archival	
Description: Storage of all customer communications in a single repository for future retrieval and delivery to support customer service requirements. Archive should satisfy audit and regulatory requirements to not only show evidence of what was sent to a customer, but also the associated metadata for each communication such as date created, approvals, and delivery channel. If communications are printed and mailed, the date of submission to the US Postal Service needs to be stored. For communications that are delivered electronically via email, bounce back and remediation data, and click through metrics should also be stored in the archive.	Enterprise Challenges: <ul style="list-style-type: none">• Communications not stored in an archive or are stored in multiple archives• Documents stored are limited to a PDF version of the communication• Critical metadata not stored in archive• Archive not indexed appropriately to allow customer service to easily search for documents• No ability to redeliver documents from the archive• Archive contains a scanned image of the document
HMS Solution: Creating an archive copy of customer communications is an output from the document composition process. If preferred, output can be directed to a client archive. The archive will contain the appropriate indexing for easy search and retrieval, and redelivery if needed, which is particularly important for customer service personnel.	

Table 7 – Critical Components of a CCM HMS: Archival

To satisfy regulatory and audit requirements, customer communications should be stored in the archive “as delivered” with the appropriate metadata such as date created, approval information, delivery channel, and date of submission to the US Postal Service. Consumer preferences indicate the method of delivery for

communications; however, requests for redelivery in a different channel need to be accommodated for. For example, communications that were originally generated in HTML to present on a mobile device but also need to be recreated in PDF for tax purposes at year-end. Transformation software tools allow for documents that have been originally created and stored in one format to be recreated and delivered in another.

Dashboard and Reporting	
<p>Description:</p> <p>Dashboard capabilities include full visibility into the entire production workflow through a thin client or browser-based user interface. Business users can view the status of all jobs from the point of file receipt through delivery. In addition to job-level tracking, piece-level monitoring is also offered to allow documents to be pulled and re-routed, destroyed, or redelivered.</p> <p>Standard reports and the ability to customize reports are provided through a reporting module. Business intelligence tools may be integrated to allow clients access to underlying data for data analytics purposes.</p>	<p>Enterprise Challenges:</p> <ul style="list-style-type: none"> • No visibility into the production process • Lack of or very limited reporting capabilities • No piece-level tracking
<p>HMS Solution:</p> <p>Dashboard and reporting functionality is accessible through a browser-based, thin client. All production related information from the point of file ingestion all the way through to the delivery of communications is available to the user.</p>	

Table 8 – Critical Components of a CCM HMS: Dashboard & Reporting

All of the hosted managed services providers offer a dashboard that provides visibility into the document lifecycle from file receipt through delivery. Having a dashboard that shows the status of communications from both a logical and physical (print and mail) perspective is important for managing strict document service level agreements (SLAs). Since print service providers typically offer visibility into the production environment for their clients, this information should also be presented to the client in a consolidated dashboard.

DataOceans enhanced their data analytics and reporting capabilities through integration with an industry leading business intelligence platform that allows end users to create and customize reports and dashboards to analyze data and make decisions in real time.

Large organizations such as banks and insurance companies are comprised of individual lines of business that have specific goals and objectives such as new product development, increasing revenue, decreasing operating expenses, and focusing on areas of improvement as identified in voice of the customer surveys. The success of each line of business obviously contributes to the overall success of the organization; however, when it comes to customer communications and customer experience, individual strategies created in silos will not benefit the organization as a whole.

Strategies for both customer communications and customer experience should be enterprise-wide and consider the requirements of all lines of business and marketing, customer service, technology, and print operations, whether internal or outsourced to a service provider. Creating a holistic strategy that benefits the entire organization is not an easy task. Madison Advisors believes that it is a best practice for enterprises to establish a Center of Excellence for CCM to serve as a centralized unit within the organization that manages and oversees all activities related to CCM. To be successful, the Center of Excellence should have executive-level sponsorship and report to a member of the C-Suite. Some organizations have newly created C-level positions such as a Chief Experience Officer or Chief Customer Officer where the Center of Excellence could report into. The Center of Excellence should include at least one subject-matter expert from each line of business who is most familiar with the documents and understands the communications requirements related to that specific business line.

"Between 5-10% of our clients are starting to establish COEs; it is a slow moving trend that is taking time to take hold."

Lawrence Buckley
VP Marketing & Business Development
DataOceans

Madison Advisors suggests the Center of Excellence have responsibility for the overall communications strategy with an operational focus relative to all CCM-related activities which include managing the messaging and content that is appropriate based on the desired outcomes determined by the customer journey and customer experience. The following responsibilities should reside within the Center of Excellence:

- Establish document design standards to streamline the print and mail operation. For example, standardizing the location of the address block will eliminate the need for numerous outbound envelopes and ultimately reduce costs associated with maintaining inventory for print and mail communications.
- Incorporate the branding requirements established by marketing with respect to overall look and feel of the documents, including logos, color scheme, and language into the document design standards.

- Establish and manage the workflow and approval processes for all new documents and/or changes to existing documents, including sign off from legal and compliance, etc.
- Communicate and enforce document standards throughout the organization.
- Maintain control over variable content and digital assets in a central repository. Subject-matter experts can manage business-line specific content such as digital assets, regulatory text, signatures, logos, and marketing messages.
- Create a process for testing and quality control review for all communications.
- Oversee all vendor relationships, including print service providers and technology providers.
- Act as a communications advisor and liaison to the enterprise.
- Monitor document service level agreements, especially for printed communications.
- Establish roles-based security access based on job responsibility.
- Generate reports and capture metrics.
- Establish a mechanism to capture and monitor customer satisfaction metrics once the solutions are implemented and use this data to recommend ongoing improvements.

Establishing a CCM Center of Excellence is a step in the right direction for organizations to set a strategy for customer communications with a focus on improving customer experience. This is a slow-moving trend that Madison Advisors believes will gain momentum in the future, especially as organizations better understand how CCM can be a driving force behind customer experience management.

Initially, the focus of the Center of Excellence can be on outbound communications; however, once established, the scope can be expanded to include inbound communications. While the topic of inbound communications is a whole separate discussion, the design process for outbound communications should consider whether or not an inbound communication (e.g. a response from the consumer) will be triggered. Understanding how outbound and inbound communications are linked together is an important part of mapping out customer journeys which can ultimately help an organization enhance customer experience.

"The majority of our customers are looking to establish this as a practice, but the percentage of those who have adopted this is small. We see this as a trend across all of our enterprise accounts."

**George Webb, Chief Technology Officer
NEPS**

IMPLEMENTATION APPROACH – CRITICAL FOR SUCCESS

Professional painters know that the secret to success when painting a room is the preparation. A seasoned professional will spend time prepping walls by finding and fixing cracks and dents, sanding, and then applying a primer. The amount of preparation time spent is directly related to the outcome of the job—the more time spent preparing, the better the outcome. Onboarding a new client to a hosted managed services platform is analogous to painting a room. A lot of upfront preparation in the form of data collection and business requirements gathering is necessary for a smooth implementation process. The participants in this study follow a structured approach utilizing their own onboarding techniques which result in successful outcomes for their clients.

Identifying the client's goals and objectives and understanding the requirements for each line of business is the first step in the onboarding process. All providers in this research have a professional services group with dedicated project managers assigned to each implementation. The onboarding process begins by conducting an in-depth analysis of the client's existing environment and taking an inventory of all communications, which for many enterprises is difficult due to the numerous amount of document templates being used. Data sources and events that trigger each communication are also important for the onboarding process.

Many technology initiatives focus on efficiencies in the implementation phase to more quickly realize project success. CEDAR begins each engagement with an intense focus on planning, and whether the desired planning method is to employ traditional waterfall or agile project methodology, CEDAR believes its engagement process delivers speed-to-value.

The CEDAR engagement process consists of detailed requirements gathering, project planning, and implementation methodology. Through this process, CEDAR is able to minimize the time and resources required of its clients, identify and mitigate project risks early, quickly deliver an immediate positive impact, enable fast and flexible change management, and establish a foundation for success with future projects.

"CEDAR provides CCM expertise by removing the heavy lifting off the client's internal IT and business sponsors, by leading the planning process, and leveraging existing legacy data to ensure our clients get as much value as possible as quickly as possible."

**John DiMarco, Chief Executive Officer
CEDAR Document Technologies**

The first step of the analysis and design phase by NEPS is an in-depth analysis of all data structures, forms, and business rules to frame the architecture and approach for conversion off the client's current platform to the NEPS' NSite platform. Business rules that support document creation are identified and cataloged which serves as the baseline for conducting a gap analysis. An audit is performed to identify current, redundant, and obsolete documents as well as a review of branding standards, graphics, and fonts to compare to existing business rules and template requirements.

"Comprehensive analysis at the beginning of the project plan creates a solid foundation for a successful project."

**George Webb, Chief Technology Officer
NEPS**

The first part of a post-sale engagement with DataOceans is to define goals and objectives to ensure that its implementation process is focused on achieving the optimal outcome for the client. The agreed to goals and objectives are documented in the Client Success Blueprint which establishes the ROI and success metrics by which the partnership is managed. Once the goals and objectives have been documented, DataOceans proceeds through a standard multi-phase implementation process that includes collecting business and technical requirements, planning for the testing phase, platform configuration and development, testing, and finally deployment. Throughout the implementation, DataOceans utilizes a traceability process to ensure that goals and objectives are addressed in the requirements package, and the technical requirements and test plan are specifically tied to the requirements.

"One of our key strengths lies within our data capabilities and we help many of our clients who struggle with their legacy data silos by parsing, normalizing, converting and restructuring data from flat files, print stream data such as AFP or PDF and we can even take in unstructured data. For older legacy applications, we can take in a line mode AFP file, put an overlay on the document, and modernize it without having to parse and recompose it."

**Randy Beals
Chief Revenue Officer
DataOceans**

The CX Onboarding ServicesSM component of CX Touchpoints expedites and simplifies the migration of legacy, print-based applications with Bell & Howell's post-composition function. Bell & Howell developed this utility to repurpose legacy print streams and distribute through their omni-channel solution. Since Bell & Howell utilizes the Oceanus® platform from DataOceans, their implementation approach and onboarding process follows the same steps. This mass onboarding utility is also used by DataOceans as part of their onboarding process. This feature allows business users

"Mass onboarding enables the modernization of legacy applications without incurring the cost of migrating them to a new platform. As is the case with many solutions you don't get the full value until you convert your applications to the new platform, we refer to as "day forward technology." This utility approach allows clients to leverage the interactive content creation functions of modern tools and apply just in time, personalization to uplift their legacy communications."

**Mike Lambert
VP of Customer Experience Solutions
Bell & Howell**

the ability to create and manage content through the interactive business portal without having to convert hundreds of applications.

The account and implementation team at Content Critical Solutions meets with the stakeholders to review the needs and understand the requirements of all business lines. By following a standard systems development life cycle (SDLC) development and deployment process, all development work is designed to accommodate client workflows. During the interview process, Content Critical Solutions categorizes the system based on the document life cycle required by the customer. As a print service provider, the solutions offered by Content Critical Solutions are integrated together to offer a complete workflow to clients.

KEY DIFFERENTIATORS

The CCM hosted managed services solutions featured in this study all include the seven critical components as noted above; however, each has vertical-specific expertise and additional features and capabilities that make their offering unique from the others. These differentiators are key for enterprises to consider as part of a strategy for customer communications and customer experience.

Bell & Howell

Bell & Howell is a leading solution provider that has bundled modern technology and best practice standards with years of practical experience evolving customer communications into its hosted managed services offering. Bell & Howell is focused on providing a full complement of services which includes a cost-effective omni-channel communication platform to help customers improve retention and reduce the total cost of managing consumers by exploiting personalized physical and digital communications. This approach is a departure from the traditional mode of using communications to acquire new customers or simply to report the status of transactions that occurred last month. Those types of communications represent the beginning and end of a customer journey but do very little to help conduct actual business.

By expanding the number of communication channels and collecting better analytics, Bell & Howell hopes to bridge the gap between insight and engagement and allow companies to be more proactive and contextual with their messaging with a purpose of guiding consumer behaviors through real-time life events.

Bell & Howell knows the complexity of the customer journey and understands the value of maintaining consumer relationships. This is why it has formed its CX Professional Services team. The goal of this team is to provide technical and business consulting services to facilitate chatbot and AI services, customer journey mapping, and most importantly identify the true value of a consumer interaction. The goal of multi-channel and omni-channel is no longer about suppressing print and substituting it with an online image, it is about

guiding consumers through complex business transactions utilizing timely and contextual messaging. This is what Bell & Howell believes is the value proposition it can bring to its clients.

From a pricing perspective, the Bell & Howell solution is a true SaaS-based managed services model, where clients pay only for the consumption of services that are used. There are no additional maintenance or licensing fees assessed. CX TouchpointsSM combines both in-house and strategic partner solutions to create a fully integrated omni-channel platform specifically engineered for cloud-based operations and distribution. As part of the solution Bell & Howell enables access to a set of complementary services to streamline the implementation and migration to omni-channel services including mass onboarding, address hygiene, chatbot and AI services, and strategic business consulting.

"It's about managing a consumer experience, not managing a communications channel."
Ramesh Rattan
President & Chief Executive Officer
Bell & Howell



Figure 1 – Bell & Howell CX Touchpoints

CEDAR Document Technologies designed its solution entirely around servicing interactions. It is an integrated, single-source solution that offers all of the critical components of CCM, as well as Electronic Invoice Payment and Presentment (B2B EIPP) and customer facing and agent assisted B2C web/mobile platforms.

By focusing on the input—the data, content, business rules and analytics—the solution delivers personally relevant communications, which CEDAR believes remains the single biggest challenge to managing a consistent customer experience. Its Rapid Suite of products empowers non-technical business users to manage enterprise communication content and rules used in any communication, in any channel, through a single thin client interface.

"Based on recent research from Digital Banking Report: 'To be future-ready, banks and credit unions must transform their back-office tech to deliver the customer experience people expect. The lack of investment in the middle- and back-office capabilities has been to the detriment of the customer experience and can no longer be ignored. In fact, nearly 80% of bank operations leaders say their organization's existence could be threatened if they don't update technology to be more flexible and capable of supporting rapid innovation.' We are focusing on certain verticals where we feel our expertise and solution can have the most impact in this critical area of the customer customer experience."

**John DiMarco, Chief Executive Officer
CEDAR Document Technologies**

CEDAR follows a disciplined engagement process to manage large complex client implementations that include multiple lines of business, products, and complex systems environments. CEDAR's long history of success is the direct result of its technological expertise and vertical-specific knowledge in the areas of financial services, including banking, auto finance, mortgage and retirement, insurance, pharmaceutical, and merchant services.

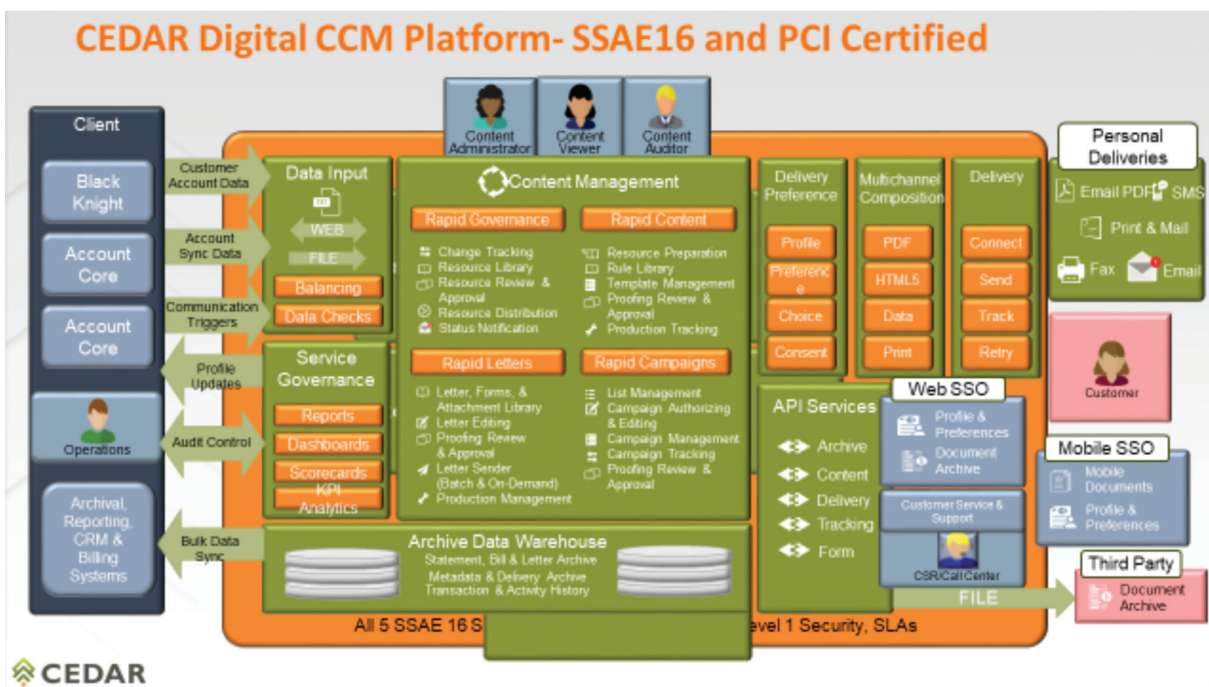


Figure 2 – CEDAR Document Technologies Digital CCM Platform

Content Critical Solutions

Content Critical Solutions is composition tool agnostic. Interactive capabilities are available through the DOPIx composition tool from their partner icon systemhaus as well as from the Quadient Inspire CCM platform. All aspects of CCM are fully supported, including the components necessary for customer implementation. As a print service provider, Content Critical Solutions has migrated away from offset print and changed its production model to a digital print environment and white paper factory. Using its expertise in print manufacturing, Content Critical Solutions can offer its clients guidance on use of color print in an omni-channel delivery strategy. Content Critical Solutions can scrape an AFP file and re-purpose the data to generate communications that can be available to consumers through different devices. By starting with the output, this eliminates the need to go further upstream and thus expedites the onboarding process since the business logic does not need to be re-coded. Content Critical Solutions targets enterprises with legacy IBM mainframe technology as those organizations tend to need the most help. This type of legacy environment is typical of small to mid-size life insurance companies, who need the most help but lack the financial resources to undertake a large CCM initiative.

"A CCM solution combines a series of inputs to generate a series of outputs that engage customers where they want to be engaged with the content that they deem relevant."

John Slaney, Chief Technology Officer
Content Critical Solutions

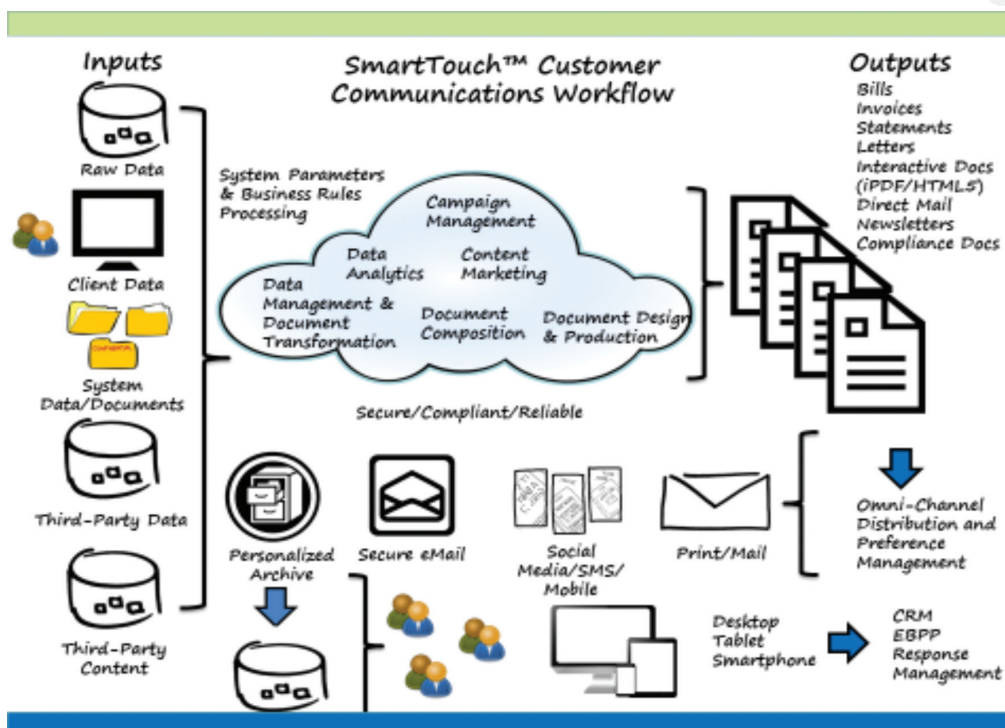


Figure 3 – Content Critical Solutions SmartTouch Customer Communications Workflow

The DataOceans Oceanus® platform is an all-inclusive, fully integrated, customer engagement and business empowerment platform that can be rapidly deployed to address complex business challenges. The DataOceans solution includes an embedded, self-service business intelligence and analytics capability that allows business users to perform analysis to gain insights from their CCM data. When coupled with the ability for business users to modify content within the platform, this enables business users to quickly respond to trends without the need for IT resource intervention. A full set of complementary services is provided to facilitate all aspects of implementation, such as onboarding, application design and development, and strategic business consulting. Although DataOceans developed a proprietary document composition tool, some clients have requested the ability to use their existing Extream or GMC licenses with the platform. DataOceans is working to make this capability available in their platform.

With the recognition that direct mail and transactional communications are becoming more personalized, DataOceans targeted content manager can be used to include statement-based marketing, formerly known as transpromo. By using data and analytics to target customers with content that is more relevant to the consumer, DataOceans is able to build revenue streams for its clients through the use of third-party advertising. Although the workflow for direct mail and transactional communications is different, financial, healthcare, and utilities clients are using the platform for both. This helps to bridge a gap that enterprises typically have between their CCM solution and a CRM solution.

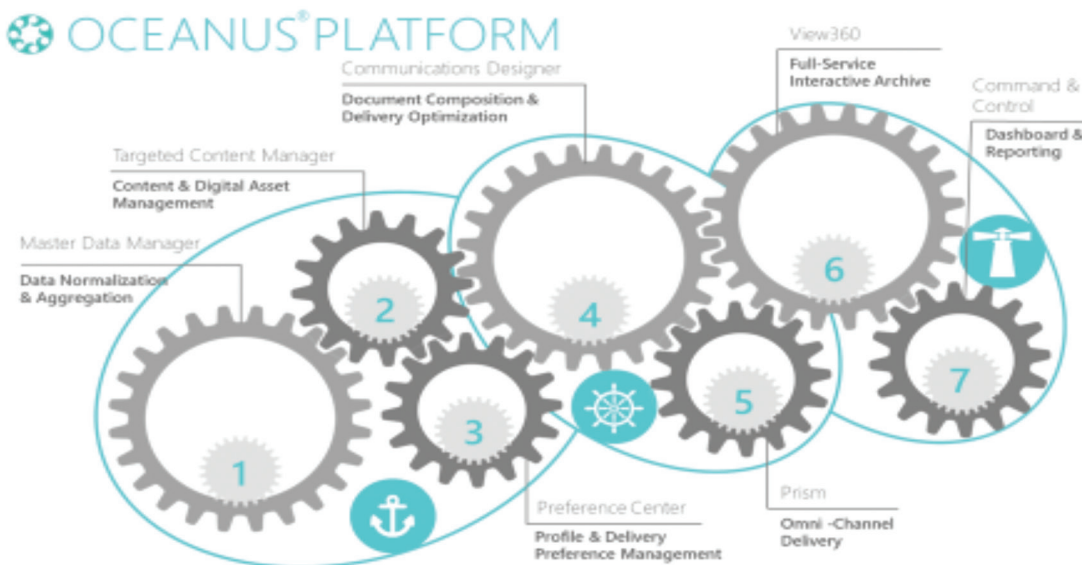


Figure 4 – DataOceans Oceanus Platform

NEPS leverages its decades of industry and technical knowledge and specifically focuses its efforts in the financial services, insurance, and healthcare industries. The NEPS solution is technology agnostic as well as print agnostic, meaning it will provide customers with access to a broad array of proprietary and partner technology in a secure hosted environment. If a customer wants to use a specific tool for composition, postal processing, or other tasks, NEPS will provide that tool in the cloud and make it available. By doing so, this will ensure that each application is unique and developed using the appropriate tool for the job, rather than taking a “one size fits all” approach. NEPS does not subscribe to one tool or platform, but rather evaluates which will provide the optimal solution for each challenge and integrates those platforms in the most effective way for each customer. NEPS has enhanced its ECM model to provide its clients with the option of “right-sourcing.” Because outsourcing has been considered an “either/or” option, many organizations are leaning toward adopting a third route which is one that combines the best of outsourcing with the best of in-house service capabilities—known as right-sourcing. NEPS will work with clients to identify and provide the right mix of in-house and managed services.

NEPS has a deep understanding and expertise in all of the commercially available tools in its SaaS environment, including OpenText Exstream, SMART Communications (formerly known as Thunderhead), xPression, Xerox XMPie, Quadient Inspire and Intelledox. In addition, NEPS maintains expertise in widely used legacy software such as DocuMerge, CompuSet, CSF, Doc1, mainframe centric line data, metacode as well as AFP. This expertise allows NEPS the ability to assess document needs and deliver a solution that is flexible and robust in software that is ideally suited to the demands of each client's business environment. NEPS can leverage the client's investment in tools currently in use, and enable them to take advantage of other tools as required.

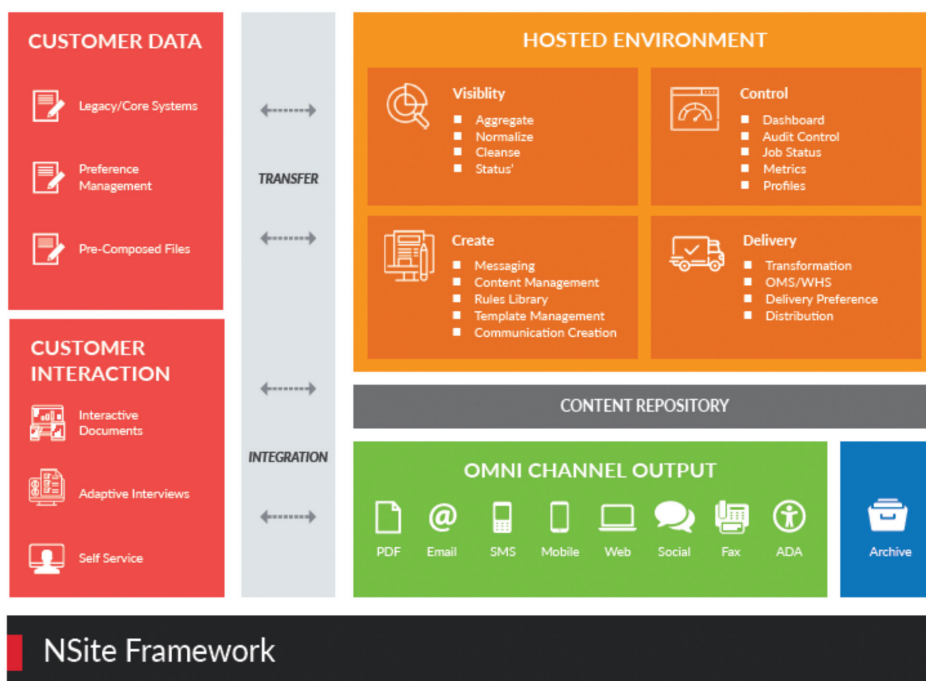


Figure 5 – NEPS NSite Platform

RATIONALIZATION OF TEMPLATES – A PREREQUISITE FOR SUCCESSFUL ONBOARDING

Most of the enterprise clients that Madison Advisors engages with have hundreds, if not thousands of document templates. This is particularly true for financial services organizations that are highly regulated and operate in several states and are comprised of multiple business lines that offer a variety of products. Put simply, a document will typically contain a combination of static and variable content. Static content does not change, but variable content does. Examples of variable content are digital assets such as logos, signatures, customer service phone numbers, and even state-specific regulatory text. This variable content should be stored in a content repository, made available during the composition process, and defined by a business rule that instructs the composition engine when to incorporate it into a document. Instead, a new document is created to satisfy every variation that is required; this is what leads to the high volume of templates.

"Our technology has been architected to drastically reduce the number of required templates without sacrificing content variability within customer communications."
Chien Hsiung, Chief Information Officer
DataOceans

Rationalization of document templates is an area of expertise for all of the CCM hosted managed services providers featured in this study. It is a critical exercise that is a necessary prerequisite for a successful onboarding process and involves taking an inventory of all documents to identify the variable components of each.

"When you think about it, there are basically 8 different types of documents: statements, bills or invoices, letters, explanation of benefits (EOB), annual notification of change (ANOC), contracts, welcome or fulfillment kits, and checks."
Mike Lambert
VP of Customer Experience Solutions
Bell & Howell

All of the hosted managed services providers follow a structured process to rationalize document templates. An inventory of documents is taken and information about each document is gathered to identify and understand the variable components. The goal is to understand the logic that drives that content within the documents so that the number of templates can be reduced from hundreds or thousands down to a few. This exercise is conducted as part of the requirements gathering process by the provider's professional services team.

Rationalizing templates upfront is critical for a successful implementation and for long-term maintenance efforts necessary for the communications. By rationalizing templates, variable content is identified and business rules

that determine the inclusion of specific content are created. Separating content and business rules from the document templates allows for the empowerment of business users to maintain content, control messaging, and review and approve any changes made.

PRICING MODELS

The pricing models for CCM hosted managed services will typically include fees associated with implementation and onboarding, production support services, and labor-based fees for post-implementation change requests. As the service offerings from these companies continue to evolve, so should the pricing models to reflect the value of the services being delivered. Pricing models should be easy to understand and tie directly to the outcomes achieved so that it is less complicated for clients to understand. The pricing models offered by the hosted managed services providers in this research are highlighted in Table 9 below.

"We have a defined document template practice that helps clients catalog, document and understand their current state, and assess common used components. This enables the NSite platform capabilities to apply content on the communication without having to apply it to a unique template."

**Denise Miano, President
NEPS**

HMS Provider	Pricing Model
CEDAR Document Technologies	Pricing structure is broken out into three categories: <ol style="list-style-type: none">1. Initial service deployment fee – labor and infrastructure provisioning2. Production services fees for transactional activity around: composition, delivery, archival, and service interactions3. Ongoing labor-based services to support required change management and new services
NEPS	Pricing model is based on the following: <ul style="list-style-type: none">• Hosted or on premise• Term of contract (typically 3-5 years with renewal options)• NEPS proprietary software – typically priced as a term license including maintenance for the contract period• Monthly subscription pricing which can be structured as a flat monthly fee with options

DataOceans	<p>Pricing for the core solution is based on the number of end consumers being communicated with and is scaled or tiered based on number of customers. Other pricing details include:</p> <ul style="list-style-type: none"> • No implementation fee • OpEx pricing model with a single low fee per customer per month for unlimited use of the complete platform • Shared Risk pricing model which reduces the price per customer until specifically defined and mutually agreed to objectives have been achieved
Bell & Howell	<p>Pricing for the core solution is based on the number of end consumers being communicated with and is scaled or tiered based on number of customers</p>
Content Critical Solutions	<p>Transaction-based pricing with volume tiers</p>

Table 9 – Summary of Pricing Models

DATA SECURITY AND REGULATORY COMPLIANCE

Concerns about data security and sending confidential customer data outside a company's secure firewall has caused some hesitation in adoption of CCM hosted managed services. Data security is a serious topic that has attracted a lot of attention after several large data breaches have received media attention, including the Equifax breach in 2017 which put 143 million Americans at risk. The Equifax data breach put sensitive information such as social security numbers, addresses, and driver's license numbers at risk. Although this breach ranked among the worst on record, there were many other noteworthy security breaches in past years. A data breach will not only ruin the reputation of an organization, but it will have a severe negative financial impact as well.

The hosted managed services providers in this study take a strong position on data security and have passed the requirements to earn certifications for HIPAA, PCI, and SSAE 16 Type II SOC 2 (formerly known as SAS70). On an annual basis, CEDAR conducts financial, PCI, and SSAE 16 DOC 2 audits. In addition, CEDAR coordinates with its clients to ensure compliance with regulations such as Sarbanes–Oxley, HIPAA, Dodd-Frank, and Gramm–Leach–Bliley and has also passed InfoSec, HIPAA and Sarbanes–Oxley compliance reviews for some of the world's largest corporate customers.

CEDAR holds annual security training for all employees to reinforce these principles, and requires that all employees pass a 3rd party security test. Additionally, employees that directly handle sensitive client data (or are otherwise held in-scope for PCI certification) are required to pass a more specific, more stringent test. CEDAR employs dedicated Security and Compliance staff to ensure that protection of clients' data remains a top priority. CEDAR's Security & Compliance Manager holds CISSP, CISM, and CRISC certifications.

Within the first 24 months of its inception, DataOceans moved into the realm of online payment processing, and thus became PCI Compliant in 2005 and migrated to PCI Level 1 Certified in 2011, and has maintained this certification for the last 7 years. While many processes, procedures, and practices are required for PCI Level 1 Certification, DataOceans goes beyond PCI processes, including but not limited to a variety of other audits and regulatory standards such as GLBA, HIPAA, CMS, SOC 1 Type 1 and 2, SOC 2 Type 1, and moving towards a certification for SOC 2 Type 2 in 2019 (for 2018). DataOceans also maintains two data centers and has engaged a tertiary 3rd DR provider for Secure Cloud services as well. DataOceans has also implemented a strong IDS

"The very nature of CCM mandates that any organization that assumes the responsibilities for these functions, especially if they intend to remain a viable service provider, must invest heavily in every aspect of enterprise risk management. One mistake can put you out of business."

**Dave Hickson, Chief Strategy Officer
DataOceans**

(Intrusion Detection Systems) and has established processes around CDM (Continuous Diagnostics and Mitigation) according to the newest standards of information/data protection and ERM (Enterprise Risk Management) and data governance.

To remain in compliance with numerous government bills and regulations such as Sarbanes-Oxley, GLBA, etc., NEPS has created corporate guidelines to regulate and direct the usage, storage, and destruction of sensitive data elements for non-healthcare related solution projects. By maintaining these guidelines, NEPS can avoid involvement in any FTC administrative enforcement actions for non-compliance with the FTC Safeguards Rules. Additionally, NEPS has deployed its NSite platform for CMS regulated customers. Within CMS, audits are performed to review and confirm regulatory changes to messaging. Within the NSite platform, clients have access to messaging information such as the current message, the old message, the date and time a message was changed, and anyone listed in the approval chain. This level of visibility has become a large benefit to regulated customers during an audit.

ROADMAP – A LOOK INTO THE FUTURE

CCM hosted managed services providers will continue to enhance their solutions to keep up with advances in technology and meet digital expectations of consumers. This is a big challenge for enterprises to overcome. As client requirements driven by digital transformation and customer experience strategies continue to grow these providers will seek out ways to meet those demands.

Technology roadmaps are often influenced by client needs and aspiration. This is no secret to CEDAR, whose Product Management organization meets regularly with all of its clients to understand and develop product requirements that best support client and market needs. Usability from a client and customer perspective is an area of focus in CEDAR's roadmap. The client-facing user interface will be enhanced to make it as intuitive as possible for business and servicing users, and self-servicing capabilities across emerging distribution channels will be expanded.

NEPS continually invests in its hosted platform and partner relationships to broaden capabilities to help clients extend their applications and fully support mobile platforms, devices, and users. NEPS also plans to integrate deeper into social media channels with monitoring capabilities. Version 9 of the NSite platform will be released this year with a modernized user interface that is multi-modal and browser independent.

DataOceans is exploring integration with market-leading composition tools to offer as an implementation option for clients that have already made a significant investment in those products. Other roadmap items include enhancements to customer-facing and back-office administrative portals and continued support for

customer self-service of dynamically presented content related preferences to create a two-way conversation with customers. DataOceans currently offers payment functionality and supports payments through multiple payment processing vendors and has plans to support additional non-traditional payment types such as Apple Pay, Google Pay, Walletron, PayPal, and Zelle. An embedded, self-serve business intelligence and analytics capability has been added that provides business users with access to critical business data without reliance on IT or complex query language. DataOceans is about to introduce AI-supported SMS text response capability to allow clients to better engage customers via this rapidly growing channel. DataOceans also plans to integrate with the Mass Onboarding capability from Bell & Howell to allow for more rapid and efficient onboarding of new clients.

Bell & Howell is focused on making its solution simpler to use. This will include technology or enhancements that will improve the business user interface. Emerging technologies such as chatbot and artificial intelligence will also be exploited to simplify and automate the customer journey.

Content Critical Solutions is building an application that will scan and upload forms to provide a consumer with an immediate response, whether it is good or bad. By focusing on the whole workflow, Content Critical Solutions can understand how and where CCM is evolving, which is why inbound communications will soon be an area to explore. Content Critical Solutions will partner with whomever has the best technology in order to add value for its clients.

Currently they are working on enhancing their capabilities around data normalization from an input perspective.

Content Critical Solutions believes that direct mail should be a part of the conversation around designing a CCM solution. Most enterprise organizations believe that direct mail is solely the responsibility of marketing and thus a separate function, while Content Critical believes it should be a part of the same platform and strategy for how customers are communicated with. As a print service provider with high speed inkjet printers, Content Critical Solutions can offer guidance during discussions on the benefit of color in transactional communications and direct mail, and how it can support the client's CCM strategy.

"When CCM focuses on outcomes, the conversation goes better."
Content Critical Solutions

CONCLUSION

Consumer expectations will continue to be elevated as new technology and innovation becomes available. All types of business interactions, regardless of the product or service, will be scrutinized by consumers looking for an interactive, personalized, and engaging customer experience. CCM has come a long way from being viewed as a necessary evil—printed documents sent to consumers because of a regulatory requirement—but instead as an opportunity to create a personalized experience that enables a desired business outcome. To stay competitive and solidify consumer loyalty, organizations need to design a CCM strategy that supports their customer experience strategy. The two should be integrated together with involvement from key stakeholders across the enterprise. Digital transformation and technology innovation have changed the way business is conducted and heightened consumer expectations for easy experiences regardless of the channel or device.

"CCM has long been positioned as "software" which takes data and static content and composes it into a personalized outbound communication. In a much broader context, CCM is an eco-system where a wide variety of data, content, and client-specific inputs are managed in bi-directional communications between an enterprise and its clients using a multitude of inbound and outbound delivery channels. This puts the CCM eco-system front and center in the digital transformation of business processes and an integral part of the client experience."

**Warren Lederer, Chief Operating Officer
Madison Advisors**

Designing a CCM strategy and selecting a technology solution to support it is no easy task. Enterprises in need of a technology refresh should first determine whether to build or buy, or if it makes more sense to outsource to a CCM hosted managed services provider. The task of building internally or purchasing and integrating the critical technology components together to create a unified CCM platform is not insurmountable; however, most organizations with the best of intentions struggle to get the desired result due to lack of time, resources and budget. Outsourcing to a CCM hosted managed services provider will allow an enterprise to lift the burden from IT and empower business users to take control of communications by managing variable content, messaging, and changes to documents.

APPENDIX A – ABOUT THE AUTHOR

Gina Ferrara

Senior Analyst

Gina Ferrara brings more than 19 years of experience in the banking and financial services industry working as a project manager/business analyst in ecommerce, with several years focused on online banking, electronic bill payment, ecommerce and print and mail optimization. Her project management consulting experience includes print and mail operations, postal optimization and address quality, as well as multi-channel delivery.

Gina helps organizations of all sizes with CCM optimization, managing RFPs for print outsourcing and CCM hosted managed services as well as conducting best practices assessments for enterprise and service provider clients. She is a frequent speaker at notable industry conferences that include XPLOr, Document Strategy Forum, thINK, and Graph Expo.

APPENDIX B – ABOUT MADISON ADVISORS

Madison Advisors aspires to advance the multi-channel communications objectives of Fortune 1000 companies that result in an enhanced customer experience. Madison Advisors specializes in offering context-specific guidance for a range of content delivery strategies, particularly those addressing enterprise output technologies and customer communications. Madison Advisors has specific and unique knowledge of the document composition market, technology vendors, best practices, and emerging scenarios.

Madison Advisors offers services and expertise primarily through high-impact consulting services along with associated solution deployment professional services. With no-nonsense, highly specialized engagements, Madison Advisors directly helps our clients achieve very hard and specific return on investment (ROI) related to their CCM, print, and electronic communications initiatives. To learn more about Madison Advisors, visit our website at www.madison-advisors.com.