Gone are the days where a payer considered structured data only when managing the member experience. Today, unstructured data and the enterprise management of content are significant parts of the member-360 data platform that is the center of the member relationship management ecosystem.

The Role of Unstructured Data in Member-360 Payer Data Platforms

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Introduction: What's Important to Payers?

IDC has identified four major themes that payers are focusing on as they zero in on inefficiencies, optimization, and aligning IT initiatives with member demand:

- » Respecting the Health IT Evolution
    - Recalibrating toward next-generation consumerism, documentation, and digital member experiences
    - Understanding and adapting to a "virtual first" member experience
    - Recognizing data proliferation (volume, variety, velocity, and value)
    - Enabling system, regional, and nationwide interoperability
    - Emphasizing cybersecurity and resilience (Security is essential to building trust.)

- » Focusing on Digital Era Challenges
    - Addressing pre-existing challenges (ACA, MLR, aging populations, chronic conditions, value-based care [VBC], cost pressures, shifting regulatory environment)
    - Anticipating emerging challenges (mergers/payviders, business resiliency, COVID-19 variants, vaccine management, talent shortages, rise of consumerism, cyberthreats)

AT A GLANCE

WHAT'S IMPORTANT

- » Data management in payers is evolving with the introduction of many flavors of member-360 technology platforms.
- » Unstructured data plays a significant role in executing a superior member experience within the member-360 vision.

KEY TAKEAWAYS

- » IDC believes that the member-360 market is nascent and will continue to grow with the introduction of social determinant data, remote monitoring data, genomics data, compliance data, and member "nonhealth" data into the payer ecosphere.
- » Structured data *and* the management of content/unstructured data should be addressed in any payer enterprise data strategy.
- » A modern enterprise content management platform is needed to capture, manage, process, and secure business content, records, and knowledge. This platform will allow payers to federate existing legacy data sources, providing quick wins by consolidating data and allowing the migration and decommissioning of legacy data systems over time.
- » Low-code tools can enable payers to quickly prototype, deploy, and modify solutions to meet changing business conditions.

» Driving Next-Generation Emergence

- Rationalizing legacy applications and bringing in cloud-based platforms and ecosystems (next-generation claims, care management, wellness, reimbursement transformation) to generate infrastructure cost savings

- Adopting emerging technologies and interoperability standards (IoT, AI/ML/DL, RPA, FHIR, cybersecurity, AR/VR, blockchain)

» Driving Intelligence in Action

- Enabling better ingestion, aggregation, integration, and orchestration of data to improve outcomes and streamline operations

- Shifting focus from "content/data rich" to "information driven" (There is no empathy without intelligence. Content captured in structured or unstructured ways is that intelligence.)

- Emphasizing data excellence and member satisfaction (Empathy ensures engagement.)

Definitions

Optimizing the Individual Healthcare Experience

Within the previously mentioned themes, IDC has identified that optimizing the individual healthcare experience is paramount. The individual healthcare experience consists of three dimensions: consumer experience, patient experience, and patient engagement. Experiences are never linear; rather, they are complex journeys that flow among each dimension (see Figure 1). Individuals can be active in more than one dimension at any time and have multiple journeys happening at once. Technologies and capabilities to support the different dimensions must reflect an ongoing, meticulous effort to understand and empathize with patients to humanize their experience.

FIGURE 1: *The Individual Healthcare Experience*
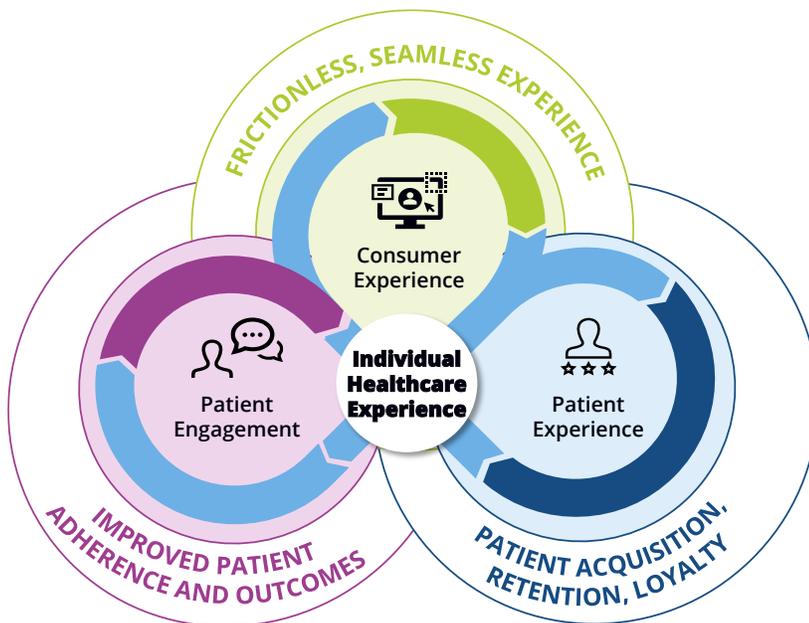
Source: IDC, 2022

The Consumer Experience

Within the individual healthcare experience, being a consumer of healthcare insurance involves front-facing processes and workflows across multiple stages (see Figure 2). While these stages are presented as linear, care events are dynamic, and processes may change as the patient's needs change. These processes will be used as consumers are driven to re-enroll or change plans, need service or care, and then must pay, appeal, or follow up with subsequent administration or care.

FIGURE 2: **Processes and Workflows in the Healthcare Insurance Journey**

Shop for, Purchase, and Subscribe to Insurance	Shop for a Provider, Facility, Service	Pre-Care Administration	Post-Care Administration and Payment	Administrative Support

Source: IDC, 2022

Benefits of the Member-360: Using All the Data

The consumer experience is increasingly enabled by payers in a vision called a "member-360 data platform." This longitudinal data resiliency is expressed as a top-down approach to physical data architecture based on a data management life cycle.

Member-360 Data Platforms Defined

In this approach, all enterprise member data is loaded, curated, stored, accessed, aggregated, and archived. Applications and analytics are quickly spun up and down once the data, workflow, and services are in place. This approach centers on a "canonical data model" and is based on standards such as HL7, FHIR, and ONC's U.S. Core Data for Interoperability [USCDI] or the Observational Medical Outcomes Partnership [OMOP] data model, which is an approved USCDI model that is mappable with public information to FHIR standards.

The data platform not only is the structure of the data but also includes the workflow around ingestion, mapping, cleansing, codifying, and verifying personal identification and data quality.

Once the data is staged, services layers or applications can point to the data in its various forms of aggregation and content. Services are enabled for analytic workbenches, models, reports, dashboards, and machine learning opportunities. Further, the constellation of legacy and new applications is pointed, either directly or via mapping, to the data platform to ensure consistency in all ways: care management, consumer engagement, point-of-care support, or partner applications.

Obviously, this "data factory" approach involves a move away from process/function and toward a data management life cycle. Data is created, lives, is read, is updated, and dies in a stewarded fashion. As mentioned, the data platform not only provides the structure of the data but also includes the workflow around:

» **Ingestion.** The utilities and workflow and scheduling for fast, predictable, and repeatable data landing

» **Mapping.** The utilities, tables, and translation rules that connect source files to enterprise meaning

» **Cleansing.** The utilities, tables, lookups, and verification sources to identify "truth" using standards such as RxNorm, SNOMED, and HL7

» **Identification.** The utilities, maps, and stochastic and deterministic rules that assign data to a person (member/provider) or other enterprise entity

» **Data quality management.** The ongoing management and monitoring of ingestion, curation, and mapping to identify and resolve outliers

Benefits of Member-360 Data Platforms

The following are key benefits of using a member-360 data platform:

» Enables a "product/plan of one"

» Meets the CMS interoperability mandates (Although initial conversations around compliance with the Interoperability and Patient Access Final Rule have been around access to structured databases, it likely won't stop there. So, gaining access to unstructured information is critical not only to digital transformation but also to compliance.)

» Handles low-technology data sources and targets

» Encourages loyalty and retention of insurance members

» Facilitates the merging/aligning of payers and providers

» Speeds service to members, enhancing satisfaction and performance rankings

» Lowers costs

Trends: Technologies Involved in Member-360 Implementation

For organizations looking to build/buy member-360 logical or physical data capability to handle content, care, and engagement, the following technologies come into play:

» Identity and access management

» Data ingestion, curation, and cleansing via ETL or advanced engines

» "Enterprise" master patient index (EMPI) — a centralized, cross-platform solution designed to link/match and reconcile records in real time, from diverse systems, to correctly assign records to a unique "person"

» Longitudinal health records in a member-360, data warehouse, data lake, and/or FHIR server

» Business rules engines

» Data encryption

» API management

» Secure enterprise member communications management platform including delivery mechanisms that leverage the member-360 by allowing member preferences of channel, media, cadence, and content to be targeted in a personalized way

» Data use logging and audit

» Enterprise content services platform with workflow and intelligent automation capability

■ Enterprise content strategies include the rapidly evolving digital content services to capture, manage, process, and secure business content, records, and knowledge.

■ Document applications enable users to create, author, edit, and publish content, including spreadsheets, images, videos, text documents and presentations. Applications include office suites, forms, surveys, esignature, diagramming, elearning, and document generation software.

■ Capture applications convert unstructured data to structured information that can be passed to another enterprise application and/or consumed by a downstream task or process.

■ Content sharing and collaboration applications enable users to store, synchronize, and share file-based content and folders across designated devices, people, and applications.

■ Process automation and audit trails provide a foundation for regulatory compliance in the context of automating content-centric business processes, the content that explains or documents business decisions, and establishing a system of record.

■ Low-code tools enable rapid innovation and deployment of new applications that connect content, members, providers, and employers and take significantly less time and cost less than traditional programming.

Trends: What Member-360 Use Cases Involve Unstructured Data in Payers?

IDC predicts that by 2025, 80% of the total global datasphere will be in the form of unstructured data, which will grow to 144.3 zettabytes. Organizations need to connect relevant information across the healthcare enterprise from the following sources:

» Business content

» Financial and claims data

» Medical imaging data and content

» Medical device data

» Patient data from external providers

» Social determinants of health data

» Patient-generated health data (PGHD)

» Real-world data and evidence

» Research and academic data

» Consumer data

Specific examples of unstructured data that needs management include:

» Enrollment/onboarding enablement

» Pre-authorization support

» "Data sharing consent" information

» Medicaid referrals

» Transportation (Medicare Advantage or Medicaid)

» Appeals and grievances

» Medical record and HEDIS request tracking

» AI-based medical notes review and data extraction

Considering Hyland

Hyland Alfresco is an example of a top contender in this market and should be considered. Features include:

» Open, easy to integrate and extend

■ Open, modular architecture with REST APIs and SDKs and low-code development tool allows extension of the Alfresco platform.

■ Alfresco Development Framework is low-code tooling that provides a range of highly configurable, reusable components that can be used to create modern, responsive web and mobile end-user applications.

■ Alfresco Process Automation features low-code tools that help nontechnical users as well as developers to automate everything from simple document approval workflows to complex content-rich user journeys.

» Scalable, cloud-native architecture

■ Built to deploy in the cloud, Alfresco is optimized to take advantage of a cloud vendor's infrastructure, scale, elasticity, services, and innovation.

■ Open and modular approach provides a scalable content services platform that can handle the growing volume of unstructured content and billions of documents.

» Increased security and compliance

■ Business risk is reduced and compliance is strengthened with information governance capabilities that offer a combination of simplicity and control.

■ Governance services provide the security models, audit trails, and roles needed to protect business-critical content and records and confidently demonstrate compliance based on a rich security set developed though years of work with government and intelligence agencies.

- Security classifications and marks are configured for an additional, easily implemented level of security beyond access control lists and permissions.

- Classification levels can be applied to records as well as folders.

» Increased user productivity and improved experience

- Users benefit from native integrations to common cloud office suites and business applications (SAP) with intuitive out-of-the-box experiences optimized for common tasks.

» Flexible deployment options

- Alfresco Content Services may be deployed in the fully managed Hyland Cloud, as well as with public cloud vendors such as AWS or on premises.

- Infrastructure management, application monitoring, and upgrade services are important advantages.

» Reduced total cost of ownership (TCO)

- TCO is reduced with elastic compute, cloud operations, and low-cost cloud content storage and managed services.

» Artificial intelligence

- Alfresco Intelligence Services offers a scalable way to automatically enrich content and gain valuable insights by leveraging AI and machine learning from Amazon Web Services (AWS).

» Enterprise/federated search

- Businesses can be modernized while keeping legacy systems, and the business processes that rely on them, in place. Federation services allows organizations to manage content in place while creating day-forward architectures to reduce complexity and cost and support digital transformation initiatives.

- Alfresco Search supports the Elasticsearch platform for searching within the repository. Elasticsearch is an open source search platform that uses the Lucene engine for indexing and searching. Elasticsearch is written in Java and runs as a standalone search server.

Challenges/Opportunities

The Alfresco solution should be considered particularly in light of the following market challenges faced by payers:

» Evidence-based practices guiding how to combine nonclinical data with clinical data are still in their early days.

» Clinical trustworthiness, reliability, and credibility of certain types of nonclinical data (e.g., PGHD) are still being explored.

» Reimbursement for utilization of nonclinical data can be unclear at times.

» Payers should consider a cloud-native content services solution that is scalable, cost-effective, and designed to meet their business needs. However, moves to the cloud to manage nonclinical data may prove to be a heavy lift considering petabyte (PB) levels of data involved.

» Most payers have multiple existing on-premises content services solutions and should consider how they will replace them and provide access to content in these disparate systems as they roll out a new content services solution. A modern content services platform will allow payers to federate existing legacy data sources, providing quick wins by consolidating data and allowing the migration and decommissioning of legacy data systems over time.

» Low-code tools can enable payers to quickly prototype, deploy, and modify solutions to meet changing business conditions. Access to photo and video files can also improve decision making and speed up processes.

Conclusion

Today, the member-360 is the center of a customer relationship management ecosystem. This ecosystem is where all enterprise functions operate, are modeled, and are examined continuously for accurate or more profitable relationships.

Data management in payers is evolving with the introduction of many flavors of member-360 technology platforms. Vendors with histories in payer health administration (care, utilization, and population health management), healthcare cost/quality analytics, payer core administration (enrollment, claims, and appeals), data management (data factories, data warehousing, and NoSQL databases), information exchange (HIE, EDI, interoperability, and API), content management, and electronic health records are converging around a unified customer profile for members. This lofty ambition meets the challenge that payers have as they try to serve outward-facing consumerism and the need for sharing structured and unstructured data via FHIR and other exchange standards across the healthcare ecosystem.

IDC believes that the member-360 market is nascent and will continue to grow with the introduction of social determinant data, remote monitoring data, genomics data, and member "nonhealth" data into the payer ecosphere.

Complementary to traditional structured data, unstructured data provides equivalent value, and content management should be addressed in any payer's enterprise data strategy.

Numerous content services systems are in the market today, but an open, highly scalable enterprise content management solution will offer larger payers the most flexible solution because it is built on open source code with support for open standards and APIs and is easy to integrate and customize to meet their business needs.

About the Analyst

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Jeff Rivkin, M.Sc., CHRS, PAHM, CPEHR, CBIP, CCP, CDP, has been the Research Director of Payer IT Strategies for IDC Health Insights for over six years. In that role, he is responsible for research coverage on payer business and technology priorities; constituent and consumer engagement strategies; technology and business implications for front-, middle-, and back-office functions; value-based reimbursement; risk; and quality-based payment and incentive programs, among other trends and technologies important to the payer community.

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More About Hyland

Hyland Healthcare provides connected healthcare solutions that harness unstructured content from all corners of the payer organization and link it to core applications. We offer a full suite of content services solutions, bringing documents and other relevant data to the stakeholders that need it most. This comprehensive view of information along with workflow automation and low-code development tools help payers accelerate business processes, increase efficiency, reduce costs, and improve relationships with employers, providers, and members.

For more information, visit www.hyland.com/payers

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