IDX Systems Corporation: Single-source publishing and knowledge management

Leading healthcare information technology supplier leverages single-source ECM initiative to provide top tier documentation, training and customer support resulting in improved product quality and customer satisfaction

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IDX
Making a Difference in Healthcare™

IDX Systems Corporation reviews a grass roots initiative to evolve and consolidate processes and tools for authoring, publishing and distribution of product-related information. Their recipe of consensus building, careful attention to requirements, a focus on process improvements backed up by corresponding organizational changes and the migration to an enterprise content management platform is poised to deliver significant improvements in perceived product quality and customer satisfaction. What is particularly unique is that this far-reaching initiative was conceived, project managed and implemented by a team of writers and courseware developers. Content modeling, content management technology and process re-engineering are typically the exclusive domain of IT and information technology specialists. This success story demonstrates both the power of content technology to drive complex single source initiatives and the ability for stereotypical "end users" to control their own destiny even as they incorporate new technology and interoperate with their internal and external constituencies in new and more effective ways.

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Introduction

Content Technology Works (CTW)

CTW is an industry initiative that is administered by The Gilbane Report to develop and share content technology best practices and success stories. The premise is that when given enough proven recipes for success, enterprise consumers will be able to adapt and replicate that success for themselves – increasing productivity and confidence. Success stories are written by The Gilbane Report and are told in the voice of the enterprise adopter with final editorial control resting entirely in the hands of the adopter.

The result is that:

- Vendors do not control content
- Success stories are as opinionated and as jargon free as the adopter prefers
- Analysis is included from The Gilbane Report and invited contributors
- In addition to technology recipes, strategies for securing funding, measuring actual value, driving adoption and other business and social issues are of interest

Typically, this kind of valuable information is only available for purchase. CTW content is different because CTW partners subsidize the program to ensure that this information is free. Partners want to push as many best practices to as many organizations as possible with the expected result being an overall acceleration of content technology adoption. For more information on the CTW program, visit www.gilbane.com/technology_works.html.

Overview of success story

Flowcast™, an operating unit of IDX, found a way to transition from a fragmented authoring and publishing environment to a consolidated set of processes and infrastructure that now drives much of their customer product-related information authoring, packaging and distribution. Previously distinct documentation, course development, and training efforts have been integrated to maximize reuse and to prioritize accuracy, consistency and usability of all content-driven product components. The result is a revamped organization that will accept nothing less than marked improvements in organizational productivity, product quality, usability and customer satisfaction. Virtually every phase of this project from business case development, technology selection, information modeling, process re-engineering and project management was undertaken by technical writers and courseware developers and their immediate management. The result is a highly effective single-source solution built upon an enterprise content management system and a content creation and knowledge management organization that has revamped most of its processes to deliver measurable improvements in product quality, productivity and customer satisfaction.

Goals and non-goals

This success story outlines essential elements of a successful single-source publishing and knowledge management initiative in support of a complex technology product. This is an individual story told in the voice of the "end-user" organization. While their approach may not be universal, their success is indisputable. This is not an attempt to generalize IDX's recipe for success into a universal formula.

Acknowledgments

The Gilbane Report would like to acknowledge the generous contribution of time and intellectual property from IDX Systems Corporation. Specifically, they have allocated the time of talented and heavily committed staff to improve the understanding and adoption of enterprise content technology.

In Their Own Words: The IDX Perspective

When selecting a fine restaurant, nothing is more valuable than a review. The best ingredients and the latest recipes cannot guarantee a great night out; price, service, convenience, etc. are all critical elements. CTW success stories are organized around a *recipe* for success rather than the *ingredients*. This interview section takes the analogy one step further and provides a review of the entire experience, from soup to nuts. Here, the enterprise adopter introduces their experience with an eye towards enticing others to follow.

What were the symptoms in your organization that brought this need to your attention?

How did you know you were hungry?
"Six Sigma formalized a way of describing and measuring what many of us intuitively already knew: our documentation, training and other product-related information was often out of date, and the documentation was fragmented, which often frustrated our customers. Feedback from the customer was to make it easier to find information."
- Andy Treanor, Vice President IDX

"This was a problem that was pretty well understood. Customer feedback was consistent. Further, as our product set continued to grow, we knew that we had to fundamentally change how we produced material because we were not able to keep up, and we knew that as an organization we needed to do much more."
- Cindy Johnson, Director, Flowcast Education & Knowledge

"Developing training material for complex product components across multiple releases and targeting multiple user groups resulted in a massive matrix of training components, each of which had to account for different products, versions, platforms, user interfaces, user groups, releases, internal roles, etc. It was soon apparent that it was impossible to manage revisions, updates, etc."
- Xianming Yuan, Flowcast Principal Educational Technology Consultant

"We knew for some time that we needed to find a better way to develop documentation and training, but with over 100K pages of existing documentation and new product information being written by disparate groups including development, marketing, support, and installation, it was a huge challenge to organize and execute a program that would be effective for everyone."
- Cathy Adler, Lead Project Manager

How did you identify what specific content technologies were appropriate?

How did you decide on what you wanted to eat?
"The Six Sigma approach helped us to hear what our customers needed from us, and those requirements were, from my perspective, the final word on what IDX needed to find in its enterprise content management solution."
- Andy Treanor, Vice President IDX

"This was truly a grass roots initiative driven by the authors and courseware developers, and while we understood very well what our requirements were, we recognized that we needed an outside expert to help us articulate those requirements in terms of an RFP and measure those requirements against specific vendor responses."
- Cindy Johnson, Director, Flowcast Education & Knowledge

Which vendors did you select and what were the overriding considerations?

Where did you dine and why?
"We chose The Rockley Group to serve as our outside consultant during our requirements and vendor selection process. They worked with us to solidify our requirements and to map them against the current crop of technology suppliers.

The more difficult decision for us was the selection of our enterprise content management platform. We knew that we would need a flexible solution to avoid extensive customization costs both short term and into the future, and we wanted a vendor that could help provide some guidance and project management skills to the project. We wanted to feel like our vendor was truly a part of the project and therefore would be responsive and committed to our success. And finally, we wanted a group of people that we felt that we would work well with - we had an aggressive schedule and didn't want to get dragged down with communication issues. Based upon these criteria, we selected Vasont Systems for our ECM [Enterprise Content Management] platform.

For authoring, we chose to work with Arbortext's Epic. Epic had the functionality we required and Arbortext is a dominant player in their market."
- Sue Wear, Flowcast Lead Technical Writer *and team member tasked with tool selection for single source project*

"For our ECM platform we selected Vasont Systems. They were the only content management vendor that understood SCORM, an important standard for web-based learning."
-     Xianming Yuan, Flowcast Principal Educational Technology Consultant

"The team selected Vasont Systems, and one of the most challenging aspects of this rollout was the integration of this new single source environment into the rest of our web-based infrastructure that powers our web sites, customer support portals, development environments, etc. Vasont Systems was responsive and a pleasure to work with."
- Scott Stough, Flowcast Lead Software Engineer

How did you justify the funding and other necessary resources?

How did you pay for the meal?
"There are numerous benefits that flow from a more efficient publishing process and higher quality content. However, we focused on straightforward cost savings to justify this initiative. One significant area was in customer support. We found that 3% of our support center's effort was spent providing customers with information that they did not have easy access to. By providing more complete and intuitive content in our documentation and training and creating a more self-service environment for our customers, we could save roughly $1 million per year."
- Andy Treanor, Vice President IDX

"With the redundant effort we estimated across the knowledge functions (documentation, training, course development) in our old mode of operation, we projected we would eventually be able to commit to a significantly higher volume of work while simultaneously improving the timeliness and quality of our documentation and educational materials without increasing our headcount."
- Cindy Johnson, Director, Flowcast Education & Knowledge

"We went to specific customers that had been historically negative about our documentation and asked them for feedback on our proposed plans to improve our authoring and publishing processes, and they loved it. Their enthusiasm and their opinions on what it would mean to their use of IDX products played a key role in getting executive approval and in predicting an ROI."
- Cathy Adler, Lead Project Manager and Documentation Manager for Flowcast products

What were the most valuable lessons learned?

What advice would you give your friends?
"Do small quick meaningful projects – doing too much can take too long, delay returns, and increase initial costs, and this makes it more difficult to sustain support and funding.

Trusted relationships with your suppliers are extremely important in projects that involve significant organizational change and technological innovation. There are always unanticipated issues that require flexibility on all sides. A strong relationship with your suppliers makes these inevitable project management challenges manageable.

Insist upon training that is hands on and relevant to each user's situation."
- Cindy Johnson, Director Flowcast Education & Knowledge

"Take time after the pilot and initial deployment to assess the level of effort to go into broader production. Conversion, training, additional resources and so on can be significant. Moving to single source is as transformational as replacing the company's financial systems and other enterprise initiatives. Make sure that this kind of project is treated as seriously and with the same level of organizational support."
- Bo Price, Principal Technical Writer

"A technology-inspired initiative can only be as successful as the people you get involved – from the sponsor all the way to end users. Identify people that are committed to make the project a success. Understand why the project is important and have broad agreement.

Have a plan for how you are going to further exploit the project once it is complete. A concrete vision is good for both sponsoring executives and for a sense of context and purpose for those directly involved in the project."
- Scott Stough, Flowcast Lead Software Engineer

"Have weekly status meetings, consistent people on the project and ideally only one project manager; build openness and trust among the team and with your suppliers – work to solve problems. As a customer, we need to communicate priorities fairly to our suppliers – don't make everything critical."
- Sue Wear, Flowcast Lead Technical Writer

"Before beginning a transformational initiative like single source content creation and management, talk to others who have done it. Take training on structured authoring, ECM, etc.; develop an understanding of the complete project lifecycle and how it will fold into existing processes. Do not underestimate the cost and effort of legacy migration. Do not do a throw away pilot where you are not likely to test all difficult aspects."
- Susan Boor, Flowcast Lead Technical Writer

IDX Systems Corporation Background

Founded in 1969, IDX Systems Corporation (NASDAQ:IDXC) uses information technology to maximize value in the delivery of healthcare – by improving the quality of patient service, enhancing medical outcomes and reducing the cost of care. IDX customers span the full care continuum and include leading academic medical centers, management service organizations and hospitals nationwide. Customers include 138,000 physicians who utilize practice management systems to improve patient care and other workflow processes. IDX supports this diverse customer base through a broad range of complementary and highly integrated products. These products include:

- Flowcast™ solutions combine advanced, workflow software with proactive consulting services and support for IDNs, hospitals, and large physician group practices.

- Groupcast™ provides patient management, financial management, and decision support solutions for mid- to larger-size group medical practices and physician service organizations.

- Carecast™ supplies healthcare institutions, such as integrated delivery networks, academic medical centers and hospitals, with integrated clinical and financial solutions.

- Imagecast™ provides healthcare institutions, such as hospitals, AMCs, IDNs and imaging centers, with distributed access to significant clinical findings and associated images.

It is the *Flowcast* operating unit that initiated and has deployed the single-source solution covered in this success story. Figure 1 provides a high level functional overview of *Flowcast* functionality.
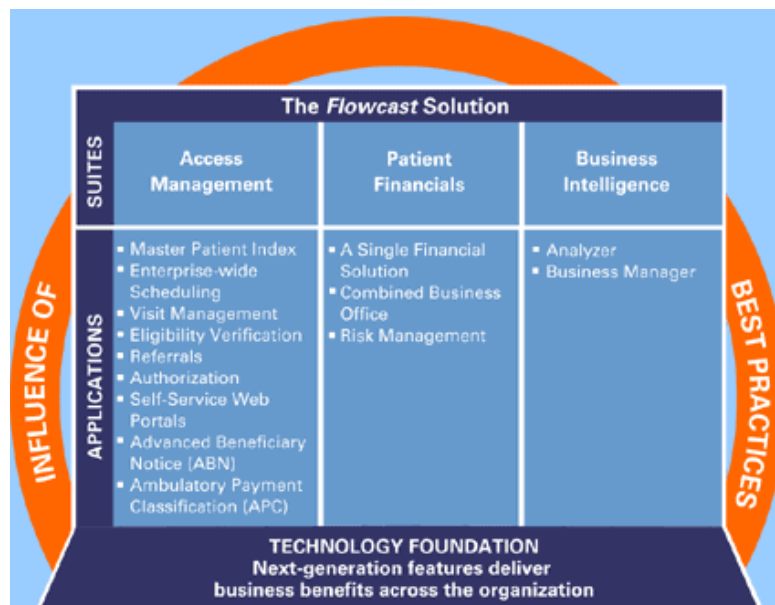

Figure 1: Flowcast functional overview

For more information on IDX and its product offerings, visit www.IDX.com.

Criteria for success

Problem definition

The impact of having overloaded technical documentation and education organizations was felt across the Flowcast organization and, most significantly, by their customers. However, each organization experiences these issues differently.

Customers

Customers identified the following challenges:

- Lack of integrated document set. There were multiple manuals available for each product based on version. There was no single integrated document set. Customers were frustrated with having to go through multiple documents to find answers to their questions. It was time-consuming and prone to error.

- Lack of dictionary information. Dictionaries are the core of IDX software, and they want to know how a field is used, when it is used, and why it is used. Dictionary information was inconsistent from document to document, and frequently only a short description of the field was provided

Authors

Authors identified the following challenges:

- Difficult to find information. Source information to aid authors in creating their materials was spread out over numerous databases, portals, desktops and people's heads. "There was no way to search across all the sources of information, and there was no way to determine once information was found whether it was the most current. It was also not possible to know if they had found all relevant information."

- Content was inconsistent. Content that appeared in multiple places was inconsistent from one area to another. In addition, it was hard to keep the content up to date.

- Duplication of effort. There was a lot of duplication of effort. Software designers and engineers wrote content that was rewritten by authors for training and documentation, and authors rewrote information in documentation for training and vice versa.

Internal users

Internal users identified the following challenges:

- Finding the right information was difficult. Content was spread out over many databases, portals and desktops. It was impossible to determine if content was current.

- Documentation was not current with the current product release. Customers relied on customer support to overcome documentation problems.

- Defects in the documentation didn't get fixed in a timely fashion. Once defects were logged, the turnaround was perceived as too slow.

- More training materials on new features. Customer support, consulting, etc. needed better training on alpha and beta products to prepare them for the first customer shipment.

Criteria for success

This initiative was obviously far-reaching and visible. IDX executives had invested in Six Sigma and had developed a trust in the implementation and control phases. While this is not tied directly to the single-source initiative, it provided a framework for this group of technical writers and trainers to communicate, demonstrate and validate the value that this initiative would have in a form that executive management could easily relate to. Specifically, the criteria for success included:

- Produce at least 25% more content with the same resources

  o Recapture organizational capacity spent on redundant content creation and production

- Increase customer support capacity through

  o Delivery of content with each product release

  o Creating materials that match our customer needs, when they need them as captured by the Six Sigma process

- Increase customer satisfaction through

  o Up-to-date and accurate content

  o Reduced turnaround to suggestions and logged defects

  o Increased customer ability to self serve

  o Decreased installation cycle times

Solution Components

Product components and architecture

The Flowcast architecture is deceptively simple: have each content contributor share a common authoring environment, a common repository and a common information model. Then, automate a publishing process where the resulting content, metadata and formatting requirements flow into multiple formatting engines that target particular audiences and media. It is deceptively simple in that in order to deploy common components that will ultimately succeed; these components must meet exacting requirements from very diverse stakeholders that have become accustomed to selecting tools without having to consider any other group's needs or expectations. The following architecture and specific commercial components provide the engine and infrastructure able to deliver single-source publishing. As we will see, without the corresponding organizational changes, there would be no one to drive the infrastructure where Flowcast needed it to go.
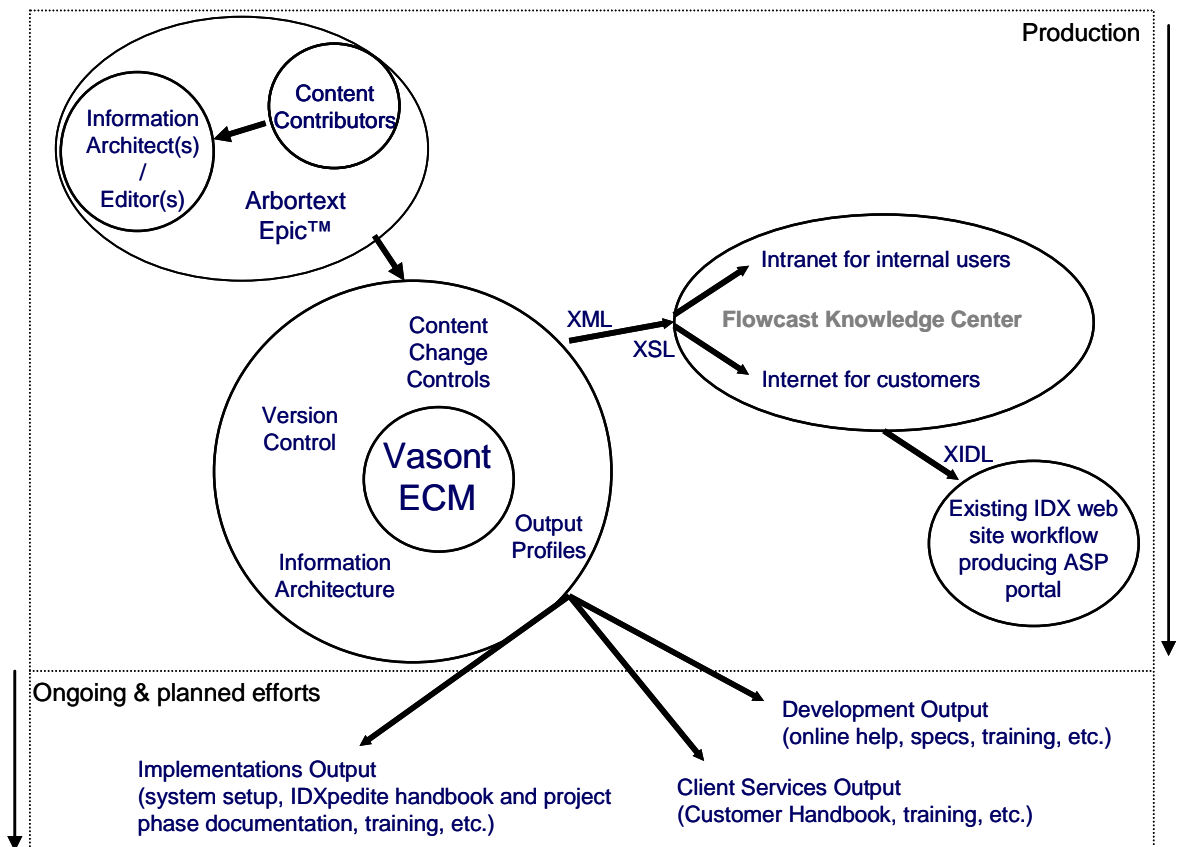

Figure 2: Flowcast components and architecture

Best practices and organizational changes

One of the most important elements of Flowcast's recipe for success was their reorganization of the technical documentation, course development and training delivery organizations into a single, integrated team that authored content once and then assembled and reused that content as part of a unified documentation and knowledge management publishing process.

Today, the team plans together (understands audience, focuses on the full set of information deliverables and develops a solution set with maximum reuse). They are in the process of moving towards a single comprehensive set of documentation for *Flowcast*.

The organizational changes enabled a boundarylessness in thinking when resourcing projects. For the initial phase, we prioritized reference content over learning content. While asking courseware developers and trainers to write core content was initially a challenge, the sense of a shared mission and the increased understanding and respect for each role in the information lifecycle has drawn the group closer together and improved the quality of the work. Further, since trainers and courseware developers contribute directly to core content, they become much more familiar with the product, courseware material is completed alongside the first customer ship of the software and trainers are ready before the general release of the product.

Project timeline summary

- *Oct. 2002-Mar. 2003:* Consultants retained; Problem analysis kickoff; VOB & VOC identified (Voice of the Business and Voice of the Customer); Tools selection; Pilot planning

- *Jan. and Mar. 2003:* Initial Modeling meetings

- *April 2003:* Initial tools training

- April-Oct.: Pilot

- *Sept. 2003:* Authors trained and begin entering content for live system

- *Nov. 2003* thru Mar. 2004: Conversions of new product release info from Word and Frame documents into the ECM

- *Jan. 2004:* Pre-release of Knowledge Center, a web-based content delivery mechanism. Contains XML content output from the Vasont database, PDFs on hard-coded web pages, and internal links to views of other internal documentation sources.

- *Mar. 2004:* General release of Knowledge Center.

Results

IDX Flowcast Version 3.0 Update

Flowcast v3.0 was released March 2004. About 90% of the new feature and related information was output into our web-based Knowledge Center delivery mechanism from the Vasont ECM. We are also outputting the same new feature and related content into PDFs.

At least half of our knowledge management group, including technical writers and some trainers, are authoring into the ECM. We are constantly refining processes and standards, and have given additional capabilities to some authors as they exhibit thorough understanding of the relationship between the ECM and what that content looks like in our various outputs.

We started pushing updated/new content from the ECM to the web-based Knowledge Center on a two-week cycle until content updates slowed down. We are now at a one-month update cycle.

A supplier's voice: Vasont Systems

When the content management market exploded years ago, the term "content management" became synonymous with "web content management." Although a web site is a critical channel for organizations to reach out to their customers, it is not their only communication vehicle. Traditionally, the market often overlooked a fundamental aspect of an organization's business process – its highly complex print content, such as technical documentation, training materials and users' guides. In order for organizations to fully gain control of their volumes of content, they need a system that can help them maximize the reuse of their content across multiple documents throughout their enterprise, as well as the repurposing of their content to diverse media channels, such as the web, print and CD-ROM.

The Flowcast operating unit of IDX recognized that they needed a more streamlined process for developing, managing, and reusing their technical documentation and training materials, which included more than 100,000 pages of existing documentation as well as new product information written by content contributors from different departments. In order to figure out how to best solve their content challenges, the IDX team did its homework. They took the time to carefully identify the main obstacles they faced when developing and publishing their documentation; to listen to their customers' needs and frustrations; and to strategically map out how a content management system could help them achieve their business goals and improve customer satisfaction.

Flowcast had two high level principles of content management in mind: separating the content from the formatting and taking a content-oriented, not document-centric, approach to organize the content. Before the division evaluated different content management vendors, its team of technical writers and courseware developers analyzed their content and its business uses to create a content blueprint. Flowcast's content blueprint was a fundamental step in this process because it outlined how their content should be organized and classified to improve productivity and efficiencies in creating, managing, reusing, and publishing information.

The Flowcast team's strategic plan and solid understanding of how they could organize their information in Vasont was a key ingredient that made this initiative a success. They clearly communicated to us what they wanted to accomplish, making our engagement with them truly a collaborative effort. We worked together with them to ensure that their expectations were met and content challenges were alleviated.

Because of Vasont's single-source functionality, Flowcast reached their blueprint's objectives. Vasont allows organizations to break their content into components or reusable chunks, such as paragraphs, chapters, or sections. Flowcast stores their chunks of content one time in Vasont's repository so that their content contributors can reuse them as many times as they need within their documentation or across numerous documents independent of the media format. IDX is currently leveraging Vasont to publish their documentation to both print and the Web. Additionally, Vasont's integration with XSLT and XSL-FO eliminated the manual task of writers formatting their content. The tight integration with these style sheets automates the formatting process, enabling Flowcast's content contributors to focus more on the accuracy of their content and less on its format and style.

We look forward to continuing our relationship with IDX.

For more information about Vasont Systems, please visit www.vasont.com.

Conclusions

It is all too common for individuals within an organization to grouse about the inefficiency of their organization while asking out loud why no one is doing anything about it. There is little doubt that successfully deploying an ECM solution from conception through funding, development, deployment and ultimately adoption is one of today's most sophisticated IT challenges. The core team at IDX were authors, courseware developers and trainers with little or no previous experience in information modeling, XML-based structured authoring or content management. Their success is a testament to their skill, focus and dedication to doing their very best for IDX and for their customers. It is also a testament to what can be accomplished when vendors, such as Vasont, team with their customers to provide targeted support and training alongside content technology that works as advertised.

As relative newcomers to the ECM arena, these non-IT professionals were not confused by the debate around enterprise content, document, XML or web content management and developed their own working ECM definition that was aligned to their customers' expectations on the behavior of their product, *Flowcast*, and on their own intuitive understanding of how content creation and distribution workflows should work. This begs the question as to who really benefits from the debates on the distinctions and overlaps of these content technology categories.

Partner Page: Behind the scenes at Gilbane CTW

When we first conceived of an initiative that would develop and distribute success stories that placed *recipe* over *ingredients* and favored no supplier, technology or computing standard, we also recognized that our most significant hurdle would be to recruit vendors to subsidize such an independent and open process.

Since the CTW program was first conceived in late 2003, we have sought out suppliers who were passionate about and committed to content technology as a game changing force in the markets that they served and secure in the value of the products and services that they offered. The following vendors have literally put their money where their mouths are. They know that public, open and unfettered access to successful enterprise deployments, regardless of the technology mix, only benefit the commercial aspirations of organizations that offer material, dependable and predictable value.

Please join The Gilbane Report in thanking these diverse and often competing organizations for their generous support and sponsorship of the development, promotion and distribution of CTW material. They are an elite group. They are: Software AG (TECdax:SOW), Sun Microsystems (NASDAQ:SUNW), Artesia Technologies, Atomz, Context Media, Convera (NASDAQ:CNVR), INSCI (OTCBB:INSS), Trados, Vasont Systems, Venetica and Vignette (NASDAQ:VIGN).