Partnering for Data Monetization Success

Paul Tallon, Barbara H. Wixom, Anne Buff

Paul Tallon is professor and DeFrancis Scholar in Information Systems at the Sellinger School of Business, Loyola University Maryland.
pptallon@loyola.edu

Barbara H. Wixom is principal research scientist in the MIT Sloan Center for Information Systems Research.
bwixom@mit.edu

Anne Buff is business solutions manager and thought leader for SAS Best Practices, a thought leadership organization at SAS institute.
Anne.Buff@sas.com

Introduction

For decades, organizations have explored ways to generate value from data inside the firm by using data warehousing, business intelligence, business analytics, and big data to improve business processes and decisions. In recent years, companies hoping to make the most of their data assets are looking outside the firm for new opportunities. Among these opportunities is data monetization: the act of exchanging information-based products and services for legal tender or strategic value of some kind. (Wixom, 2014)

Data monetization is not new for companies that are good at business intelligence (BI) and business analytics. In the mid-1990s, for example, medical supply distributor Owens and Minor began selling BI reports to its customers (i.e., hospitals) and suppliers (i.e., supply manufacturers). Although Owens and Minor initially built BI to support decisions made by its own salespeople, the company recognized that its data and BI capabilities would be valued across the supply chain. The company's data monetization efforts evolved for several decades to become what is now called OM Solutions, a division of Owens and Minor that provides an array of data-based services ranging from selling data, BI reports, and business analytics to offering professional services and business process outsourcing.

What *is* new is that more companies today are considering data monetization as an additional source of revenue. Companies are becoming more digital, investments in data capabilities are growing, and internal BI and analytics capabilities are maturing. As a result, boards of directors and executive teams are considering data monetization as an important business opportunity.

The problem is that data monetization requires more than traditional BI or analytics; it requires better and different capabilities so that data offerings can be productized. Imagine best-practice BI and analytics competencies packaged with customer service, product development, innovation, environmental scanning, and legal capabilities. Some of these capabilities require foundational skills, technology, and problem solving know-how that are often difficult and time consuming to

acquire or build. As a result, our research has uncovered that a key to data monetization success is effective partnering.

Partnering allows an organization to obtain requisite resources or capabilities for data monetization, and transp. through our research we witnessed a wide variety of partnership relationships that firms are creating to support their monetization efforts. This article describes seven different partnership models and explains when and why each may be worth considering for your organization.

Methodology

In 2014 at the MIT Sloan Center for IS Research (MIT CISR), scientists interviewed 58 executives at 34 companies regarding data monetization approaches. In addition, the research scientists conducted seven in-depth cases studies featuring information businesses. The audio of the interviews was recorded and trascribed to ensure accuracy. We used grounded theory techniques to analyze the transcript data and to extract important concepts and relationships that would inform best-practice approaches in data monetization.

Partner #1: Data Source Owners

Rarely does an organization possess (or own) all of the source data required for monetization. For example, a retailer may need to combine data from its customers and from a third-party demographic data provider with its own sales data before it can produce meaningful reports about spending behavior for its suppliers. This is a task with which BI professionals are intimately familiar.

ComScore is a 15-year-old marketing research firm that informs digital advertising and marketing activities by monetizing petabytes of online data collected in real time from around the globe.[1] ComScore's information offerings are based on data from four primary sources that are accessible because of partnerships with Internet users, digital media properties, panel members, and other information businesses:

- Panel data collected from two million Internet users, one million of whom are based in the U.S. Panel members grant comScore permission to confidentially capture passive measurement of user behavior and demographics.
- Sensor data gathered from sensors placed, with permission, on approximately 90 percent of the top 100 U.S. digital media properties.
- Perceptual data collected from panel members using proprietary surveys.
- Data obtained from strategic partners. For example, comScore uses loyalty card in-store purchase data from dunnhumby—a UK-based company specializing in customer data analysis—to help tie together online advertising campaigns with offline, in-store purchases.

Data source partnerships can add value to a company's data by adding more variables and/or more rows, ultimately improving comprehensiveness and generalizability. When establishing data source partnerships, companies must craft a strategy that ensures data source owners are on board with providing data in a sustaining way. The strategy needs to address contractual requirements (e.g., expectations of use, data handling, and management) as well as incentives (e.g., payment, information services, and customer benefits).

Partner #2: Clients

Although an organization's clients can represent a key data source owner, clients can also play a role in developing new information offerings—or in honing existing ones. In our research, we observe that most organizations that commit to data monetization are partnering with clients within product development, product management, innovation, and R&D processes.

As we explained earlier, medical supply distributor Owens and Minor monetized its supply chain data for two decades by developing spend analytics offerings and selling them to hospitals that were actively trying

[1] For more information on comScore, see Wixom, Barbara H., Jeanne W. Ross, and Cynthia Beath [2013]. "comScore, Inc.: Making Analytics Count" MIT Center for Information Systems Research Case Study, 392, November.

to reduce the cost of patient care and to manufacturers who were attempting to improve sales. The company developed these offerings with heavy customer (i.e., hospital and manufacturer) input and involvement. When new offerings were being developed and launched, key clients were invited to partner in development during a beta period in which clients offered requirements, tested reports, and provided feedback to the Owens and Minor analytics team, sometimes in exchange for a waived or reduced price.

Success in data monetization depends heavily on being good at innovation.

Partnering with clients is particularly important when client requirements are uncertain. Through formal partnerships, companies can co-create useful information offerings that meet the needs of those who ultimately will use them to make decisions. Partnering is especially useful when the value of a solution to a business problem is unclear to either buyer or seller of an information offering. In these cases, partnerships can take on a risk- and value-sharing arrangement whereby a company works closely with a client to solve a specific client problem with each party sharing in the resulting benefits if and when they materialize.

As companies work with clients to solve problems and co-create offerings, they become highly savvy about their clients' needs. Thus, it's not surprising when client partnering evolves into consulting. About 10 years into their journey, Owens and Minor began offering professional services to customers, which ultimately led to the emergence of its OM Solutions division.

Partner #3: Hardware and Software Vendors

Vendors play an enabling role in data monetization by offering leading-edge, proven technical capabilities and analytics know-how. When technology is less proven, vendors can assume a portion of the risk as they help partners achieve outcomes. Companies that partner with vendors to secure requisite products and services often achieve a much faster speed to market than going it alone. Vendors also can act as trusted advisors to ensure that implemented solutions are optimized for current requirements.

Luxembourg-based mobile marketing company ZapFi provides organizations sophisticated personalized marketing through its free Wi-Fi hot spots called ZapFi Zones. ZapFi required a technology to analyze consumer surfing behavior and intent so the company could send personalized ads to consumers' mobile devices. ZapFi chose software from SAS Institute primarily because it was a proven solution, yet also flexible enough to customize and adapt to their needs.

By partnering with vendors, companies reduce the difficulty of staying up to date with ongoing developments in technology (such as the Internet of Things, big data, analytics, and cloud computing). Businesses can continue to focus on developing products and services for their industry with the confidence that their hardware and software vendor partners will tackle the technical challenges if and when they arise. BI professionals may already have established relationships with hardware and software vendors that can be leveraged to take advantage of data monetization initiatives.

Partner #4: The Crowd

Our research found that success in data monetization depends heavily on being good at innovation. Although a significant portion of data monetization innovation stems from internal organizational efforts, crowdsourcing affords companies an opportunity to gather and test innovative ideas that originate outside the firm. Crowdsourcing can be accessed via analytics communities (e.g., CrowdAnalytix[2]) or via company-led collaborations or competitions, such as Netflix's 2009 search for an algorithm to beat its existing prediction approach.

LexisNexis leverages crowdsourcing as a key part of its monetization strategy, and it does so through an open source development community called HPCC Systems

[2] https://www.crowdanalytix.com/community

that leverages a global open source community to help the company improve its capabilities and deliver big data solutions.[3] Developers benefit from being able to utilize a high-performance platform for big data needs, and LexisNexis gains through constant improvements to its platform alongside increasing knowledge and skills of HPCC in the marketplace.

Finding data scientists with niche domain or technical expertise can be challenging. Crowdsourcing potentially offers access to data science "unicorns" to meet important innovation needs.

Partner #5: Industry, Governmental, and Regulatory Bodies

For companies in turbulent industries, data monetization is a moving target because the problems that data is meant to solve change over time. The U.S. healthcare industry, for example, continues to undergo significant change in response to rising healthcare costs. According to the Patient Protection and Affordable Care Act (Obamacare), healthcare providers are now rewarded for quality of care. Hospitals that previously focused on cost-related problems are now shifting their focus to improving patient care outcomes. Data monetization offerings that help hospitals solve problems need to shift as well to the new focus. This shift is not straightforward, as the required underlying data and analytics are different.

Companies committed to data monetization have excellent environmental scanning capabilities. These companies not only monitor change; they actively participate in influencing or driving change as much as possible. In our research, we observed that employees from data monetizing companies spoke at and participated in organizing committees for trade conferences; they served on standards boards or regulatory committees; and they published in trade magazines and academic journals. These efforts place companies in a position of industry thought leadership where they can observe first-hand macro-level threats and opportunities.

[3] http://hpccsystems.com/faq

At comScore, environment scanning activities created internal awareness of problems associated with digital advertising content that companies paid for but which were never viewed by users. For example, an ad could be too far down on a Web page or the user might navigate away from the page before the ad is rendered. ComScore identified an opportunity to develop information offerings to distinguish whether or not the ad was viewed. The company did not simply produce new offerings; they concurrently worked at the industry level to help the industry communicate the problems associated with unviewed ads. Their actions helped establish the industry standard regarding the measurement of digital ad viewability.

Crowdsourcing affords companies an opportunity to gather and test innovative ideas that originate outside the firm.

Partnership #6: Academia

Academia can help companies in their data monetization efforts in two ways. First, university researchers can develop bleeding-edge approaches and techniques (e.g., technology, algorithms, and methodologies) companies can incorporate into their capabilities or offerings. In April 2015, Boston-based State Street Global Exchange—a custodian bank with over $28 trillion of assets under custody—announced a partnership with the University of California, Berkeley and Stanford University to study systemic risk in global financial markets. The partnership was created to identify hidden risks and detect known risks as quickly as possible. That knowledge will ultimately be incorporated into financial products and services that State Street, in time, could sell to clients and other financial industry participants. (Nash, 2015)

Universities also can be leveraged to help build desired marketplace skills. Healthcare IQ—a Florida-based healthcare analytics provider—surmised that its future

success would depend on the analytics skills in the marketplace and on hospital personnel in particular. As a result, the company created an informatics MBA with the Kate Tiedemann College of Business at the University of South Florida St. Petersburg to train future healthcare leaders in data, informatics, and informatics technology through a transdisciplinary educational approach to data analytics. The online program targets employees across the healthcare industry, allowing them to merge hospital data with on-the-job training in Healthcare IQ tools and a real-world project that addresses specific challenges within their organization.

Partnership #7: Competitors and Other Peer Organizations

Partnering with competitors may sound like an oxymoron, but it can deliver significant benefits in the area of data monetization. The focus here is not on collusion but instead on how to remove or minimize barriers that might otherwise limit a company's ability to monetize its data. The challenge with data monetization is that data can be a wasting asset—it sometimes loses value quickly—so time is of the essence when trying to maximize value.[4] Competitors and solution providers can collaborate on doing this in a meaningful and cost-effective way.

The ad-server industry is particularly vulnerable when we consider the challenge of optimizing banner ad placement within a Web page. There is limited time within which to fill all available banner ad space with relevant and meaningful ads that match each Web user's interests. Rather than use generic banner ads that have minimal relevance to users, buyers (such as advertisers and ad networks) and sellers (for example, media organizations) of ad space could work more collaboratively on using advanced data analytics models to optimize ad revenues.

AdJuggler[5]—a Virginia-based ad server—manipulates two to three terabytes of Web log data daily to accurately price and bid digital media for billions of daily user ad requests. Each request is fulfilled in under 300 milliseconds—less than the time that it takes for an average Web page to load.

To do this, AdJuggler relies on open source products—Apache Storm for real-time streaming and Vowpal Wabbit for fast online machine learning—as the basis for analytics capabilities. AdJuggler co-locates data in a data center with other digital advertising partners to minimize communication delays. AdJuggler uses this data to set a floor price for each ad space on each Web page, basing that price on the characteristics of each user. AdJuggler then connects to an ad exchange where it sells the right to advertise to that user. The entire transaction—floor price calculations, auction announcement, bidding, and ad display—is completed in milliseconds. In this instance, data co-location is critical to allowing sellers to maximize their revenues. Without co-location, ad space would go unused or users would grow impatient and click away from the Web page before the ads appear on screen.

Partnerships Mean More M&A

Although our research uncovered a number of interesting partnership models, it also revealed that data monetization drives heavy merger and acquisition (M&A) activity; most of the data monetization case studies that we conducted revealed some level of M&A. The organizations merged with and acquired (or were acquired by) other businesses for many of the same reasons that they partnered. An added benefit to M&A is the greater control that companies gain over the sustainability of necessary resources and capabilities.

In 2011, Healthcare IQ launched Colours IQ, an advanced analytics tool containing data visualizations via thousands of pre-defined pivot tables. Colours IQ offered an easy and intuitive way to identify and evaluate cost saving opportunities using visualization. The tool's colors and shapes highlighted metrics and thresholds that were customizable by hospital clients seeking a deeper understanding of their cost structure. In August 2014, Healthcare IQ acquired Florida-based Fractalmaps, LLC,

[4] See also Tallon, Paul [2010]. "Understanding the Dynamics of Information Management Costs," Communications of the ACM, May, 53(5); and Tallon, Paul, and Richard Scannell [2007]. "Information Lifecycle Management," Communications of the ACM, November, 50(11).

[5] AdJuggler was acquired in 2014 by Zenovia Digital Exchange Corporation.

PARTNERSHIP DESCRIPTION	EXAMPLE
Data Source Owners	comScore processes data from four sources: panels, sensors, surveys, and strategic partners.
Clients	Owens and Minor has been monetizing its supply chain data for two decades by developing spend analytics offerings and selling them to hospitals.
Hardware and Software Vendors	ZapFi works with SAS to ensure that their software is flexible, customizable, and adaptable to their needs.
The Crowd	LexisNexis leverages crowdsourcing through an open source development community.
Industry, Governmental, and Regulatory Bodies	comScore works collaboratively to tackle the problem of unviewed ads.
Academia	Healthcare IQ collaborates with the University of South Florida St. Petersburg on an MBA program.
Competitors or Other Peer Organizations	AdJuggler uses co-location centers to streamline ad placement.

Figure 1: Data monetization partnership examples.

which had developed the underlying core technology for Colours IQ. Top management believed that fractal mapping technology created a unique data visualization user experience for Healthcare IQ customers, and they wanted to prevent future competitors from having access to the technology (see Figure 1).

Acquisitions allowed New Jersey-based Verisk Analytics to broaden its analytics offerings beyond its traditional focus on the insurance industry into healthcare, aerial imagery, energy, chemicals, metals, mining, and financial services. Verisk made eight acquisitions in 10 years to build and enhance its Healthcare Division alone.

The Importance of Transparency, Fairness, and Trust

We found among these seven unique types of partnerships two common themes that emerge from best-practice partnerships: transparency and fairness. Transparency allows each partner to readily understand the data monetization partnership transaction and feel comfortable with the limitations and controls in place. Fairness is premised on fair trade. Each partner needs to believe that they are being treated fairly for the data monetization exchange to persist over time.

[6] For more information on the capabilities required for data monetization, see Wixom, Barbara H., Jeanne W. Ross, and Cynthia M. Beath [2013]. "Capturing Value from Big Data at comScore Through Platform, People and Perception." MIT Center for Information Systems Research Briefing, November, XIII, 11.

Implications for the BI Professional

Organizations have spent many years and considerable resources building and perfecting BI and analytics capabilities. Although some organizations may consider their capabilities to be best practice, this does not mean that the organization is fully prepared for data monetization. Data monetization requires unique resources and capabilities[6]—and a strategy for creating competitive advantage. Our research suggests that organizations may be able to move ahead faster by partnering. ■

References

Nash, Kim S. [2014]. "State Street Draws on Neuroscience for Financial Systems Analytics Project," CIO Report blog, *Wall Street Journal*, April 14. http://blogs.wsj.com/cio/2015/04/14/state-street-draws-on-neuroscience-for-financial-systems-analytics-project/

Wixom, Barbara H. [2014]. "Cashing In on Your Data," Center for IS Research Briefing, August, XIV, 8.