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TIPPING POINT

INFORMATION INDUSTRY OUTLOOK 2016

October 1, 2015

ABOUT THIS OUTLOOK

Anthea C. Stratigos

Every day, Outsell researches, analyzes, and forecasts the trends and developments that affect you and your business. In its 16th edition, the Information Industry Outlook 2016 is a labor of love from the entire Outsell staff, crafted to serve you and your teams with the best industry intelligence you need to support your mission-critical decisions.

At Outsell, we believe the combination of people, media, information, and technology fuels the planet, supports education, delivers better healthcare, improves products, helps the environment, and creates progress for humankind. That's why we invested in our own machine layer this year — upgrading our intelligence platform to ensure we have the best and most accurate metrics and analysis available in the industry so that you can make optimal plans for the coming year.

Our 2016 theme, **Tipping Point**, offers a deep look at the possibilities and consequences of a data-driven world and the companies making it happen.

As always, we're here to serve you through your toughest challenges. Please feel free to reach out whenever we can be of service.

Our very best wishes,

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ABOUT THE AUTHOR

Leigh Watson Healy, Chief Analyst

As Chief Analyst and an early member of the Outsell team, Leigh Watson Healy has co-created and led all aspects of Outsell's activities in producing research, advisory, and consulting services for the information and publishing industry. She relies on her extensive experience in market and opportunity assessment, strategic and business planning, and product planning to serve as an executive-level advisor to a broad range of Outsell clients. As a primary spokesperson for Outsell, Leigh writes and speaks frequently about key trends and issues in the information industry. Today, she leads developing Outsell's long-term strategic relationships with industry leaders and drives delivery of trusted, value-add programs that meet clients' needs. Leigh co-chairs Outsell's Leadership Councils, an exclusive member-service for CEOs and senior executives of media publishing and information-provider firms.

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WHAT'S INSIDE

WHY THIS TOPIC

Outsell's tradition is to publish each year our Outlook on trends and predictions that will shape the year ahead, and provide essential actions for information industry leaders. We also name our annual Companies to Watch – those that exemplify the coming year's key theme.

In 2014, our theme of Convergence*Now!* noted the blending of devices, humans, technologies, content, machines, workflows, and value chains into one interactive ecosystem. And our Sensored World, Sensible Choices theme for 2015 reflected upon life on our data-driven planet, where everything is sensored, tracked, quantified, and analyzed by algorithms and smart machines. As we enter 2016, there is political, social, and economic volatility. Problems on the planet are becoming more daunting and change is accelerating.

> Our industry wrestles with **challenges of success and growth** in this fragile ecosystem in which models are set to topple and irreversible change looms.

Looking ahead, and closer to home, the future of work and the role of people at work are unclear as smart machines get smarter. Our industry wrestles with challenges of success and growth in this fragile ecosystem in which models are set to topple and irreversible change looms. On many fronts, we are at a tipping point.

So, this report describes our 2016 theme, **Tipping Point**, and the market trends, forces, and companies to watch. It contains our views of the momentum toward irreversible changes affecting the information industry, with predictions for what's to come. Leaders and their teams can use this as a backdrop to assess their 2016 plans and to get a sense of the overall dynamics shaping a landscape in never-ending flux. It's an exciting time for our industry and is not for the faint of heart!

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METHODOLOGY

Each year, Outsell invests millions of dollars analyzing all sectors of the industry. We continue to expand our coverage of sectors and players that are driving growth and convergence of content, software, services, and platforms in our increasingly data-driven world, including health IT, education technology, marketing services, marketing automation and CRM. We track and analyze 19 segments and over 8,900 firms (increasing every day) within these segments and provide coverage of major announcements, revenue and business model mix, and growth.

We couple this supply-side analysis with a demand-side perspective, conducting original research among marketers and advertisers, enterprise information buyers, and end-users (as professionals and consumers) to follow the money and track and forecast spending trends.

We then take this fact-based underpinning and combine it with our daily dialogue with decision-makers and our 16+ years tracking and analyzing the industry. Finally, our analytic team convenes to discuss and debate the forecasts, trends, and leading firms to watch. Out of that lively discourse, we distill and create this annual Outlook report.

INDUSTRY GROWTH & PERFORMANCE
Now at $766 Billion

Our industry of information, media, and technology is a blend of fast-growing software, services, and tech companies and moderate-growth traditional content publishers and media. Hot spots are workflow solutions providers and data analytics-intensive businesses, startups, and newcos that reflect the opportunities rising from the rapid convergence of content, technology, software, devices, people, and workflows.

Search & Aggregation continues as the growth frontrunner, but we predict that Marketing Analytics, Automation & CRM will edge from second into first place during the forecast period. Human Capital Management is the third growth hot spot, with all growing strongly well over industry average growth of 3.8% in 2014. Along with Financial, Credit, and Governance, Risk & Compliance, these flourishing areas will continue to drive industry growth in the next several years.

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TIPPING POINT: PRINT, DIGITAL, IN-PERSON

In-person events are growing, while solutions driven by advanced data analytics and embedding content in workflows drives the digital shift.

GROWTH RATES

Marketing Automation, Analytics & CRM will take the lead, followed by Search & Aggregation; Financial; Governance, Risk & Compliance; and the Human Capital Management (HCM) subsegment.
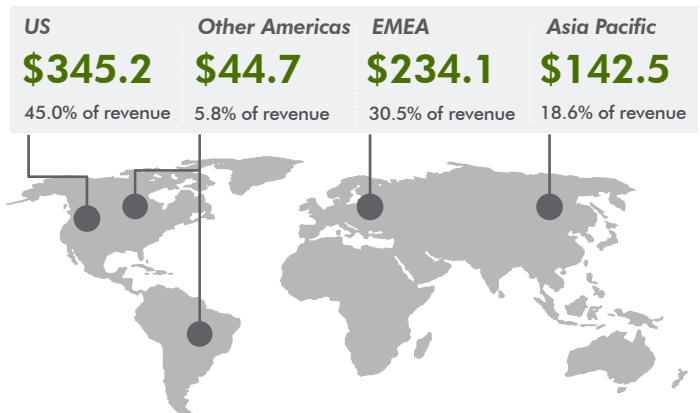
Segment	CAGR 2012-14	CAGR 2015-18
Search & Aggregation	14.2%	6.8%
Marketing Automation, Analytics & CRM	11.2%	11.2%
Education Content, EdTech & HCM	5.3%	4.3%
Risk & Compliance	5.2%	6.7%
Credit	5.0%	3.3%
Market Research, Reports & Services	4.6%	5.8%
Financial	4.2%	6.8%
Scientific, Technical & Medical	3.7%	4.3%
Legal & Regulatory	3.7%	5.7%
B2B Trade & Company Information	3.6%	3.8%
Marketing Services	3.1%	3.4%
Consumer Magazines	2.0%	2.9%
Consumer Books	1.3%	1.0%
News	-5.1%	-3.2%
Yellow Pages	-10.3%	-3.9%
Total Industry	3.7%	4.1%

■ CAGR 2012-14   ■ CAGR 2015-18

INDUSTRY ECOSYSTEM & SEGMENTS (USD Billions)

$766.5 BILLION Total Market

- Yellow Pages & Directories **$19.8B**
- B2B Trade **$31.8B**
- Market Research Reports & Services **$43.4B**
- Marketing Automation, Analytics & CRM **$25.8B**
- News **$74.4B**
- Consumer Magazines **$37.2B**
- Consumer Books **$47.5B**
- Marketing Services **$116.8B**
- Credit **$12.7B**
- Search & Aggregation **$96.8B**
- Financial **$42.7B**
- Risk & Compliance **$45.2B**
- Scientific, Technical & Medical **$33.7B**
- Legal & Regulatory **$21.2B**
- Education Content, EdTech & HCM **$117.2B**

GEOGRAPHIC DISTRIBUTION
2014 Estimated Revenue (USD Billions)

US	Other Americas	EMEA	Asia Pacific
$345.2	**$44.7**	**$234.1**	**$142.5**
45.0% of revenue	5.8% of revenue	30.5% of revenue	18.6% of revenue

MARKET DRIVERS

1. Integrated access to content through workflow applications.

2. Data – especially unique, high-quality data – and advanced data analytics embedded into platforms.

3. Hyper-niche opportunities to scale vertically or horizontally, while the largest companies focus on hyper-scale.

OUR 2016 META-THEME

The dictionary says:

> ## tip·ping point
>
> *noun*
>
> **the point at which a series of small changes or incidents becomes significant enough to cause a larger, more important change**
>
> **the critical point in a situation, process, or system beyond which a significant and often unstoppable effect or change takes place**

In our annual Outlook for the last 16 years, we've called out effects of the accelerating pace of change that drives user behaviors and how people work and learn, as well as companies and business models and how solutions deliver value, and what enables success or failure in today's information industry. Transformative change has been the norm for so long that it almost has a numbing effect. And yet, change of a different and bigger kind is in motion. We believe the industry is at a tipping point, where soon everything is going to be very different, with forces in play that will fundamentally change the nature of knowledge work. And that could lead to an opportunity renaissance for the information industry.

But which segments will be most affected? What will be the impact?

To answer these questions, Outsell identified trends most likely to drive industry change and disruption in the years ahead – 10 tipping points that are likely to have profound implications. Companies that disregard these tipping points could soon find themselves at a competitive disadvantage. The winners are building muscle and capacity to seize these opportunities now.

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TRENDS THAT MATTER

- Millennials and How They Work

- Machines Getting Smarter and Taking Charge

- Enterprise Getting into the Game

- Hyper-Niche

- Hyper-Scale Goes Big

- Hyper-Aggregation Driving Disintermediation

- Web Tipping to Apps

- Convergence of Face-to-Face

- Replatforming

- Why Should I Work for You?

Millennials and How They Work

Millennials now outnumber baby boomers, according to the latest US Census estimates; by 2020, they'll be 50% of the workforce. While they are still revealing their behaviors in the workplace and as knowledge workers, the industry will feel the real impact of their decision-making in the next three to five years when they move into management positions of real influence. We already see how they work with extreme agility and social collaboration at the core. One extreme example: Startup Bus, an annual hackathon that takes place on a cross-country bus with the promise of funding at the destination for the most successful technology pitches created during the caffeine-infused journey. And yet, this generation lacks savvy and confidence on decision-making, avoids the stock market, turns to parents for advice on matters from job offers to finances, and to friends and the internet to find places to live.

While millennials will have control of 70% of the stock market by 2035, today they have the lowest credit scores of all generations. Internships – paid or unpaid – have become the new entry-level jobs. Millennials still live at home because affordable housing, especially in hot job markets – Silicon Valley, London, Austin, Denver – is nearly impossible to find. This generation has also inherited unprecedented problems from those that preceded them, which will throw up obstacles to meeting their life goals and desire to do meaningful work and make the world a better place. It also means that leveraging information in a mobile, social, global world will be what they use to innovate and problem-solve.

WHAT THIS MEANS

When this generation comes into its own and into power positions, sweeping changes will start to affect the information industry based on this group's information use and decision-making behaviors. Successful companies are designing solutions

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to support these young workers' preferences and their time spent on social networks, with mobile devices, and how they discover, use, and share information in very different ways than generations before. Deep understanding of nuances and personas will be essential to garnering millennials' interest and adoption of platforms and solutions.

Machines Getting Smarter and Taking Charge

• A Chinese factory replaced 90% of humans with robots; production soared and defects dropped in the unmanned factory.

• A robot in a Toyota factory killed the worker that was installing it.

• Traffic cameras use in-ground sensors or above-ground radar to predict which vehicles are likely to run a red light and start the camera recording before the violation takes place.

• IBM and CVS will work together to predict whose health may be declining based on algorithms using "red flag" behaviors and psychological indicators. This same information will find its way to health insurance and credit risk companies.

• Driverless cars have hit the roads, but with outmoded software vulnerable to hacker attacks or malfunction, and with reports of bizarre crashes making mainstream media, impacting consumer confidence and threatening adoption.

Advanced data analytics – predictive analytics – is quickly moving to prescriptive analytics. Automated data curation, machine-created algorithms in a machine-to-machine world, will mean trillions of sensors are communicating, putting decision-making on hyper-speed, and a bounty of harvestable big data from the Internet of Things is driving to designer outcomes fueled entirely by smart machines. In education, adaptive learning solutions can rewrite a small bit of text to make it more readily understood by a particular struggling student to ensure that student won't fail the next quiz. In oil and gas exploration, prescriptive analytics direct where to

drill to get the best production. Advances in cognitive computing on top of big data from the Internet of Things is tipping power to the algorithm, with huge potential to predict, redesign, and prescribe to specific outcomes – in healthcare, legal, education, manufacturing, energy, and financial areas, we are and will be seeing it.

At the same time machines are getting smarter and prescribing the "right" choices, we worry humans are dumbing down. Evidence shows that our use of digital devices and short-form reading of bits of text on small screens is rewiring our brains. It's getting harder to focus and to read long-form. This may accelerate the predictions that A.I. will surpass human intelligence by 2029. The tension between privacy and hacking still looms and may never be solved. There is tension in the network and pressure in the enterprise to integrate large sets of information and make it available. But the momentum is there for prescriptive decision-making.

WHAT THIS MEANS

Potential is huge for smart machines and advanced data analytics to design and deliver the "best" outcomes. Personalized learning, analytics-based prescriptions for a healthier lifestyle, the advanced data analytics landscape is changing rapidly, and with it will come changes in how teachers teach, how engineers solve problems, how doctors, insurers and patients interact, and how legal cases resolve. The challenge is solving the privacy issue – a gating factor to adoption of adaptive solutions in education, for example. Companies need policies for what happens and where legal responsibility and liability lie when the machine gets it wrong.

Enterprise Getting into the Game

Outsell has long observed that enterprises are often "accidental publishers" with the need to create and deliver websites, catalogs, thought leadership or content marketing, and content to support supply chain and customers. Accidental has

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tipped to intentional as we see more companies buying data businesses and running data management as a business. Monsanto driving to the designer farm off its big data-intensive Climate Corp. acquisition. BMW, with Daimler and Audi, agreeing to buy Nokia's mapping business to ensure they own a critical asset and at the same time withholding sensor-gathered data from automotive systems that would make Apple and Google's mapping businesses more robust. Law firms starting to provide information services to clients as a fee-based service and develop their own A.I. solutions. Enterprises expanding their direct-to-professional or to-consumer marketing initiatives in their face-to-face, company-owned branded events. And we see enterprises getting into the government game, with some showing agility in solving problems that public agencies couldn't handle. Case in point, the privatization of the New Orleans police force by Sidney Torres' French Quarter Task Force – a controversial move but credited for squelching in just three months the out-of-control crime streak that had again overtaken the French Quarter in the past two years.

Along with enterprises' deliberate entry into the data game comes the emerging role of the Chief Data Officer, who has taken a seat in the C-suite in major corporations that value data as a strategic asset.

WHAT THIS MEANS

As Fortune 500 powerhouses make strategic moves into big data, data analytics, and data management, valuations rise, they own value chains, and control strategic assets once outsourced or licensed – if they were recognized as assets at all. This is not good news for the industry's market share leaders and top players, who find that some of their largest customers are now competitors. It also means there are new buyers for interesting information industry assets, which means higher competition and valuations for companies strategics traditionally relied on for inorganic growth. When big enterprise is in the buying loop, "strategics" for the information industry

take on new meaning. Simply put, RELX, Thomson Reuters, Wolters Kluwer, and the like have major competition for the feeder fish they've required for top-line growth.

Hyper-Niche

Convergence of the cloud and APIs as platform, content, technology, and solutions is opening up opportunities as companies find extreme scaling in the niche. Whether focusing deeply in vertical niches – such as food and drink tech, in law firms with fewer than 20 employees, or on designer farming to the square inch – hyper-verticalization delivers scale to startups and market share leaders alike. It spawns startups, as well as niche players who are finding new ways to dive into supporting workflow and doing it from the get-go. Talk of convergence is gone. These startups and hyper-niche companies use software and content to create applications right out of the chute. Ag tech, health IT, food tech – focused micro-scale is the new market opportunity as the world is sliced into narrower and narrower sub-sub-verticals.

WHAT THIS MEANS

APIs, SaaS, and the cloud are keys to extreme niching, as well as to recognizing that content and tech firms in the same niche may not see each other because they don't share paradigms – a food tech company driving off of big data won't likely see itself as a "content" company. Invoking "translators" to help content and tech speak to each other will accelerate ability to see partnering opportunities.

Hyper-Scale Goes Big

The path to hyper-scale involves two P's: platform and portfolio. Focused big scale is the mantra of market share leaders, and 2015 has been a year of big, big deals and tuning portfolios. Dun & Bradstreet's acquisition of NetProspex created a business, financial, and contact data powerhouse. Holtzbrinck Publishing Group and Springer

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Science+Business Media created a market share giant in science and education. Verisk Analytics achieved instant scale in commercial intelligence for chemicals, energy, and mining with its acquisition of Wood Mackenzie. Pearson sold off The Financial Times and the Economist Group to focus on its education businesses. LinkedIn's addition of Lynda offers reach across talent management. McGraw-Hill Financial scaled up and focused with its buy of SNL Financial. Mass collaboration like University of California-Davis partnering with Mars, Inc. in founding an innovation institute promises to tackle global problems in food, agriculture, and health.

WHAT THIS MEANS

As companies focus portfolios, they are also setting up to drive scale through workflow solutions and, as with platforms that support driving value through workflows, by connecting and integrating applications across work streams. As the big get bigger through portfolio tuning and by executing platform, they stand to own the workflows for entire verticals, personas, or functions. Where the desktop is already owned by software applications (think Salesforce.com), then data will have to be plugged into those solutions, because very few providers will be able to compete with at-scale software vendors. Where the desktop is already owned (Bloomberg, Thomson Reuters), the fintech providers may find an easier route, in some cases. It's about who has scale and owns the desktop.

Hyper-Aggregation Driving a New Wave of Disintermediation

Disintermediation is in play – and while we see tipping points with machines replacing jobs, or self-help legal services replacing lawyers, a new wave of hyper-aggregation is creating value by delivering content assets into workflows in new ways. For example, CSRHub aggregates millions of data points from hundreds of company information sources into a single database with ratings and rankings of over 15,000 companies and their social responsibility index. While the value of each data asset remains, the hyper-aggregation exceeds the sum of its parts.

WHAT THIS MEANS

Once users get hooked on access in the workflow to an uber aggregator of aggregators, it changes the workflow, and there's likely no turning back to single resources. While individual data assets may not be disintermediated, they will find that the power of access to subscribers is shifting to new intermediaries. This dovetails with users increasingly wanting single sign-on and fewer entry points to information providers. Successful players will deliver a portal or a workflow application or embed data into application software like the EHR system, the CAD software, or the CRM.

Web Tipping to Apps

As knowledge work takes place on the go and on ubiquitous mobile devices, the power is shifting from the web to mobile apps, or rather, from publishers and media companies as content creators to end-users. Outsell has long noted that end-users' engagement with consumer technologies sets user experience expectations, and that translates to what users want and expect at work. The GAFA monolith – Google, Apple, Facebook, and Amazon – are all about UI/UX and seamless delivery on mobile, and apps like Snapchat and Instagram that are so popular for sharing fuel the demand for instant answers. There must be an app for that!

WHAT THIS MEANS

This mobile, always-on, instant ask-and-answer demand is driving media companies' and publishers' focus, as they now have to design for "mobile first" to meet the needs of end-users whose personal and work lives tie to mobile. Anywhere, anytime access means the device and the app are becoming the interface, with huge implications for workflows at the desktop, the need for seamless single sign-on, and integration of content into the work stream anywhere a user is with a screen.

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Convergence of F2F: Community, Commerce, Content, and Certification

Events – face-to-face, in-person – continue to deliver high value to marketers, providing increasingly scarce human-to-human touch and engagement. Bringing people with shared interests together drives network effects and focuses marketing dollars where the action is. Community-oriented businesses like Spiceworks (Spiceworld) and Chef (ChefCon) capitalize on their network effects to support growing national and micro events. And millennials drive new event opportunities. For example, Amazon entered the events business by launching TwitchCon in support of its game streaming acquisition of Twitch.

The power of events also drives convergence of professional education and B2B. Events like Dreamforce deliver direct access to consumers and the best ROI on customer contact. Experiential marketing – high-vibe events coupled with engaging websites – have power in reaching the right consumers without spending a penny on the wrong ones. Case in point, when government intervention ended tobacco advertising, Philip Morris' ad spending went down and profits went up when it focused all its marketing dollars on lavishing attention on the Marlboro fan base through high-vibe events, contests for big-dollar prizes, and a dynamic, fun website that reinforces a Wild West experience. This is a new way of marketing and of delivering value, as communities form always-on events and merge online and offline.

WHAT THIS MEANS

With growing success and ROI from events and investment in their own websites to reach customers directly, the tipping point will be when lead generation no longer matters. Customers will go straight from intention to commerce at an event or on a website designed to create excitement, viral, and community. This, along with ad blocking technology and users getting irritated with how private information is being used, in concert with being served useless ads, means trusted communities, events, and commerce will win out over advertising long term.

Replatforming

Hyper-scaling and building a cost-effective business across multiple verticals or deep in one segment requires a common technology platform and approach to delivery. For example, building video production capabilities through a central team can deliver a strong offering for multiple verticals by leveraging shared expertise in content creation, design, and delivery. The same is true for data. Capitalizing on access and use of data on a single platform requires robust infrastructure to support efficient management, dissemination, and exploitation of data, which can support important discoveries, collaboration, and opportunities to create products and services.

WHAT THIS MEANS

To achieve scale via platform means having a clear strategy for what audiences need to be reached, with a clear voice of the customer input as the foundation for any platform and product roadmap.

Why Should I Work for You?

Industry leaders speak to us all the time about the challenges of attracting and retaining the best talent, filling skill gaps, and the growing need to sponsor and mentor staff early in their careers. In circling back to millennials, we see successful leaders obsessed with providing the kind of meaningful work and path to achievement that the next generation of leaders wants. There is a dearth of quality sales talent, analytics and data wonks are hard to find, and good developers remain scarce and expensive. Differentiating to get talent is critical.

Industry leaders tell us they approach the challenge from the perspective of being in service to their young talent. To understand their career goals and expectations and how they might differ from those of other generations. To provide leadership,

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inspiration, and well-articulated and communicated strategy and direction. To keep an open door and maintain transparency. To involve them in discussions and decision-making. Perhaps these needs aren't different from those of older workers, but for sure, millennials are showing that they won't stay put if these needs aren't being met.

WHAT THIS MEANS

Instead of asking prospective employees "Why should I hire you?", smart leaders ask: "Why would you work for me? What is the compelling value proposition to choose and stay with my company? What can I do to help you meet not only your career goals but also your life goals?" Delivering fabulous experiences to customers is critical. Leveraging the information our industry delivers is often part of an important cause (helping doctors, helping patients, helping to save lives). Be sure that policies are trust-laden – make non-policies (no sick and vacation accruals, give people the time they need), encourage corporate philanthropy, and offer flex hours. Partner with universities for exciting projects and intern streams that feed a job pipeline. Create a work experience, and be sure to ask and answer these questions as leaders. Have millennials rewrite the HR handbook and be well on the way to building trust as the first step in working with this soon-to-be majority.
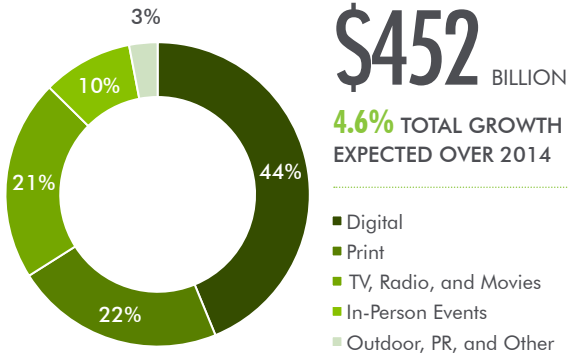
TO UNDERSTAND THESE TRENDS AND OPPORTUNITIES in this industry at a tipping point, successful companies looking for growth in this converging world of people, media, information, and technology will pay close attention to the key funding sources for our industry. The three stakeholder groups controlling or influencing the money flows that fuel industry growth remain: end-users who buy and consume content, enterprise information managers who spend for paid content, and marketers and advertisers who decide the spending allocation for their marketing mix.

MARKETERS & ADVERTISERS

Solutions-oriented offerings become the new focus as media companies shift to provide more value though marketing services, as advertisers go after millennials, and as new forces in online publishing emerge.

TOTAL US ADVERTISING & MARKETING SPENDING

3%
10%
21%
44%
22%

$452 BILLION

4.6% TOTAL GROWTH EXPECTED OVER 2014

- Digital
- Print
- TV, Radio, and Movies
- In-Person Events
- Outdoor, PR, and Other

2013-15 TOTAL SPENDING (USD BILLIONS)

$414.6
2013

$432.3
2014

$452.0
2015

DIGITAL SPENDING

Company's Own Site	36%
E-mail	11%
Search	10%
Own Social	8%
Mobile	5%
Ads on Social	5%
Topical Sites	5%
Webinars	3%
Video Sites	3%
Sponsored	3%
Online Classifieds	3%
General Sites	3%
Native Ads	2%
Other	3%

TRENDS THAT MATTER

Top 5 barriers and problems

Marketers' top problems and barriers are a significant opportunity for martech and ad tech vendors and agencies to help marketers solve these challenges in 2016. Partners who demonstrate their industry expertise and commitment to customer success stand to be deeply integrated into the marketing stack of B2B and consumer-facing brands.

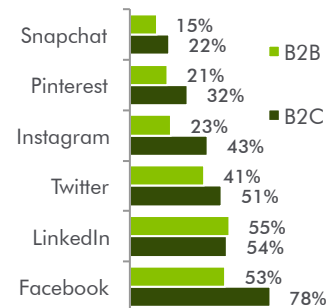|	2014	2015
Applying analytics	72%	81%
Evaluating effectiveness	76%	80%
Staff not experienced	68%	77%
Not solutions-oriented	69%	76%
Difficult to engage	73%	75%

Diverging demographics

We see a divergence in the population and business demographics. In B2C, it's reflected in millennials and baby boomers and in higher- and lower-income households. In B2B, it's size of company and industry segment. Millennials now outnumber baby boomers, and they are passing Gen Xers in 2015 as the largest workforce population. Younger marketers bring new ideas, new preferences for tools, and new campaign approaches. Publishers that can help them reach, inform, and convert stand to become trusted campaign partners.

Social media's importance

Global ad dollars are flowing heavily, with Google challenging Facebook, Twitter aggressively playing, and the messaging nets of Snapchat and Instagram chasing mobile media and

SOCIAL MEDIA EFFECTIVENESS

	B2B	B2C
Snapchat	15%	22%
Pinterest	21%	32%
Instagram	23%	43%
Twitter	41%	51%
LinkedIn	55%	54%
Facebook	53%	78%

news supported by advertising. Social and messaging are the next tipping point for publishers, brand advertisers, and companies linked to creation of content, news, and advertising delivered via these platforms to the small screen. Media and news publishers need to figure out the challenges to business models, content strategies and workflows, and plan for a response.

INFORMATION MANAGEMENT
& LIBRARIES

Information Management covers the spectrum of activities and issues in the ecosystem for enterprise buyers, knowledge workers, and content and technology vendors, such as: best practices in vendor portfolio management, assessment and analytics, usability and design, research and analysis, and establishing value and return on investment, along with the provisioning of workflow tools and technologies that support those activities.

TRENDS THAT MATTER

The search for seamless access

With the dominance of digital information in the enterprise and increased blurring between work and private lives, knowledge workers want unencumbered access to business information at any time, from any place, from any device. Removing friction to access – for example, eliminating numerous log-ins, being able to search multiple databases, and employing efficient discovery systems while maintaining network security, is critical for knowledge ecosystems and higher end-user satisfaction.
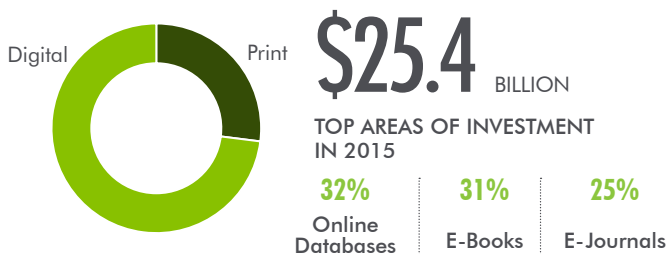
Adapting to new realities

Incremental growth of budgets is offset or often eclipsed by continuous content price increases, forcing libraries to do more with less to stay even. Traditional forms of content via enterprise licenses are still dominant, but emerging formats such as data sets are in play. Core library competencies are essential, but information professionals must redefine traditional services for future digital realities; understand and apply data, analytics, and emerging technologies; be proficient marketers and brand advocates; facilitate learning and adapt quickly in cross-disciplines; and problem solve, collaborate, and deliver strategic outcomes and value.

Re-envisioning use of space

Fashioning user-centric environments from former physical spaces is fundamental to demonstrating value of the library and to driving user satisfaction. In Outsell's 2014 survey of 400 four-year college students, 60% of respondents said their main reason for going to the library was for a quiet place to study, reinforcing the importance of the physical space. Modern libraries fulfill myriad roles — as collaborative workspaces, as gateways for experimenting with technologies, and as interfaces to knowledge access.
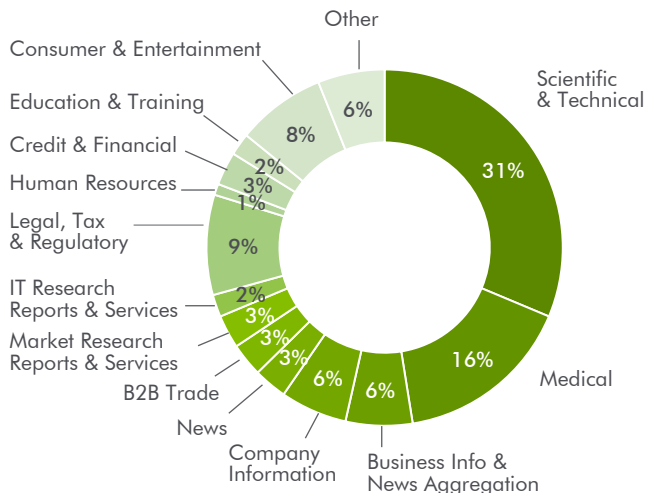
THE GLOBAL LIBRARY MARKET

Digital   Print

$25.4 BILLION

TOP AREAS OF INVESTMENT IN 2015

32% Online Databases

31% E-Books

25% E-Journals

2014 content budgets on average split **73% / 27%** between digital and print.

KEY ISSUES FOR TODAY'S LIBRARIES

print to digital visualization
staffing and talent disintermediation
succession planning reproducibility mobility
technology tipping points demonstrating value
new products audience-based collection development
stakeholder management discovery research data management
digital archiving multi-disciplinary research collaboration
understanding user needs patron preferences
measuring ROI ebooks tight budgets
real estate open access

CONTENT SPENDING BY SECTOR

- Other 6%
- Consumer & Entertainment 8%
- Education & Training 2%
- Credit & Financial 3%
- Human Resources 1%
- Legal, Tax & Regulatory 9%
- IT Research Reports & Services 2%
- Market Research Reports & Services 3%
- B2B Trade 3%
- News 3%
- Company Information 6%
- Business Info & News Aggregation 6%
- Scientific & Technical 31%
- Medical 16%

MILLENNIALS AS KNOWLEDGE WORKERS

Millennials are poised to be the majority in the workforce, and they have distinctive (but not radically so) behavior patterns: They are mobile dependent. They want seamless access, are comfortable sharing, but they are also protective of their own privacy.

TRENDS THAT MATTER

Trusted sources

On trusted sources for research, millennials overwhelmingly choose general web searches, then searching a company's website, their own institutions' intranet, conferring with colleagues, and printed material. Traditional licensed content sources such as aggregator databases, market research, or company information sources trail, indicating that preferences lean toward easy, seamless access. In fact, 77% said single sign-on was important. This is a wake-up call to content vendors: Design for user behavior that favors flow, or be left behind.

Privacy concerns

Though eager to embrace social media platforms (LinkedIn use has almost doubled since Outsell's 2013 survey) millennials are extremely wary of how social networks use their personal information (see table). Outsell's 2015 survey results indicate that millennials had a lower comfort level than all knowledge workers reported last year. This may be generational, or a reaction to security breaches – but contrary to popular thinking, privacy is the default.

Unclear about copyright

Of millennials, 49% either strongly or somewhat agree that it's OK to share content purchased by their company with others inside or outside of their organization, a higher percentage than knowledge workers as a whole. Over half (53%) of millennials in the legal profession agreed to the same. Millennials' propensity to share blurs boundaries of what's permissible to share, indicating a need for education around distributing licensed content.

Obstacles to information

Previous Outsell surveys of knowledge workers in general designated "lack of time" (43%) and "hard to determine credibility" (29%) as the major obstacles to accessing information. Millennials in our latest survey indicated "hard to find specific information needed" (36%) and "not enough budget to pay for it" (29%) as the two major obstacles, with "lack of time" (25%) and "credibility" (25%) as next. That millennials have trouble finding information may reflect overload, lack of seamless UX, lack of awareness, or shrinking content budgets. Publishers and information managers have to collaborate to reduce friction with better discovery mechanisms, seamless access, and flexible business models.

HOURS SPENT ON DEVICES FOR PERSONAL OR PROFESSIONAL USE

The percentage equals the number of millennials who say they use that device.

■ Professional Use ■ Personal Use
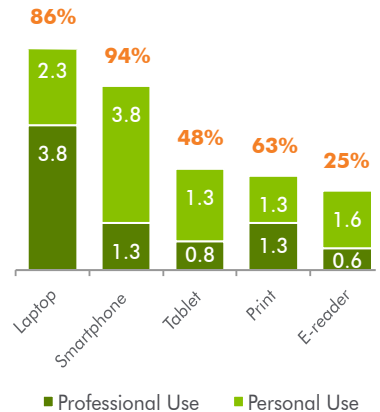
TIME SPENT USING EXTERNAL INFORMATION IN WORK

9.8 Hours per week in 2015

In 2013, it was 11.3

Hours spent = those who use each respective device

We asked, *"Thinking about the social networking apps/sites you use, how comfortable are you with them doing the following with your personal information?"*

	Extremely Comfortable	Comfortable	Neutral	Uncomfortable	Extremely Uncomfortable
Collecting/storing personal information	6%	21%	29%	29%	15%
Using information to target ads to you	6%	17%	30%	31%	17%
Selling your information to data brokers	5%	7%	13%	23%	52%
Providing your information and usage habits to the government	5%	9%	17%	25%	44%

TIPPING POINT
Analysts' Views on 2016 & Beyond

Our analysts weighed in on the critical trends going forward and what our meta-theme means to the information industry and its sectors and players. We take a look at each in the next pages.

B2B TRADE & BUSINESS & COMPANY INFORMATION

This segment includes digital media, data-driven workflow and SaaS applications, in-person exhibitions and conferences, advertising and marketing services, content marketing and native advertising, lead generation, print media, and new business development services.

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MARKET ECOSYSTEM & SEGMENTS

2014 Estimated Global Revenue (USD Billions)

Company Information
$5.0B
4.0% YOY Growth

$31.8 BILLION
Total Market

B2B Trade & Business Information
$26.9B
4.0% YOY Growth

COMPANIES TO WATCH

Established Leaders

Reed Elsevier: $2,342M 6.3% YOY Growth

International Data Group (IDG): $1,486M, 6% YOY Growth
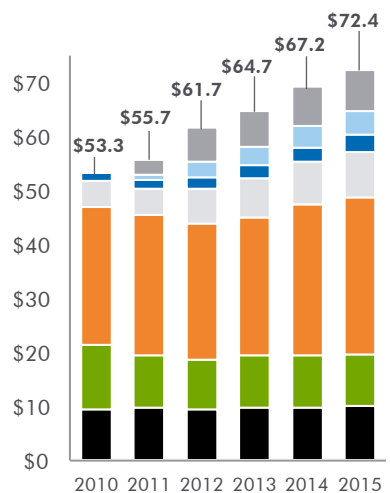
The D&B Corporation: $622M, 2.1% YOY Growth

Disruptors

Spiceworks: $47M, 34% YOY Growth

Bisnow: $15M, 18% YOY Growth

DiscoverOrg: $35M, 30% YOY Growth

TRENDS THAT MATTER

Face to face matters

In-person events continue to earn advertisers' ratings as the No. 1 or No. 2 most effective marketing method. Global events players are focusing on increasing margins, optimizing content marketing, and experimenting with business models such as value-based pricing.

Bring on the leads

Driven full circle by the advent of marketing technology, lead quantity vs. lead quality is no longer a binary conundrum. Marketers are ratcheting up efforts to increase lead volume as sophisticated lead scoring, prioritization, and routing capabilities are becoming more widely available.

Battle for social mindshare

With LinkedIn still the dominant outlet for baby boomer marketers, Facebook has all but matched LinkedIn as most effective for lead generation by Gen X marketers, with Twitter closing rapidly. For millennials, LinkedIn for professional use has grown 66% over the last two years.

MARKET HOT SPOTS

1. From web-derived purchasing intent to local weather conditions, disparate data sets feed algorithms that drive engagement, conversion, and retention.

2. The proliferation of always-on market monitoring platforms has made the mere perception of static content enough to devalue company and contact databases.

3. The focus on increasing engagement and share of day drives workflow growth, often via M&A and real-time data-driven information businesses.

BY THE NUMBERS

2015 B2B digital spend will exceed all other media types, capturing **50%** of the overall $154B B2B media market, which includes print, digital, events, TV/radio, PR, and outdoor. Spending on companies' own websites remains the largest category, with **$29.1B** in expected 2015 spending, but it's on the decline as a percentage of budgets. Spending on company's own social marketing will reach **$4.5B**, eclipsing the **$3.4B** spent on social.

B2B DIRECT-TO-CONSUMER SPENDING (USD Billions)

Bar chart showing values: 2010: $53.3, 2011: $55.7, 2012: $61.7, 2013: $64.7, 2014: $67.2, 2015: $72.4

Legend:
- Custom Print
- Direct Marketing
- Company's Own Sites
- E-mail Marketing
- Webinars
- Own Social Engagement
- Co's Own Events

MEDIA & MARKETING

Media & Marketing covers the spectrum of all media types, supported by a range of marketing services and research with an increasing emphasis on marketing automation and analytics, and ad tech and martech as underlying drivers.

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TRENDS THAT MATTER

Facebook a major ad force

Facebook surpasses YouTube in shared video links as it becomes a major advertising force among B2C and B2B marketers, with enhanced ad tools including its ad exchange and its ability to finely segment audiences.

Balancing original/native content

Content now comes in many forms as ads start masquerading as content thanks to native advertising, further blurring the line between a sales pitch and entertainment. Consumers will increasingly use ad blocking software because of privacy and performance concerns, so a fine balance between original and native/sponsored content and the right number of exposures needs to be established.

Convergence happens

Convergence is occurring between market research and business information and marketing analytics companies, such as Gartner's acquisition of GetApp to offer software reviews to customers, App Annie is partnering with research firms to mash up mobile app analytics with market share and survey data, and Owler and Spoke Software are doing data-driven competitive intelligence on vendors.

2016 is the year of the beacon

The beaconization of brick and mortar retail happens as 2016 becomes the year of the beacon with wide-scale deployments expected, offering big consumer brands and retailers more analytics capabilities, and buyers a new shopping experience.

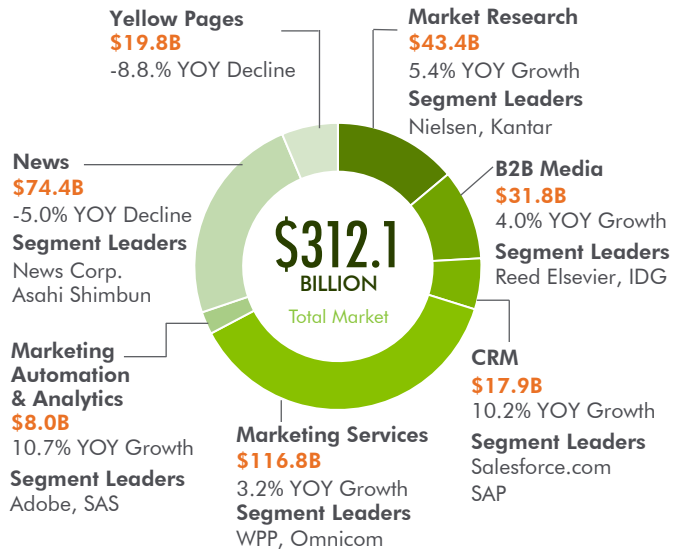## COMPANIES TO WATCH

Established Leaders

WPP: $15.2B, 10.2% YOY Growth
News Corp: $6.3B, - 8.6% YOY Decline
Nielsen: $6.3B, 10.3% YOY Growth

Disruptors

Salesforce.com: $5.0B, 22.8% YOY Growth
Adobe: $1.4B, 10.3% YOY Growth
SAP: $2.9B, 10.8% YOY Growth

MARKET ECOSYSTEM & SEGMENTS

2014 Estimated Global Revenue (USD Billions)

Yellow Pages
$19.8B
-8.8.% YOY Decline

Market Research
$43.4B
5.4% YOY Growth
Segment Leaders
Nielsen, Kantar

News
$74.4B
-5.0% YOY Decline
Segment Leaders
News Corp.
Asahi Shimbun

$312.1 BILLION
Total Market

B2B Media
$31.8B
4.0% YOY Growth
Segment Leaders
Reed Elsevier, IDG

Marketing Automation & Analytics
$8.0B
10.7% YOY Growth
Segment Leaders
Adobe, SAS

CRM
$17.9B
10.2% YOY Growth
Segment Leaders
Salesforce.com
SAP

Marketing Services
$116.8B
3.2% YOY Growth
Segment Leaders
WPP, Omnicom

GEOGRAPHIC DISTRIBUTION

2014 Estimated Revenue (USD Billions)

US	Other Americas	EMEA	Asia Pacific
$128.4	**$17.3**	**$101.4**	**$65.0**
41.1% of revenue	5.5% of revenue	32.5% of revenue	20.8% of revenue

MARKET HOT SPOTS

1. Big social and messaging changes the online publishing landscape in 2016 and offers a strong advertising pull to major publishers that seek to expand audience reach, especially among millennials, but must create unique content and deliver relevant advertising to complement it.

2. Analytics remain at the center of the debate on who owns, sells, and buys the data, while marketers struggle to visualize the different data pipes they have, developing insights, actionable recommendations, and strategies for what to do next.

3. Ad tech M&A activity has come down from last year's frenetic pace as bigger companies still seek to plug holes in their current capabilities though fewer large independents remain per segment, making it more selective on who buys whom now that the pressure to "just get in" a segment has subsided to some extent.

EDUCATION CONTENT, EDTECH & HUMAN CAPITAL MANAGEMENT

Outsell's coverage of this space includes educational content resources as well as solutions used for administrative purposes, edtech offerings, and services that support human capital management and recruitment activities.

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TRENDS & HOT SPOTS

Education Content

1. Big data, adaptive solutions, and predictive analytics are driving product development and opportunities for portfolio expansion.

2. Open Educational Resources (OERs) are becoming more widely adopted, particularly in general education courses, with OER providers starting to develop competitive tools and services.

3. Efficacy remains crucial. Delivering on promises and demonstrating improved learning outcomes is central to all new product development.

EdTech

1. Big data offers huge opportunities across the market, although privacy issues have proved challenging and are a core concern.

2. Teachers and faculty are increasingly recognized as key gatekeepers: Working with the teaching community to understand their needs and providing training around technology will be a core driver of growth.

3. Digital solutions are becoming a given. Now the focus is turning to ensuring usability across a range of devices, with mobile platforms the most important.

Human Capital Management

1. HR teams continue to demand holistic solutions which enable them to take a company-wide view of talent assets.

2. Big data is important here too: Enterprises want to use talent analytics as an element of their HCM program to help them understand, measure, and manage talent mobility through actionable analytics, connecting HR metrics to strategic goals.

3. An increasing proportion of the workforce are millennials who collaborate and share information. Talent solutions are increasingly embracing this need.
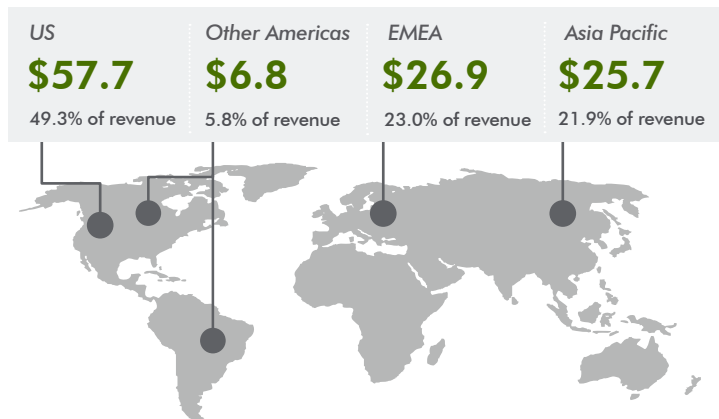
MARKET ECOSYSTEM & SEGMENTS

2014 Estimated Global Revenue (USD Billions)

Human Capital Management
$45.6B
8.8% YOY Growth
Segment Leaders
LinkedIn Corp.
Pearson Education
Monster Worldwide
CareerBuilder
TowersWatson

$117.2 BILLION
Total Market

Education Content
$56.0B
3.0% YOY Growth
Segment Leaders
Pearson Education
Benesse Corp.
McGraw-Hill Education
Cengage Learning
Grupo Planeta

EdTech
$15.6B, 3.4% YOY Growth
Segment Leaders Microsoft, IBM, Pearson Education, K12 Inc., Blackboard

GEOGRAPHIC DISTRIBUTION

2014 Estimated Revenue (USD Billions)

US	*Other Americas*	*EMEA*	*Asia Pacific*
$57.7	**$6.8**	**$26.9**	**$25.7**
49.3% of revenue	5.8% of revenue	23.0% of revenue	21.9% of revenue

COMPANIES TO WATCH

Established Leaders

Pearson Education: (all segments); $7.4B Revenue; -4.2% YOY Decline

Microsoft (EdTech only): $1.4B Revenue; 2.9% YOY Growth

LinkedIn (HCM only): $2.1B Revenue; 39.3% YOY Growth

Disruptors

busuu: May target B2B markets, increasing competition.

Lumen Learning: Making OERs a viable opportunity for HE.

Gild: Startup using data science and predictive analytics to bring intelligence to all phases of hiring.

FINANCIAL, CREDIT & GOVERNANCE, RISK & COMPLIANCE

This area of coverage includes financial information, credit information, and governance, risk, and compliance solutions (inclusive of tax and accounting information).

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TRENDS THAT MATTER

Tech and Finance

Technology companies are taking financial services head on: IBM Watson, Perseus, Enigma, Datameer, and many others are seeing data latency, analytical challenges, and regulations as opportunities to take market share away from traditional financial solution providers.

E-commerce and Web make a mark

E-commerce and Internet companies are encroaching in the credit and financial arena: These companies' transaction and behavioral analytics abilities can predict the financial outcomes of consumers and companies, competing against traditional credit and financial information providers.

Social fuels unstructured data

Social media analysis is in greater demand than ever in the credit, financial and risk and compliance worlds: The world of unstructured data now exists in greater volume than structured data, thanks largely to social growth. Tapping into web and social analytics drives a new level of decision-making.

MARKET HOT SPOTS

1. Blockchain technology, proven by the success of cryptocurrency (e.g., Bitcoin), is now center of attention for many fintech investors. It's set to transform the way that issuance, trading, and settlement takes place in capital markets.

2. With outages occurring among major exchanges and trading platforms in recent years (e.g., NASDAQ, NYSE, and Bloomberg), there is a renewed public focus on business continuity and compliance solutions in financial services.

3. Consumers want to be empowered in their finances, and they no longer want to pay a lot for guidance: The birth of robo-financial advisory and the adoption of mobility in investment/retirement services (to cater to the millennials) is living proof.

MARKET ECOSYSTEM & SEGMENTS

2014 Estimated Global Revenue (USD Billions)

GRC
$45.2B
4.9% YOY Growth
Segment Leaders
Altegrity, Inc,
LexisNexis Risk
    Solutions
Verisk Analytics

$100.6 BILLION
Total Market

Financial
$42.7B
4.7% YOY Growth
Segment Leaders
Bloomberg LP
Thomson Reuters
    Financial & Risk
McGraw Hill Financial

By 2018, the Financial segment is slated to grow to $55.2B, the Credit segment to $14.4B, and the GRC segment to $58.1B.
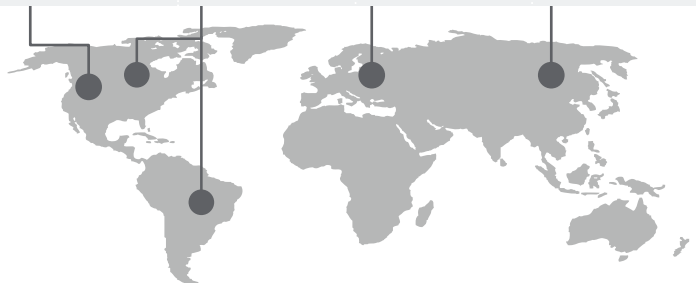
Credit
$12.7B
5.4% YOY Growth
Segment Leaders
Experian plc, Equifax, TransUnion LLC

GEOGRAPHIC DISTRIBUTION

2014 Estimated Revenue (USD Billions)

US	Other Americas	EMEA	Asia Pacific
$56.7	**$5.5**	**$29.9**	**$8.5**
56.4% of revenue	5.5% of revenue	29.7% of revenue	8.4% of revenue

COMPANIES TO WATCH

Established Leaders

Bloomberg LP: $8.2B Revenue, 5.9% YOY Growth

Experian plc: $3.9B Revenue, 1.3% YOY Growth

Altegrity, Inc.: $2.8B Revenue, 6.0% Growth

Disruptors

Alibaba Group: $8.4B Revenue, 52.0% YOY Growth

Betterment LLC: $3.7M Revenue, 105.5% YOY Growth

Estimize: $4.1M Revenue, 87.2% Growth

LEGAL & REGULATORY

The legal and regulatory solutions market is made up of B2B and B2C legal information, technology, and, increasingly, information-as-a-legal-service providers. They offer legal information and software used by the legal services industry, corporations, government bodies, and consumers prepared to conduct their own legal affairs. Outsell segments the legal and regulatory solutions market into four main categories: primary sources, secondary sources, legal software and online services, and patents. Within these four categories are over 40 sub-segments.

TRENDS THAT MATTER

Adjacent markets overlapping

Professions are overlapping as corporations expect employees to be self-sufficient in order to be efficient. Non-legal professionals need tools that enable them to multitask and conduct simple legal research before seeking the advice of lawyers.

Growing need for IP solutions

The information economy is putting intellectual property at the core of corporations' values, while there is also an uptick in investment in R&D intensive corporations. This is driving further demand for intellectual property solutions, catering to an increasing range of professionals.

Artificial intelligence adoption

The development of legal artificial intelligence applications is gaining momentum with established providers such as Legal OnRamp developing new solutions, as new startups such as LegalSifter, LawGeex, ROSS, and Kira enter the market.

COMPANIES TO WATCH

Casetext: Combines legal research content, crowdsourcing, and community.

Microsoft: Making increasing noise in the legal solutions market.

MyCase: MyCase's parent company, AppFolio, recently listed on the NASDAQ stock exchange.

ROSS Intelligence: This early stage Canadian startup provides artificial legal intelligence built on IBM Watson.

Veyo: Poised to dominate a new UK e-conveyancing solution market.

BY THE NUMBERS
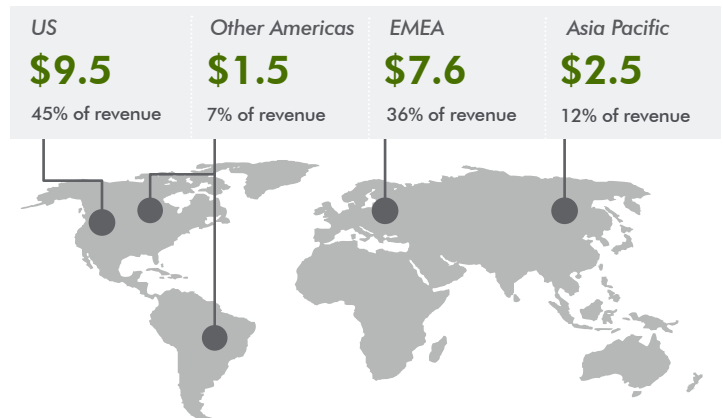
$21.2 BILLION

Total Market in 2014

3.8% Growth

36% Combined market share of the largest three international legal information solution providers: Thomson Reuters, Wolters Kluwer, and LexisNexis.

$9.9B Combined revenue of the 10 largest legal and regulatory global solution providers in 2014.

3% Legal & Regulatory share of the total $766.5 billion information industry in 2014.

GEOGRAPHIC DISTRIBUTION

2014 Estimated Revenue (USD Billions)

US	Other Americas	EMEA	Asia Pacific
$9.5	**$1.5**	**$7.6**	**$2.5**
45% of revenue	7% of revenue	36% of revenue	12% of revenue

MARKET HOT SPOTS

1. Regulations prohibiting the unauthorized practice of law continue to act as a barrier for legal innovators looking to introduce innovative solutions. However, following a US Supreme Court ruling regarding similar restrictions in dentistry, there are signs that more anticompetitive restraints protecting the legal profession from market disruption could begin to ease.

2. Accountancy firms are expanding into the legal services market, with "Big Four" firms (PwC, EY, Deloitte, and KPMG) all recently making moves to increase legal service offerings. With multibillion-dollar revenues, strong brands, access to market, and experience in developing technology solutions, accountancy firms pose a significant threat to corporate law firms.

3. As continued legal education training continues to decline in the UK and US, other countries such as India, France, Sweden, and Singapore are introducing mandatory CLE accreditation systems for the first time. This creates opportunities for providers that are able to serve these countries.

SCIENTIFIC, TECHNICAL & MEDICAL

STM comprises content, software, solutions, and both primary and secondary data, as well as software and analytics services applied to such data, from for-profit and not-for-profit companies.

SCIENTIFIC, TECHNICAL & MEDICAL INFORMATION

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TRENDS THAT MATTER

Importance of analytics

Descriptive, predictive, and prescriptive analytics are becoming powerful tools in healthcare, engineering, and research.

Focus on workflows

The focus is on workflow for researchers, professionals, institutions, clinicians, and funders. Embedded content, data, tools, and metrics are key.

Startups continue to emerge

Publishers now focus on developing new tools, business models, and services for authors, but startups continue to emerge with robust services and tools.

MARKET HOT SPOTS

1. Concerns around personal privacy with mobile health apps and electronic medical records are magnified by reports of massive data breaches. Awareness is high, but there are no easy answers.

2. Interoperability of electronic medical records and critical health information remain a major focus for tech and content companies in the healthcare space.

3. Standards are still a major focus of the digital information marketplace. Ongoing infrastructure developments reinforce the importance of persistent identifiers.

COMPANIES TO WATCH

Established Leaders

Elsevier: $3.4B Revenue, 1.5% YOY Growth
Petroleum Geo-Services: $1.5B Revenue, - 3.2% YOY Decline
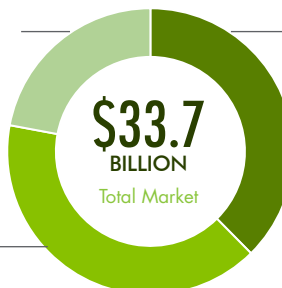**Wolters Kluwer:** $1.1B Revenue, 5.4% YOY Growth

Disruptors

F1000: <$5M Revenue, >50% YOY Growth
Voxel8: <$5M Revenue, N/A YOY Growth
QPID Health: $9.5M, 9% YOY Growth

MARKET ECOSYSTEM & SEGMENTS

2014 Estimated Global Revenue (USD Billions)

Geophysical
$7.4B
1.6% YOY Growth
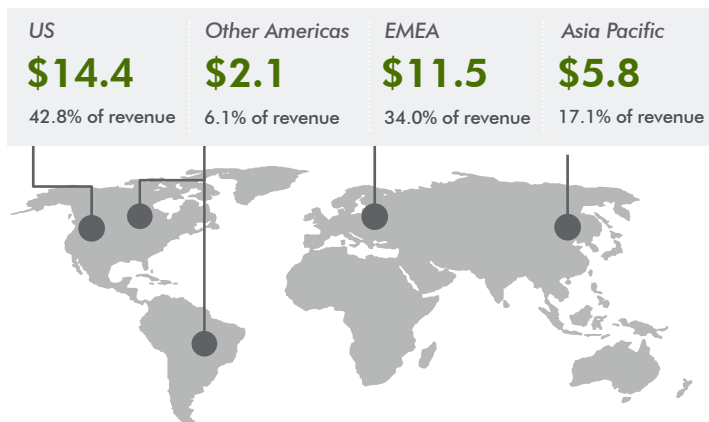**Segment Leaders**
Petroleum
  Geo-Services
TGS-NOPEC

Scientific & Technical
$12.7B
3.9% YOY Growth
Segment Leaders
Elsevier
John Wiley & Sons

$33.7 BILLION
Total Market

Medical
$13.6B
4.5% YOY Growth
Segment Leaders Wolters Kluwer Health
athenahealth, WebMD Health Corp.

GEOGRAPHIC DISTRIBUTION

2014 Estimated Revenue (USD Billions)

US	Other Americas	EMEA	Asia Pacific
$14.4	**$2.1**	**$11.5**	**$5.8**
42.8% of revenue	6.1% of revenue	34.0% of revenue	17.1% of revenue

OPEN ACCESS: BY THE NUMBERS

Open access is approximately **1.1%** of the total STM market and **4.3%** of the STM journals market, but it packs quite a punch. We estimate 2014 open access journal revenues at approximately **$290.4 million**, a **15.1%** growth rate over 2013, compared to a **46.8%** growth rate from 2012-13.

31
COMPANIES TO WATCH

It is Outsell's tradition to identify 30 companies to watch across segments we cover. These companies (actually 31 this year!) are innovators, breaking ground in their space and reflecting this year's Tipping Point meta-theme.

AGDATA

Providing data and analytical solutions to the world's largest agricultural, crop protection, and animal health manufacturers, AGDATA is setting the standard for workflow and analytics platforms.

Alibaba Group

Spreading its wings outside of e-commerce, Alibaba invested $194 million in China Business News (CBN), giving it a significant stake as a financial news provider. It's also using Alipay transaction analytics to create the Big Data 100 Index to help forecast the stock and equity markets. Other e-commerce players may venture out of their comfort zone soon.

Betterment LLC

Robo financial advisory has taken off. No longer do people need to depend on real-life financial advisors to help them plan their finances and retirement. Working around the clock via data analytics, robo advisory from Betterment is able to maximize portfolio returns and tailor investment risk based on different individuals. Fancy golf outings via high-end, real-life financial advisors just might become a thing of the past.

Casetext

Casetext provides a free legal research platform that uses crowdsourcing to identify important cases and offer legal analysis. It recently launched LegalPad, a writing and editing tool designed for lawyers to publish content. It recognizes that pure law content needs commentary for it to be of any real value, while lawyers need content to create and share posts on blogs and social networks.

Civitas Learning, Inc.

This is a strong startup business targeting back-end functionality needs of

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educational institutions, using edtech to improve efficiency through the use of big data. The recent acquisition of BlikBooks signals the company's growing international intentions.

Confident Governance/EnCrisp

Social GRC, reputational risk, and crowdsourcing of risk is in. GRC data is no longer to be siphoned from enterprise applications, but from social media. And the social media space is not getting any smaller.

DiscoverOrg, LLC

DiscoverOrg operates with a hybrid model of automated and curated data collection, expanding highly accurate coverage from its roots in technology to include HR, legal, sales, and operations. In an all-about-the-data, machine-driven world, automated collection of company and contact information scales but still benefits from old-fashioned human verification.

Enigma.io

The world of public and government data has changed with Enigma, the 2013 TechCrunch Disrupt champion. It is now garnering large amounts of data to analyze and guide corporations. There is no specific category of data, but rather the world of data from all categories, using analytics to make predictions from data causal relationships and correlations.

F1000

At first considered just another player in open access, this disruptive player expects to change the business of dissemination of scholarly information through eliminating the "container" (journals, books) – and the need for traditional publishers. Founded by a pioneer in scientific publishing always looking to change the game, Vitek Tracz, the company has made great strides in findings its niche

and working to expand it, cleverly partnering with a traditional publisher, Wiley, to build its user base.

Gild

A startup employing data science, consumer-friendly technologies, and predictive analytics to bring intelligence to all phases of the hiring process. Recruitment is due for a shakeup, and Gild is among a number of startups looking to bring algorithms to bear on the problem.

GlassLab, Inc.

A non-profit alliance with partners including Pearson, ETS, and Electronic Arts looking at the potential for games to provide effective learning and formative assessment environments. If anyone can deliver engaging educational games, GlassLab can.

IBM

IBM may look unfashionable among technology companies as it goes through its latest reinvention, but it remains a force to be reckoned with in enterprise software. The Watson cognitive computing system is one of the flagship initiatives of the new IBM: a system that appears to mimic human reasoning in "understanding" and acting on vast amounts of unstructured text. There's already a standalone Watson Health division, and the company is rolling out solutions across vertical markets. It's investing in an ecosystem for third-party developers to hasten the advent of what it believes will be a new era of computing, a new relationship between man and machine, and a major challenge for information businesses.

Kudos

The troika leading Kudos are marketing and publishing experts, leading to successful deployment of this startup. Signing publishers and researchers at a

OUTSELL

rapid pace, the company continues to be the bellwether for the industry in terms of advancing researcher reputation, a relatively new trend in scientific publishing. With publishers considering themselves to be the center of the scientific information universe as the collectors, curators, and disseminators, the realization has finally dawned that there would be no information to collect, curate, and disseminate if it weren't for the hard-working researcher.

Lumen Learning

Lumen Learning is the leading commercial business in the OER space, helping US higher education institutions adopt OERs and customize them to achieve maximum benefit. It can't be long before other players also emerge to target this space.

MeritDirect LLC

Built from a legacy, one-dimensional list management business, Merit has morphed into data-driven, multichannel marketing solutions combined with data management, consulting, and analytics embedded deep in the B2B marketing ecosystem.

Microsoft Corporation

Microsoft has the potential to disrupt the legal solutions market as it begins to target the space with solutions such as Matter Center for Office 365. It also recently acquired e-discovery and information governance software provider Equivio.

MyCase/AppFolio

MyCase's parent company, AppFolio, recently listed on the NASDAQ stock exchange and raised $74 million. This provides the cloud-based legal practice management software with the funds to pursue a big-growth strategy in its core small law firm market.

Owler, Inc.

A master of crowdsourcing, Owler leverages community to identify and create competitive company relationships. It is pushing hard to be the authoritative source on difficult-to-capture company revenue, a key element of targeted lead generation and qualification.

QPID Health, Inc.

This clinical decision support company provides actionable information at the point of care, the way physicians think when assessing a patient, rather than the way an electronic medical record is organized, which requires going through tabs to gather patient and clinical information. Using machine learning to enable clinical reasoning, the platform looks at a patient over time, understanding signs, symptoms, conditions, and the relationships between personal and family medical history, guidelines, and metrics. It integrates clinical data tools to process both structured and unstructured data to create a personalized treatment plan for critical patients.

RetailNext, Inc.

As the other leader in retail analytics, and with a $125 million injection recently, RetailNext sets its sights on beacon solutions that are easily deployable and scalable. It seeks to expand its efforts internationally in 2016 as well. Look for it to embrace omnichannel strongly as consumers increasingly use TV, the web, mobile devices, and in-store promotions as part of their journey to buy goods and services that reflect their interests and desires.

ROSS Intelligence

ROSS Intelligence is an early stage Canadian startup that provides artificial legal intelligence built on Watson, IBM's cognitive computer system. NextLaw Labs, a subsidiary of global law firm Dentons, is providing ROSS Intelligence with venture funding and could lead to increased deployment of artificial legal intelligence in the legal services market.

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Sailthru, Inc.

This company combines marketing automation, content marketing, marketing analytics, a little bit of CRM, and a whole lot of personalization across multiple channels to help B2C and B2B brands reach and convert customers. As the personalization of content, advertising, and the customer experience increases, we see innovators like Sailthru grabbing the attention of major brand marketers, as marketing clouds struggle to break up their all-you-can-eat approaches.

ScienceOpen

This company distinguishes itself by focusing not only on making research open through a strong open-access business model, but also on aggregating content for easy discovery and utilization, built on a robust technology infrastructure. The focus is not on open access for the sake of making research open, it is about creating a technologically robust tool that researchers can use to publish, disseminate, and discover scientific information in all fields. This startup wants to serve science as well as the researcher, and it wants to do that by having a sustainable business model supporting a strong technology platform.

Selerity Corporation

Social sentiment analysis is already in the works, but what Selerity has set out to do is revolutionize the way that large content from the web is being evaluated (real-time event analysis) – whether positive news or negative news – to help yield directional relevance to quantitative data. Essentially, this is working toward an artificial intelligence model for financial information – set to change the way that high-frequency trading will conduct business.

ShopperTrak

A major retail analytics incumbent, ShopperTrak seeks to build off its strengths in video and motion sensors, moving into beacons and advanced tracking. Expect it to advance its analytics and data visualization capabilities as it pulls in new data feeds from beacons and other sensor technologies under experimentation. It recently launched an innovation center in San Francisco's high-end shopping district not only to assist startups in developing data capabilities, but also to allow some of its clients to test many of those ideas too, as retail hits an inflection point next year.

Snapchat

Establishing the media rev share baseline and first out of the gate to publish big media players' content, it remains highly attractive due to its huge and growing audience of millennials and Gen Z kids. Expect the lure of big advertisers to continue in 2016 because of the size of the audience, its focus on consuming short bursts of content, and the buying power it represents.

Spiceworks

Spiceworks stands for breakthrough use of free data-in-workflow solutions to build an engaged, trusting audience that is open to controlled and opt-in marketing and advertising. It's a case study in achieving organic growth by building high trust and engagement resulting in a rudimentary version of a pull-marketing environment.

Veyo

Veyo is an e-conveyancing platform launched in May 2015 in the UK, developed by the Law Society of England & Wales. It's open to law firms in England and Wales and is priced using a transactional model in addition to an annual administration charge per user. Given that there were nearly 1.3 million property transactions in the UK in 2014, and given its strong access to market through the Law Society, Veyo is poised to dominate a new e-conveyancing solution market in the UK.

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Voxel8

Voxel8, founded in August 2014, brings novel materials to 3-D printing by embedding functionality into printer outputs, creating the world's first electronics printer. The materials this company creates allow for placing embedded conductors, wires, and batteries into 3-D printing materials. Started by Harvard University 3-D printing expert Jennifer Lewis, the company developed a 3-D printer that can make a hearing aid by simultaneously laying down plastic and its proprietary silver ink. The ink provides conductivity – something thermoplastic polymers or carbon-based ink can't do – meaning devices with electronic components, including sensors to transmit important information to engineers or healthcare providers, can now be printed on 3-D printers using Voxel8 technology. The company also plans to contribute some of its technology components as open source libraries.

Wiley

John Wiley & Sons, Inc. combined its talent solutions businesses (CrossKnowledge, Inscape, The Leadership Challenge, and Profiles International) with its Education Services business (formerly Deltak) under a single leadership team. The intention is to offer solutions that support a learner's career path from college through employment and provide employers with tools to select and develop talent and manage organizational change. This is a major strategic endeavor from one of the market's most established players, and it has not yet been replicated elsewhere.

WPP plc

WPP has transitioned to digital and is attacking mobile. It continues to seek new ways to creatively reach future audiences, as exhibited by its partnership with Snapchat and The Daily Mail to form Truffle Pig, a new agency creating content for the vertical screen. The advertising conglomerate has a wealth of properties under its wing, mixing digital agencies with PR, adtech, and research firms in a real-time experimentation lab that could churn out new approaches and business models.

ESSENTIAL ACTIONS

With an abundance of trends and companies illustrating transitions, disruptions, and permanent shifts that are occurring and driving the industry to its tipping point, we see an equal number of opportunities and areas of unmet needs, and holes in the market for innovators to fill.

- **High-quality company information.** Even with a multitude of sources from profiles and credit reports, to Owler, Hoovers, Onesource, and D&B, on through company websites, we hear a need for complete, reliable, and updated company information.
- **Integrated access to multiple resources.** Users tell us that they will no longer access content or apps that aren't in their workflow. Librarians tell us that integrated access to multiple vendors' content is challenging, and enterprise users are demanding the ability to search across multiple solutions.
- **Cybersecurity.** Users and enterprises are realizing that their information is unsafe and, worst case, may be stolen. The challenge and the opportunity to solve this critical issue is huge and growing, with cybersecurity firms booming.
- **Horizontal and vertical markets.** The biggest opportunities we see lie in understanding data by vertical market – where there are holes in those verticals for new edge-of-plate thinking, product opportunities, and M&A. We see startup energy in edtech, healthcare, agribusiness, commodities – and in horizontal services – e.g., A.I., intelligent systems, data handling, and analysis. Solutions for target markets at the intersection of role and vertical is one of the sweet spots now playing out in the market. The most pressing needs surround system integration and data handling – solving how users optimize the incredible data availability of 2015 and integrate all they know into seamless analysis that ends with comprehensive and actionable answers.

Here is our recap of essential actions to thrive and grow in our time of convergence and in a data-driven industry at a tipping point.

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✔ Understand shifting behaviors and preferences.

With end-users committed to mobile apps, sharing, and anywhere/anytime access, companies need to pay close attention to the very different patterns of use. Deep understanding of nuances and personas will be essential to garnering millennials' interest and adoption – and loyalty – to platforms and solutions.

✔ Leverage the power of face-to-face.

In-person events and exhibitions are powerful drivers of revenue, especially for brand and market leaders who experiment and find ways to extend the power of face-to-face beyond the moment into ongoing engagement year-round.

✔ Design and deliver data quality.

Whether selling or importing data, quality assurance and regular benchmarking the caliber of data assets is critical. Quality data is key to hyper-niching opportunities. High-quality, unique data drives a premium – and valuations for those who own it.

✔ Support seamless access.

Vendors that want to be in the game need to make content accessible with a single sign-on/password and must offer the ability to search across multiple solutions. Individual doorways are out of vogue. Be in the workflow through smooth integration with application software providers or be the workflow by owning the platform. Focus on solving the biggest pain points for users around disaggregated data that cannot be brought into play (wrong format, unsearchable structure, copyright restrictions) and systems that are proprietary in an increasingly open world.

✔ Ensure security of systems and data.

Have systems hacked and find the back doors before the cyber criminals do. Partner with or acquire top-notch security experts. Privacy protection has to be at the top of the list of focal points. Companies need policies for what happens and where legal responsibility and liability lie when the machine gets it wrong.

✔ Benchmark and keep raising the bar.

We advise leaders to compare company performance – and theirs as leaders – with that of similar companies. Commitment to understanding norms and to achieving/ exceeding benchmarks is critical to competitiveness, innovation, and healthy growth.
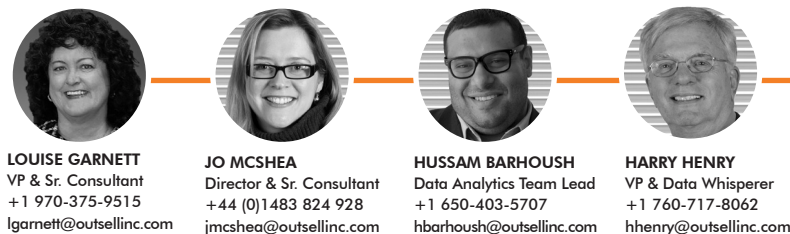
MEET OUR TEAM

Outsell has assembled a global team of executive-level analysts, most with more than 20 years of experience developing, marketing, selling, buying, deploying, and using information and content technology. We're all here to serve, and any person you call is the right person.

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