HR Technology Market 2019:
Disruption Ahead

joshbersin

About this Report

Josh Bersin has been researching the HR technology market for more than 15 years. His research is based on surveys and hundreds of interviews with HR and talent leaders, vendors, investors, and other analysts.

This year's report was conducted with support from LRP Media Group, an innovative media company serving millions of business and education professionals worldwide. Human resource and talent leaders rely on Human Resources Executive ® and HRM Asia, two of the company's five publications. The company produces the HR Technology Conference & Exposition®, the world's largest technology conference for the HR and talent markets. The company expanded its global reach in January 2018 with its acquisition of HRM Asia and will launch two HR technology-focused events in Singapore and Shanghai in 2019.

This report, a $1,495 value, is complimentary to all premium pass delegates of the 2018 HR Technology Conference & Exposition, as well as attendees of the 2019 HR Festival Asia and 2019 HR Tech China. The report further guarantees that HR Tech attendees are fully informed and well-equipped when it comes to formulating and executing their HR technology strategies.

Sign up now for the 2019 HR Technology Conference, which will be held October 1 – 4 at The Venetion, Las Vegas, to hear Josh Bersin live and to receive the 2020 report. Register for the premium pass (promo code: HTMR19) by May 15 to receive $450 off of regular registration.

Contents

Introduction

AI, Productivity, and Focus on the Employee Experience Will Drive Technology Investments in the Year Ahead

HR technology is an enormous part of business today. In the United States alone, there are more than 12 million employers spending over $5 trillion on payroll, benefits, and other employee programs. More than 40% of the U.S. workforce changes jobs every year, creating a $250 billion-plus market for recruitment, advertisement, assessment, and interviewing. The L&D marketplace is over $220 billion per year and encompasses onboarding training to leadership development to technical and continuous skills programs. The market for wellbeing, benefits, insurance, workplace tools, and productivity systems is similarly large.

I can conclusively state that HR technology is changing at a faster rate than I have ever seen. Cloud-based core HR systems are expanding and growing in number and an ever-increasing number of new companies are building AI-based talent tools to reshape the entire talent management landscape. Players such Google, Microsoft, IBM, Salesforce, and Facebook are entering the space, leading me to believe the markets for HR technology and workplace technology are merging.

At the same time, companies are throwing money at HR tools, searching for ways to transform their workforce, make people more productive, and improve their quality of hire, skills development, and employee engagement and retention.

Is it any wonder the market grew by an astounding 10% last year[1]? In fact, the amount of money spent on HR tech is in itself a game changer. The cloud, with its many benefits, is expensive.   The average large company now has 9.1 core talent applications (up from 7 in 2018) and is spending $310 per employee per year -- a *29% increase over last year*. While I'm not saying this is out of line, it does feel inflationary and I would

1 Sierra-Cedar 2018-2019 Systems Survey

not be surprised to see companies push for more ROI and productivity analysis when the economy cools off.

Before I dive into the eleven seismic shifts I see taking place, let me review the people-related challenges companies face today, since these are ultimately the drivers for HR technology. While HR has always had the responsibility for staffing, payroll, employee relations, and general employee development, today a new set of talent issues has appeared, raising a new set of questions that must be addressed:

- **Fairness and transparency.** Are we hiring, promoting, and paying people in fair, unbiased, and transparent ways? Are we being honest and open about the way we capture and use employee data?

- **Diversity, inclusion, fairness, and transparency.** Are our people practices inclusive, diverse by design, and respectful of gender, age, race, educational background, and mental and physical ability? Are we clear in our talent decisions and are we sharing information in such a way that employees feel a sense of trust in the company, management, and leadership?

- **Social consciousness.** Is the organization acting in a responsible way for society and the communities it serves and does business in?

- **Productivity.** In a world of never-ending digital interruptions, are we reducing workplace clutter and distractions so employees can get their work done? Do we know how and where employees are wasting time?

- **External brand.** Is our external brand authentic and relevant to job candidates and employees? How do we monitor the websites where people can rate our company?

- **Teams.** Are we building the practices, tools, and reward systems that enable the company to be agile and team-centric? How do we flex our ERP system to help us manage our company as a network?

- **Careers.** Are we actively helping employees upskill, move into new roles, and build purposeful, meaningful careers? How can we improve internal mobility without requiring promotions?

- **Gig and contract work.** Are we ready to embrace part-time, gig, and side-hustle workers who want to work on their own terms? Can we manage contract and contingent workers within HR or should we outsource management to procurement?

- **Wellbeing.** Are we responding to employees' demands for a more humane, healthy, and friendly workplace where they feel developed and rewarded while they work extra hours? What tools should we buy to support wellbeing? And where does our responsibility stop and individual ownership begin?

- **Pay.** Are we adapting pay and reward practices to be more generous, holistic, and competitive? Can we deal with demands for real-time pay and the expectation of more flexible rewards?

- **Leadership.** Are we actively developing a new generation of leaders? Do we fully understand the requirements for leading a networked organization? Do we have tools and data to show leaders how to continually improve?

- **C-suite.** Are we doing our job to assist the C-suite to better adapt to business change and people issues? Are we guiding decisions related to the impact of automation and AI on workforces?

These are the big issues I talk about with HR and leadership teams everywhere I go. Each is dependent on technology and some can be revolutionized by technology – making HR technology more important than ever this year.

The Rapid Pace of Change

While the HR technology market has certainly gone through major evolutions in the past, this year it's changing in ways we never predicted. The incorporation of automation is explosive, bringing robotic process automation, chatbots, cognitive hints and nudges, messages integrated into our work environment, voice and text communication, and of course AI-based suggestions and tips. The use of cloud platforms lets technology vendors build tools faster than ever. As we look at technology disruptions, I see three vectors of change:

- First, the **sheer power of technology is increasing**. PCs, mobile devices, and cloud services can process data, identify language and speak conversations, identify stories and trends, and give us information and recommendations faster than ever before. Workday, for example, now offers an AI-based analytics tool that points out trends, variations from plan, and outlying behavior entirely based on data, without the need for detailed analysis.

- Second, tools are being **integrated into the flow of work**. One of the biggest trends in HR and L&D is the integration of HR practices and learning into the flow of work. This is a new way of improving the employee experience, and I believe it represents a new design paradigm for technology providers and HR teams. In fact, I believe workplace technology and HR technology are coming together – ultimately a positive change for employees and HR teams.

- Third, the **security, transparency, and social nature of data are now business risks.** Companies are capturing data, sharing data, and identifying external data that may alienate employees, leak company secrets, or perhaps, through AI, recommend or suggest damaging behaviors. A recent study[2] by major U.K. unions found that 56% of employees are afraid of workplace monitoring and more than two-thirds are strongly negative on mood monitoring, keystroke monitoring, or other forms of data collection in the workplace. We have to be more open, transparent, and ethical about what we do with collected employee data.

Given these issues as a backdrop, let me dive into the top eleven seismic shifts I expect to see throughout 2019.

2 https://www.bbc.co.uk/news/business-45214424

1 Core HR Platforms Evolve from Systems of Engagement to Systems of Productivity

By far the most important and essential part of the HR technology landscape is the market for core HR platforms, which includes cloud-based HRMS, payroll, and employee management systems. This market, well over $8 billion in size, includes large vendors (ADP, Ceridian, Oracle, SAP, Ultimate, Workday) and dozens of mid-sized companies such as HiBob, Sage, Zenefits, Gusto, BambooHR, Zoho, Namely, Paycom, Paychex, Paycor, PeopleStrong, and Darwinbox.

Every company needs one of these platforms, and now that most are available in the cloud, vendors are rapidly changing their offerings. While these systems are important payroll and record-keeping systems, they must also be useful, productive, and engaging to employees directly.

Twenty years ago, these were back-office systems designed to be used by HR managers, payroll clerks, and HR administrators. Over the last decade, they have become useful for employees, with interfaces that let employees use self-service functionality to manage their information, benefits, and various other tasks.

Today, vendors are struggling to evolve again and make these systems into productive management and workforce tools that help employees actually get their work done. While most of us work in teams and on projects, none of these systems really supports team- or project-based work yet, so vendors have lots of work ahead.

Let me give you an example. One of the more innovative new core HCM platforms is a product called Bob, from a fast-growing company called HiBob. Bob is designed as a management platform first and HR platform second, so its entire design is focused on what information managers, employees, and executives need.

While the company is still fairly small (200-plus customers), it represents a new approach to core HR, one I believe every major vendor will have to address. ADP, Oracle, SuccessFactors, Ultimate, and Workday are all moving in this direction, but since their core functionality is designed for complex global companies, such a change is not easy. While these vendors are focused on building out talent management features today, their core systems are still not always useful for day-to-day work.

To address this issue more urgently, companies are rapidly snapping up employee experience platforms (EEP) such as those offered by ServiceNow, Deloitte ConnectMe™, PeopleDocs, and PeopleSpeheres in an attempt to create an easy-to-use interface that helps employees use the system for the moments that matter at work. To me this trend poses a major market shift, because user engagement with core HR systems is under attack, possibly commoditizing this entire market.

Before a purchase, executives are asking questions like these: Can employees easily use the system? Is it useful for day-to-day work? Does it facilitate, model, and improve the operation of teams, gig work, and a highly mobile workforce? Is it flexible enough to accommodate GDPR and employment contracts in Europe, rapid changes in pay and work practices in Asia, local small business needs in India, and the many other regulatory issues around the world?

Ultimately the core HR platform market will continue to grow in 2019, but I think buyers will become more discriminating, as ease of use and productivity take on more emphasis in purchasing decisions. While these systems are essential and must meet functional needs, if they're difficult to use, employers will have to buy another complex set of employee experience software for successful adoption.
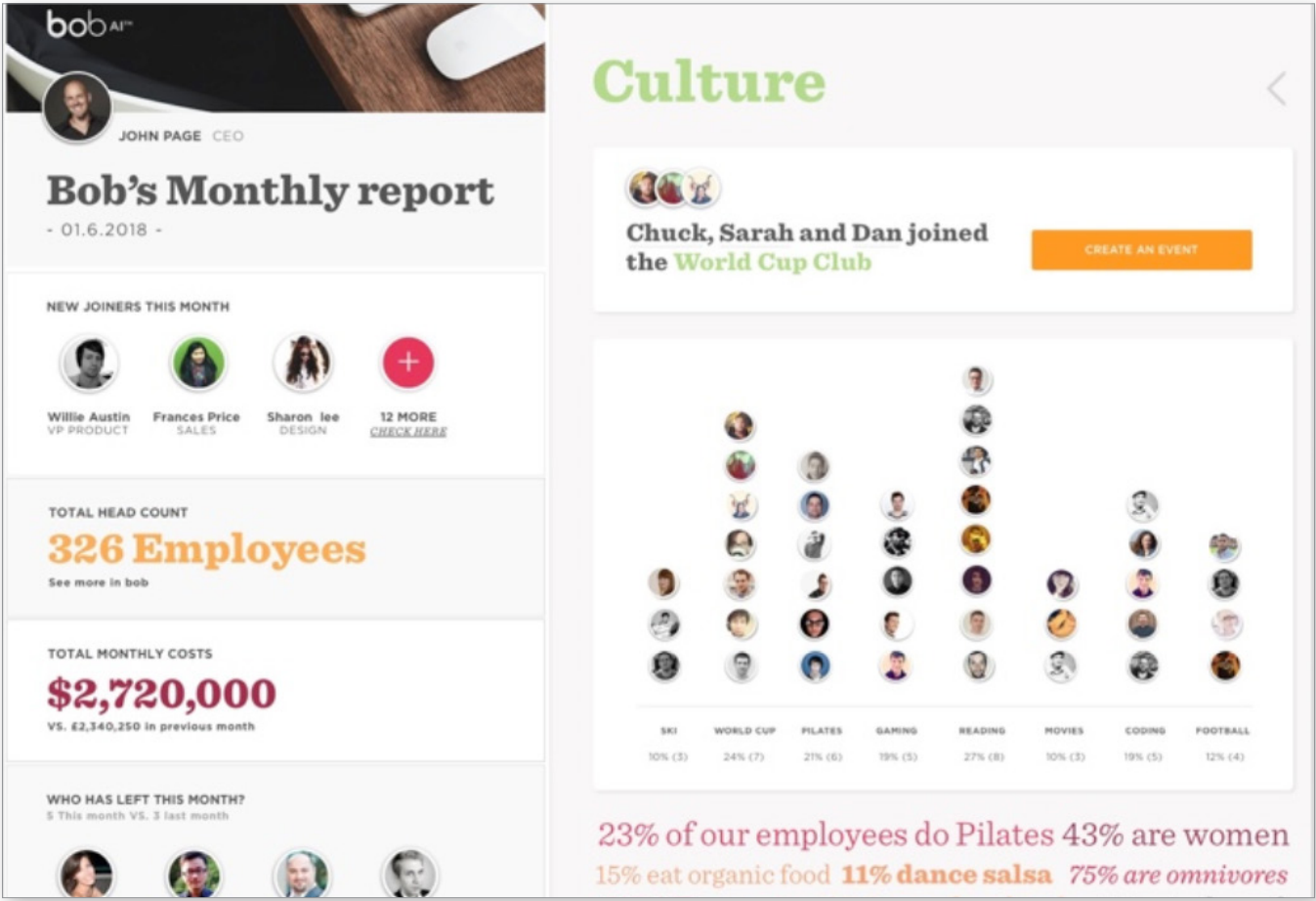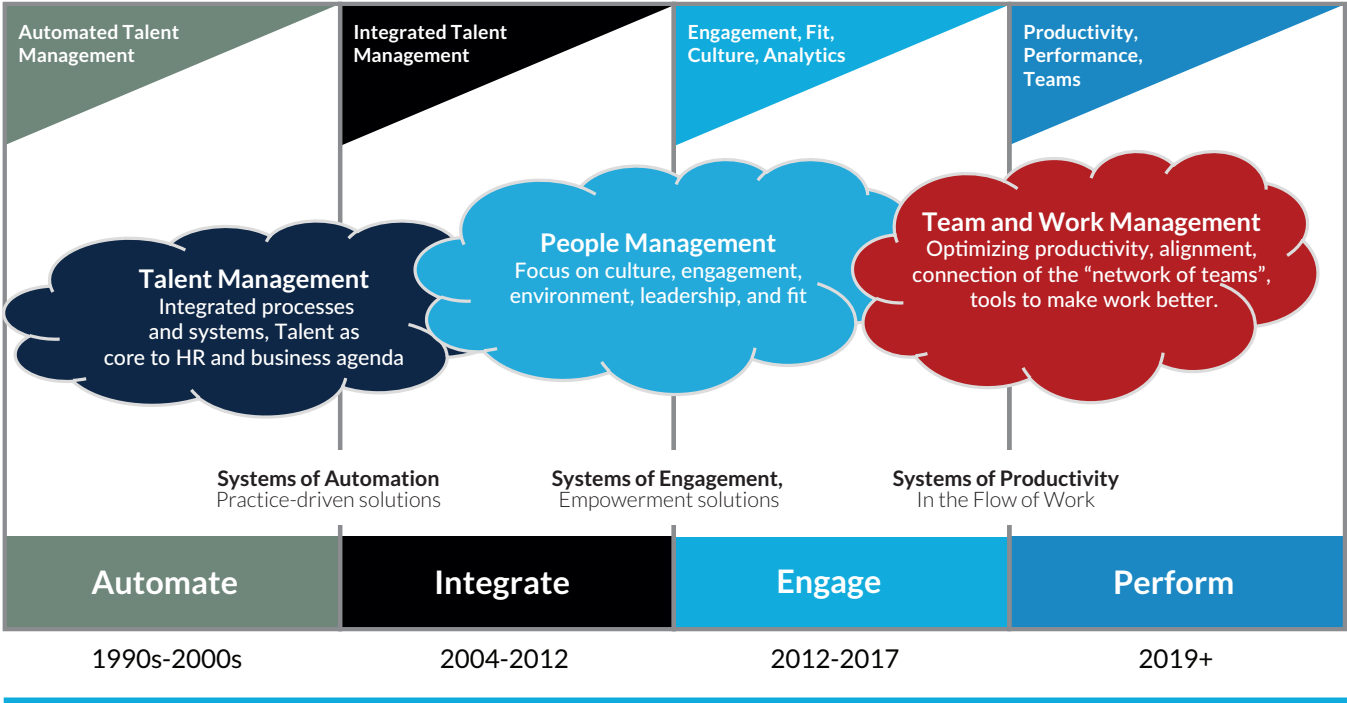

Figure 1
Bob Screen Shot

Figure 2
From HCM to Talent Management to HR in the Flow of Work

Convergence between Workplace Technology and HR Technology

One of the most interesting changes taking place this year is the way workplace technology vendors such as Microsoft, Google, Slack, Atlassian, and Facebook are all getting into HR. Why? Quite simply the HR tools we bought as a "destination" in the past are being integrated into the flow of work.

Over the last 20 years, most HR systems were portals, apps, and destination platforms that employees visited to apply for a job, learn, change their address, or do some other HR-related task. Today, as we spend more and more of our working lives in productivity systems such as Office 365, Slack, and Workplace by Facebook, vendors are putting more and more HR tools into

these systems. Chatbots, messages, and real-time notifications are appearing, bringing the HR and workplace worlds together.

I recently met the CHRO of one of Coca Cola's biggest bottlers in Europe. As we were talking about performance platforms, she told me her team had looked at many of the hot tools in the market and eventually settled on a SuccessFactors-driven system they then modified to plug into Saleforce.com. Her reasoning? Since 90% of her employees' time is spent in Salesforce, it made sense to let employees set goals, provide feedback, and do reviews while in Salesforce. The results were a huge success; she and her team saw Immediate adoption, tremendously positive feedback, and a massive re-engineering of their feedback and coaching processes. This is an example

Figure 3
Modeling the Networked Organization: An Example

of HR in the flow of work, and it shows how workplace and HR technology must now come together.

Modeling the Networked Organization: New Platform Architecture Is Needed

Most companies are now realizing that the hierarchical work model is useful for pay decisions and possibly for traditional careers, but it does not reflect the way we actually work. McKinsey research shows more than 37% of companies are already experimenting with work models based on managing cross-functional teams, setting team goals, and valuing people based on skills and connections rather than job level, title, or tenure.

This type of work model is very difficult to implement in traditional HCM systems which are built on relational or object-oriented databases in which the objects or tables represent long lists of transactions linked to each other through joins. This database architecture, which has been around for 50-plus years, was designed for transaction management, not complex network modeling. So none of the core ERP or HCM vendors have been able to build products that truly model the way we work today.

One of the potential solutions for new models of work is an exciting technology called graph databases. These are new products, pioneered by companies such as Neo4J, which

essentially store data so it can be represented in a network. These databases are vastly more powerful for modeling how people interrelate, search for data, communicate, and build different types of relationships with peers, team mates, bosses, subordinates.

In a graph database, all objects are defined by their relationships. When you look at the image of a social network, you can envision the many ways we could use this at work.

Such a graph-based system could represent a company's insurance plans, managerial and peer relationships, recipients and senders of emails, location information, and dozens of other data elements that need to be managed in an HCM system. One of our clients is now experimenting with a graph database representing the relationships of 70,000 employees. The company is concluding that while its core ERP is needed for payroll and recordkeeping, it is far less useful for other workforce management purposes.

This type of technology, coupled with blockchain identity management and security, could form the basis for an entirely new industry of HCM technology over the next five to ten years. Stay tuned.
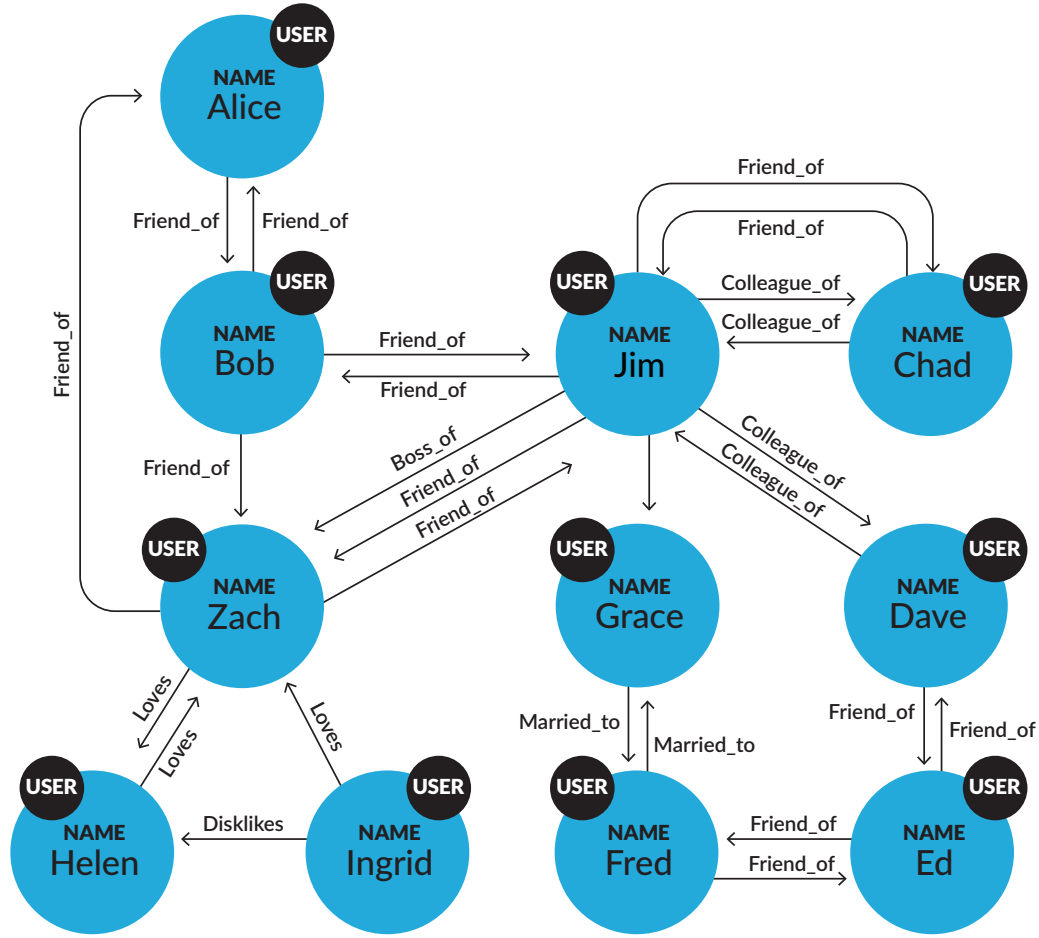
2 The HR Technology Architecture Will Change

For much of the last decade we have purchased and implemented HR technology in a fairly simple technology stack. There was the core HR system (HRMS, payroll, benefits administration) and then a tapestry of talent management systems implemented around it. These talent management tools included systems for goal setting, performance management, learning management, compensation management, as well as systems for benefits administration, and engagement surveys.

As I will describe in later in this report, all these wonderful talent applications are changing, and there is essentially an entirely new breed coming to market. But in the meantime, what used to be integrated talent management suites are now being integrated into core HR platforms.

Figure 4 shows a set of talent management applications (in the blue layer). Each is designed to meet the needs of different

audiences and back-office HR and IT staff. The nature, type, and definition of these systems is changing as described in the next section, but in many cases, these applications are now coming from a core HCM vendor.

ADP Oracle, SAP, Ultimate, Workday, and most of the mid-market HCM players are now heavily investing in recruitment, performance management, learning, and even engagement tools within their suites. The integrated talent management suite market almost vanished overnight (although a few companies such as CornerstoneOnDemand and Saba continue to flourish) as core HCM vendors built or bought these tools.

I'm not saying that all companies will use the talent management suites from their core HR vendor today, but many companies will. Workday claims more than 1,000 companies now use its recruitment software, for example, and SAP has more than 2,000 companies using its LMS or other learning tools. So the applications in the graphic's blue layer are more competitive than ever. As a result, pricing is going down and niche vendors need to be agile and innovative to survive.
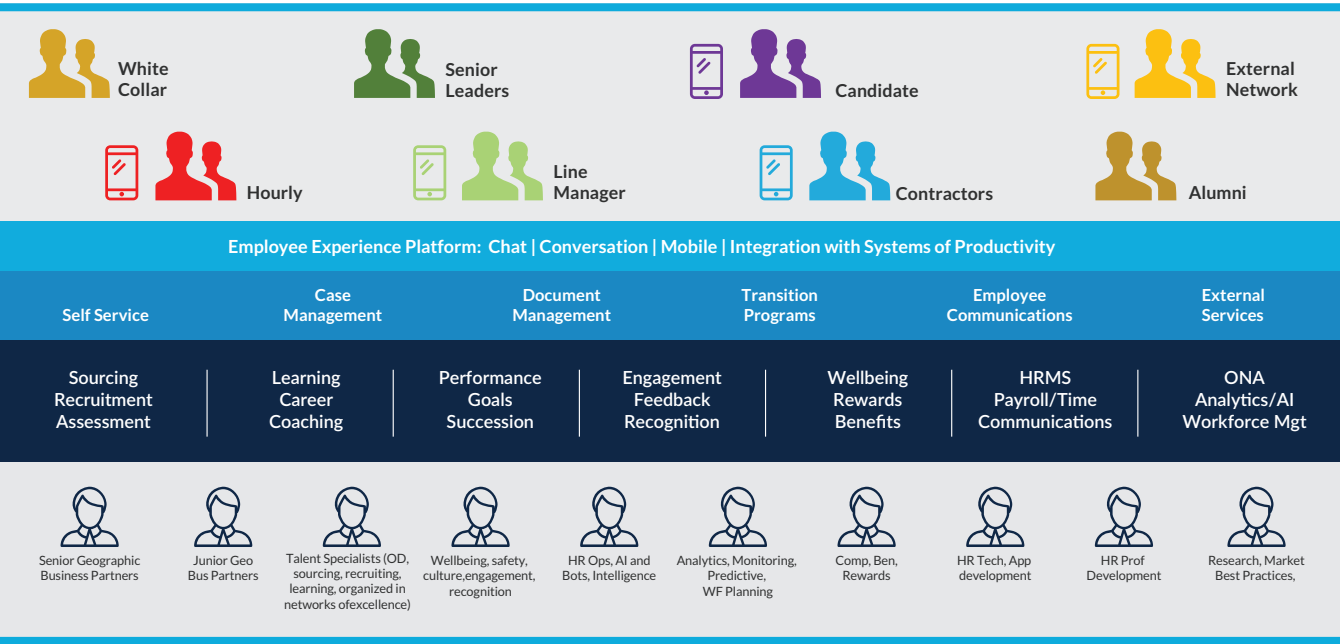

Figure 4
HR Technology Architecture: 2019 and Beyond

Figure 5
How Talent Management Systems Are Changing

What's new about the HR technology architecture are the offerings in the red layers. We now fully understand that no core HR system can do everything, so we need an employee experience toolset to sit on top. IBM would argue that this red layer is Watson, an entire suite of services that let employees chat, talk, and interact with core HR systems. ServiceNow, the clear leader in this space, is now building and buying tools for chat, cognitive interfaces, and a range of other features that let companies build and deploy an easy-to-use system that embraces the moments that matter – without forcing employees to learn how to use the core system. These layers are where the new "holy war" for HR tech will take place[3].

What's happening to these talent applications? They're all essentially splitting into two categories. One is the talent system of record, similar to how the LMS or ATS standardizes information in corporate training or recruitment. This is the level of functionality that belongs in the HCM system.

For example, the enormous market for applicant tracking systems is now being subsumed into HCM platforms. All the major ERP vendors now offer applicant tracking systems, but most do not have advanced features for AI-based sourcing, video or AI-based assessment, and advanced advertisement analytics, so companies are buying an HCM system and then

layering on top tools such as Entelo, HireVue, and Pymetrics to create a more advanced recruitment solution.

Similarly, in learning, a company may choose to use the HCM vendor's core LMS but then purchase a learning experience platform and series of advanced learning tools to sit on top. I think this is a major shift in the talent management market, where much of the core record keeping for talent practices migrates into the HCM system while advanced innovations continue to flourish in new products.

For core HCM vendors, this means they have to open up their APIs to let all the value-add talent vendors access their core platform. While Workday, Oracle, and SAP can probably build reasonably good recruitment tools, for example, they still must acknowledge the 100-plus innovative, AI-based recruitment add-ons. The core HCM vendors have to make it easy for them to integrate, exchange data, and sell together. This is why Workday recently opened up its platform and SAP started a whole initiative to attract such tools.

---

3 https://searchhrsoftware.techtarget.com/news/252448535/New-tech-trends-in-HR-Josh-Bersin-predicts-employee-experience-war

3 The 21st Century Talent Management Market Explodes with Innovation and AI

As I discussed in the preface, companies now face a wide variety of new talent challenges, many of which were not recognized in the mid-2000s when most talent management suites were built. To address these issues a new generation of tools has now arrived. And they are innovative, creative, and often AI-based.

In the accompanying chart, I've tried to group these offerings by category. These new talent applications (and the word "talent" is probably not even the best descriptor anymore) are focused on improving the employee experience from top to bottom – aiding recruitment, performance and goal setting, learning, career management, rewards, wellbeing, and ultimately work itself.

I'm amazed at the innovation and creativity shown by new vendors in this market. Figure 7 shows only a small percentage of the new vendors that have entered the market in the last five years.

Figure 8 lists just a few of the innovations we're seeing. There's no way the larger HCM vendors can possibly innovate in all these areas. As the list of new vendors demonstrates, there are many very innovative companies building these systems, and many have VC funding of $10M or more.

AI is a huge part of the innovation taking place. Since these new vendors are often starting from scratch (and they are assuming that the talent system of record is in the HCM platform), they are focusing on building AI-based features.

Xander and Compass give managers coaching based on direct feedback from engagement surveys. Pymetrics assesses mental capabilities and skills through AI-based games, dramatically improving hiring. Zugata assesses and analyzes functional and technical capabilities through surreptitious emails to peers. Butterfly.ai coaches managers based on behavioral cues and

Figure 7
New Vendors Disrupting Market
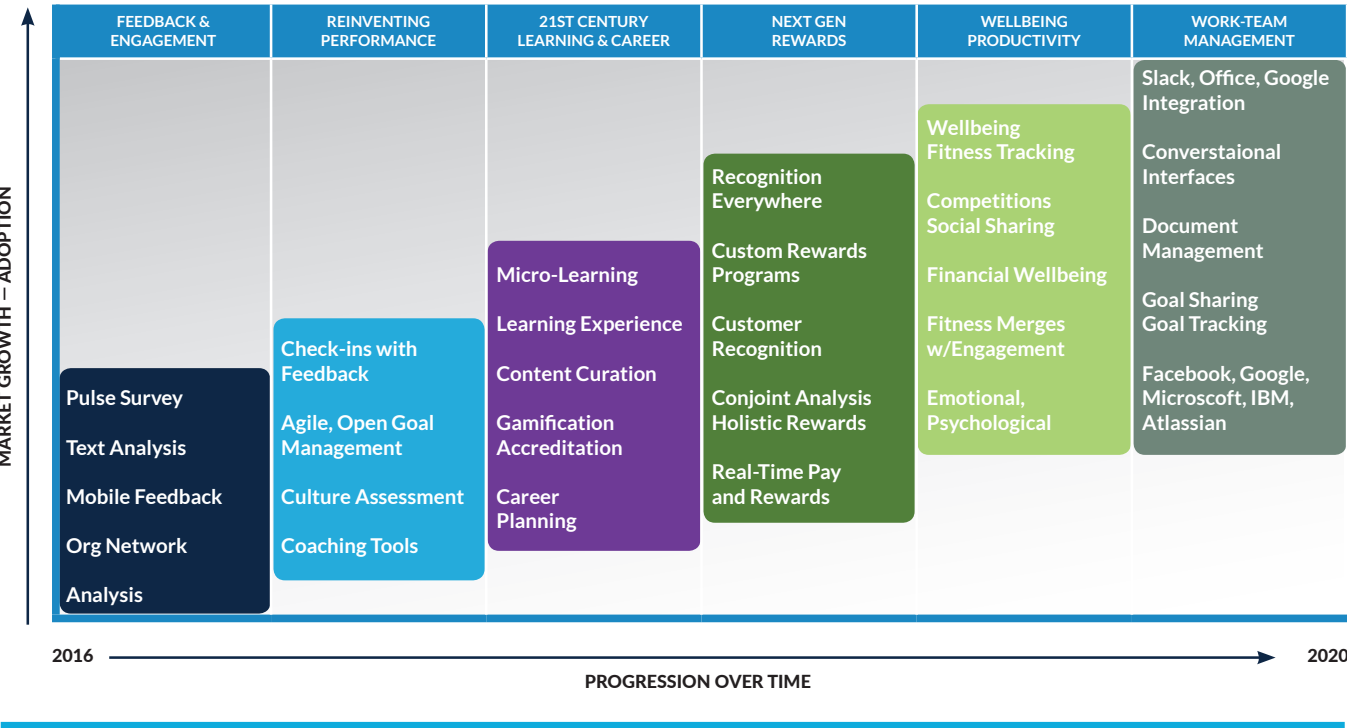
Figure 6
2019 and Beyond: A New Set of Talent Applications

RECRUITMENT	LEARNING AND CAREER	PERFORMANCE MANAGEMENT	REWARDS AND RECOGNITION	WELLBEING	WORK MANAGEMENT
AI-based sourcing, video and social assessment, advanced analytics, behavioral assessment, gig work management, contingent work management	Learning experience platforms, micro-learning platforms, MOOCs and content libraries, VR and AR learning, career portals and career development, gig work management	Continuous performance management tools, agile goal setting, team management, ONA network analysis, AI-based development planning, integration with learning content, online coaching	Social recognition, social rewards, agile rewards, real-time pay, pay and reward benchmarking, rewards customization, conjoint analysis of rewards	Behavioral improvement platforms, wellbeing education and training, financial fitness support, coaching, games and competitions, ERGs, diversity and inclusion training, analysis, and tools	Agile goal setting, team collaboration, messaging, document and video sharing, AI-based coaching, integrated learning and support

Figure 8
Market Segment Innovations
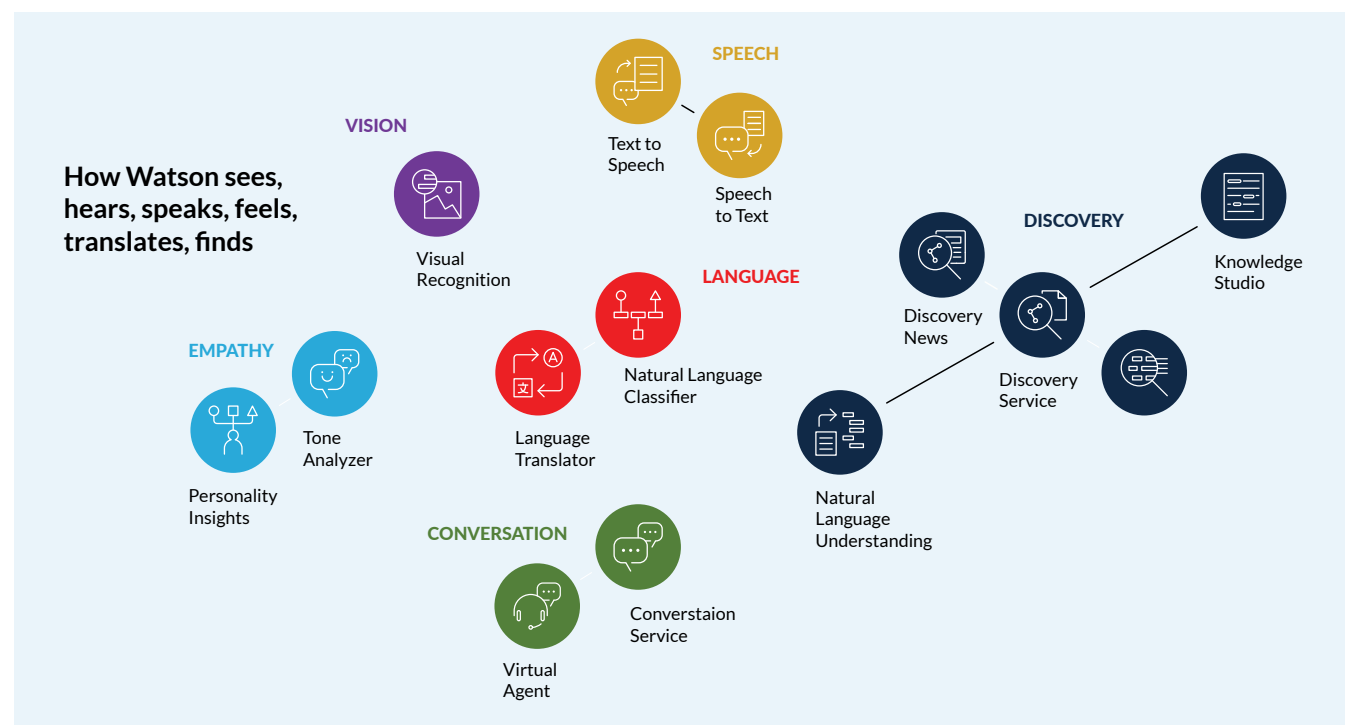
Figure 9
IBM Watson Applies AI-Based Algorithms

real-time feedback. Volley reads documentation and generates learning assessments automatically. Edcast recommends content based on role and experience of others. BetterUp identifies the best coach for an employee and monitors the coaching process based on self-assessments and work experience. HireVue assesses candidates on a video interview through facial expressions and language. Filtered chats with learners to improve learning outcomes based on content and learning experiences by others. Textio improves job descriptions by monitoring language which is most unbiased and best fit for similar jobs. Mya talks with candidates to screen and assess them automatically. Entelo finds candidates based on their social profiles and external experiences.

Incidentally, AI is almost a commodity to buy. It's really how you train, apply, and continually finetune it that matters. IBM, Google, Microsoft, and Amazon all offer AI services through their web interfaces, so vendors can apply a wide range of AI algorithms without hiring armies of software engineers. IBM

offers a range of AI web services that an engineering team can use to stitch together many types of cognitive, intelligent, or chat-based services using IBM's APIs without having to build underlying code. So when you try to evaluate AI, you have to look at the vendor's real data set, how much experience it has in training the AI, and how well it actually works in your use cases.

In the case of IBM, the company is trying to build out its own family of talent applications, including IBM Watson tools for assessment, career planning, coaching, salary planning, and interfacing with the HCM platform. IBM's CHRO has told me that the company's internal use of AI has had a dramatic improvement in employee career management and salary administration. The system now recommends career moves and salary changes based on patterns of success within IBM, demand in the outside market, and demand for skills inside the company. Nearly any company can now avail itself of this type of technology.

Growth in the HR Systems Architecture Function

With all this change in technology and architecture, the HR systems architecture team has become more important than ever. In most companies, the IT department cannot possibly keep up with HR market changes, so an HR-IT team is needed to scan the landscape, evaluate vendors, and develop a long-term architecture. The Sierra-Cedar 2019 study found a 52% increase in this internal role – often filled by one or two individuals knowledgeable about HR and L&D architectures. I think it's an urgent priority to have such a function in any large company today.

One of the companies that has done this exceedingly well is Deutsch Telecom. I've met with the head of its architecture team many times. He is a senior IT expert as well as a senior business transformation consultant. He has developed a series of employee personas, use cases, and global process guidelines from which he evaluates and selects technology. This is the type of role almost every company needs.

Another of my clients is the head of HR innovation at a large insurance company. Not only has he served as the company's CLO, chief talent officer, and head of HR operations, he is also a technologist at heart. He is making sure this global company has a long-term, comprehensive HRIT roadmap while he simultaneously is building a massive graph-based database to look at new models of employee engagement data. This skillset – a deep understanding of how the organization works, coupled with passion, and driven by the energy to innovate and experiment -- is an incredible combination for talent leaders.

4 The Employee Experience Market: A Key to Employee Engagement

The fourth major shift is the enormous focus and interest in the employee experience, a broad term that includes day-to-day work experiences, career expectations, employee-management relations, and HR requirements. To be sure, the phrase "employee experience" encompasses much more than the traditional definition of "employee engagement."

The reason this is disruptive to HR technology is simple: It means we are shifting our thinking from processes and transactions to experiences and moments that matter. In other words, companies no longer just want to buy platforms that are easy to use. They want to buy platforms that can automate and simplify employee experiences, which means they are actually case management, transaction management, and process management tools.

Consider the experiences depicted in Figure 10, which is based on the work I did for Deloitte's Simply Irrisistable Organization™ model. These moments are complex workflows in and of themselves common to all employees at various points in their careers. Today we implement these moments or experiences in stand-alone systems.

As you can see, these moments are typically transactional in nature and usually handled in stand-alone, specialized systems or front-end portals built to make them easier.

All this is starting to change. A set of new vendors, including ServiceNow, PeopleDoc (now owned by Ultimate Software), Deloitte ConnectMe™, Oracle, and SAP are now building what we used to call HR self-service platforms. (And a new set of startups such as PeopleSpheres are also going after this space.) These new systems include integrated case management, document management, process management, and lots of security and profile integration. They can be used to manage a range of functions, from ordering a new PC, changing a desk location, and invoking transactions that cross between HR, IT, and finance.

Is this a new idea? Not really. But we never built this kind of functionality in the core HCM system very well, so companies are eager to take advantage of these new offerings.

I've talked with multiple CHROs who have spent many millions of dollars on replacement core HCM systems, only to find out that the employee experience fell short and required a new layer of software on top. These new employee experience platforms are not only good HR self-service systems, they also include chatbots and deep integrations to HCM, ERP, learning, and recruitment systems. They have development tools, monitoring, and transaction management features as well. In a sense, they are a new kind of middleware, designed to make it easy for the HR department to design moments that matter and then implement them for employees.

Figure 10
The Complete Employee Experience (an expanded version of Deloitte's Simply Irresistable Organization™ model)

MEANINGFUL WORK	HANDS-ON MANAGEMENT	PRODUCTIVE ENVIRONMENT	GROWTH OPPORTUNITY	TRUST IN LEADERSHIP	HEALTH & WELLBEING
Autonomy	Clear goal setting	Flexible work environment	Facilitated talent mobility	Mission and purpose	Safety and security
Selection to fit	Coaching and feedback	Recognition rich culture	Career growth in many paths	Investment in people, trust	Fitness and health
Small teams	Leadership development	Open flexible work spaces	Self and formal development	Transparency and communication	Financial wellbeing
Time for slack	Modern performance management	Inclusive, diverse culture	High impact learning culture	Inspiration	Psychological wellness and support

Figure 11
HR in the Flow of Work: Moments That Matter

ATS/RECRUITMENT SYSTEM	ONBOARDING SYSTEM	PERFORMANCE MANAGEMENT SYSTEM	LEARNING SYSTEM	HR SELF-SERVICE SYSTEM
Candidate assessment, interview process, job offers, background checks, employment contracts	Onboarding, transition management, initial job assignment, training	Goal setting, coaching, feedback, review, assessment, salary review, bonus, raise	Career planning, career transition, certification, compliance, on- the-job training, support	Family situation change, leave, exit, promotion, new role, new city, new benefits, alumni management, ERGs

Figure 12
Market Segment Innovations

There are many specialized vendors that fit into this interstitial space. Consider GuideSpark, which has built one of the most integrated systems for employee communications; or EnterpriseAlumni, which has built an integrated solution for management of alumni; or Sequoia, a benefits service company mentioned earlier. These are very important technology providers specializing in unique experiences for employees. I believe more and more big companies are going to want to use these and similar systems, and they need a platform to bring them together.

Incidentally, the big disrupter in this market may not be ServiceNow or PeopleDocs or Workday, but rather a chatbot vendor that figures out how to build a conversational interface to all HR systems. IBM now sells a product called Watson Cognitive Assistant for Workday (you have to do business with IBM to get it). It handles some of the most complex parts of Workday such as moving an employee from one department to another through a simple conversation. I met with a startup called Jane.ai which is building a completely open cognitive system that will interface with transactional systems, documents, and process maps to do the same. WalkMe, an amazing product that is positioned as a digital enablement tool, actually does this also. It monitors activities in various applications and suggests improvements. These types of products sit between transactional systems and employees, so they are all really employee experience systems.

Could Workday, Oracle, SAP, or ADP build this type of solution? Absolutely, but these vendors are very focused on building their own ERP-like and payroll solutions and they want to provide these services through open APIs. All HCM vendors now offer open platforms (even Workday is now aggressively opening up its platform and finding partners), but it's really up to the customer to bring it all together.

I'm not going to try to predict how big this segment becomes, but I do see it as a radical change in the market. I spent a few days at the ServiceNow user conference earlier this year and was amazed to see that the company has almost 17,000 customers running its IT service management tools and almost 1,000 customers using its HR tools. Clearly this is a juggernaut, and as companies adopt these tools they take users away from core HCM systems, threatening the incumbents.

Organizing Self-Service and Its Evolution

Finally let me add one more important point. The employee experience extends well beyond HR. When I can't get my computer to work, it doesn't matter how well my payroll system works – I'm not happy. When my expense reimbursements are late, or my badge reader fails, or I can't use my phone to access a report – I'm not happy. All this is part of the employee experience.

This is why almost 55% of companies merge their HR service centers with their IT service centers, using common tools for both.   ServiceNow has taken the lead in IT service automation, so of course they're likely to be a big choice in HR also.

When you think about employee experience as a holistic problem, you'll design better solutions. I visited Facebook recently and was surprised to find a whole range of employee experience programs that bring HR and IT together. Engineers who commute to Facebook's busy offices have free valet parking. Ubiquitous technology service desks will quickly replace any failing PC or phone without question. The whole company uses Workplace by Facebook for support, and there are chatbots and service agents 24 hours a day to help employees with any problem. And all IT and HR related service staff are cross trained.

This should be your strategy. Think about employee experience as an end-to-end problem, and that will enable you to select technology in partnership with IT and finance. This, by the way, is one of SAP's big themes in its newest focus on SuccessFactors in the integrated enterprise. SuccessFactors, Concur, and other SAP tools create an integrated approach to end-to-end workforce management.

Finally, look for solutions that focus on automation, not just integration. I just finished reading Deloitte's new study of AI in the Enterprise[4] and it shows the rapid acceleration of automated services as the biggest new wave of AI. While it's important to design your service delivery function to be efficient and quality-oriented, the biggest trend in this area is automation, voice interaction, and using chat and other cognitive technologies to make the function more intelligent.

---

4 https://www2.deloitte.com/insights/us/en/focus/cognitive-technologies/state-of-ai-and-intelligent-automation-in-business-survey.html

Automated Services
(voice, apps, AI, nudges, intelligent proactive solutions)

Self-Services Systems
(portals, apps, case management, knowledge base, expertise mgt)

Managed Service and Service Delivery
(integrated service delivery strategy, call centers, outsourced HR services)

Ad-Hoc Service or No Service
(deliver as needed, random, business partner driven, difficult to manage)

Figure 13
The Evolution of Employee Experience Market

---

5 Evolution and Revolution of Employee Listening, Engagement, and Culture Tools

A decade ago companies such as Kenexa, Towers, AON, CEB, and Gallup did engagement surveys for a very high price. Companies bought these services, waited months for results, and primarily focused on year-to-year engagement benchmarks with somewhat limited actionable information.

In the last few years, a broad marketplace of pulse and real-time survey tools has emerged from vendors such as TinyPulse, CultureAmp, Glint, Kanjoya, Deloitte EngagePath™, Qualtrics, Energage, Great Places to Work, and even SurveyMonkey.

These tools have been transformational to businesses because they immediately enable managers to see what people are talking about, and then, using text analytics and sentiment analysis, quickly find outliers, poor management behavior, safety, theft, and other issues. (The market has gotten so hot that in the last few months Glint was acquired by LinkedIn andQualtrics was acquired by SAP. I wouldn't be surprised to see others gobbled up, too.)

Eventually every big company will have some type of internal "Glassdoor" where employees can talk about what's on their minds. One of the world's largest airlines now has implemented a feedback system through a mobile app which flight attendants use to provide feedback on airline issues, compliment their peers, and provide operational feedback in near real time. Why wouldn't every company do this?

Pulse Surveys

Annual Survey

Anonymous Feedback Tools

Integrated Reporting & Analytics Sentiment Analysis Network Analysis

Exit Interviews

Performance Check-ins

Performance Appraisals

CUSTOMER SATISFACTION

EMPLOYMENT BRAND

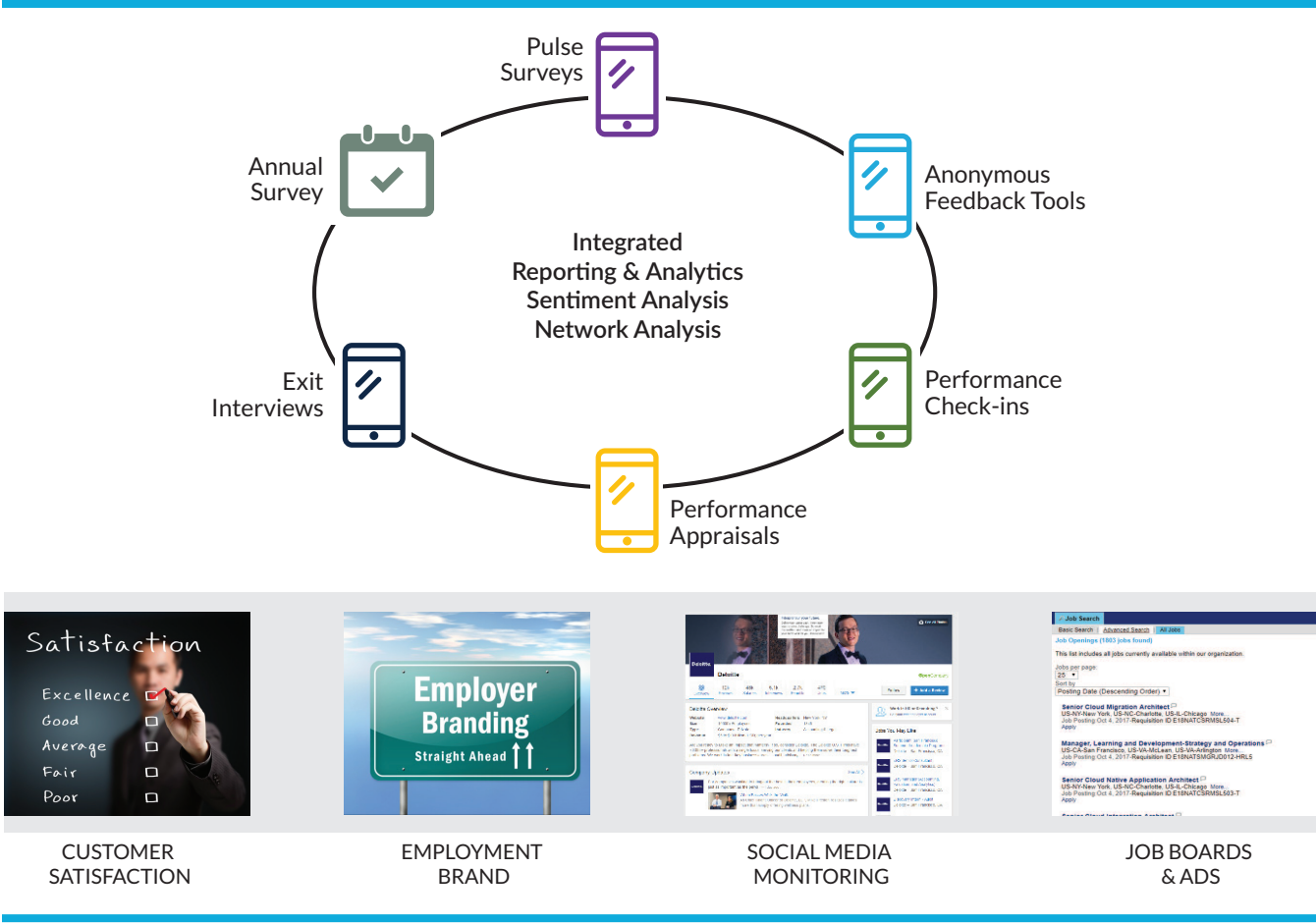SOCIAL MEDIA MONITORING

JOB BOARDS & ADS

Figure 14
Building an Enterprise Feedback Architecture

During this market transition, a few companies got left behind. Kenexa, which had old technology, was sold to IBM, which in turn shut down the operation. CEB sold off its engagement business when acquired by Gartner. And many legacy survey vendors realized they just couldn't keep up with the new technology innovations.

Meanwhile, some exciting upstarts have emerged. Glint enables real-time feedback and can integrate data from many types of surveys into one view of the enterprise. Great Places to Work now has its own tool, which is being promoted by Workday. Ultimate Software acquired Kanjoya and has made its offering even more powerful with integrated action plans that go directly to managers. A new tool called Energage brings together tens of thousands of company surveys in the Top Workplaces program. And Humu, a company I'm very excited about, is on the brink of bringing a very innovative offering to market.

Big companies such as IBM have now made employee feedback an essential part of their operations. IBM uses sensing and AI technology to monitor internal bulletin boards and communications to identify areas of risk quickly. Many financial services companies now use ONA tools such as TrustSphere or Keen to monitor conversations to look for employee stress which may result in fraud or bad behavior. Microsoft Office 365 includes an add-on tool called MyAnalytics that analyzes ones own work behavior and gives feedback to help improve your scheduling. It even recommends skipping meetings if it thinks you're wasting your time! And anonymous real-time feedback tools such as Hyphen, Blind, and Waggl are growing in popularity.

Over the next year, we will see even more advanced sensing and feedback software hit the market, much of which will be embedded into performance management tools.

But rather than focus on vendors, let me talk about the enterprise feedback architecture, which requires a holistic view of where all this employee data came from. As Figure 14 shows, there are at least six types of surveys companies use today.

Just bringing these different survey types together into an integrated picture is a challenge. (Glint is the first vendor that has introduced cross-survey analysis tools.) But a comprehensive feedback architecture must go further to collect other data being collected that directly impacts engagement – such as data related to wellbeing and productivity.

I recently met with HR leaders from a large company capturing employee email metadata (who is communicating with whom), employee badge data (location, time of day), grievances and complaints, accidents, thefts, and compliance issues – all in one large, graph database. The CHRO told me they have already identified call center productivity drivers, retention drivers, and management insights they never understood before. The company now relies on this new database to assess employee engagement, rather than periodic surveys.

I wouldn't be surprised to see vendors move in this direction quickly. Visier, Workday, SAP, ADP, and Oracle have enormous cloud-based analytics platforms now, and most are opening them up to new data for applications like this. So think about your pulse survey and engagement strategy as a multi-year

journey into employee listening, and you'll be moving in the right direction in building a comprehensive architecture.

Where is all this going? It's pretty clear that these tools are turning into intelligent, real-time data collection systems, and ultimately they will move into the flow of work. Humu, a company founded Laszlo Bock, the ex-CHRO of Google, is already piloting such a solution, and most other vendors will go in this direction[5]. We can't yet predict what SAP will do with Qualtrics, but I can predict they'll be selling an integrated solution soon, too.

Engagement 1.0	Engagement 2.0	Engagement 3.0
The top-down annual engagement survey	Pulse surveys with intelligent sensing	Intelligent nudges, Focus on everyone
Once per year. Focus on management. Benchmarked annually. Rigid questions asked year after year. Focus on benchmarking	Agile surveys as needed. Pulse on regular basis. Feedback on mobile or apps. AI-based action plans. Immediate feedback. Focus on feedback.	Many sources of data. Recommendations driven by nudge and suggestion. Open to HRMS, ONA, and other behavior data. Focus on behavior change.
Survey technology.	Web, mobile, analytics.	AI, nudges, real-time sensing.

Figure 15
Employee Engagement Market Evolves

5 https://joshbersin.com/2018/10/employee-engagement-3-0-humu-launches-nudge-engine/

6 Recruitment Leverages AI and Data Faster Than Ever

In many ways recruitment is the most important thing managers do. Yet many HR managers tell me that almost a third of their hires don't work out, despite extensive testing, assessment, and job fit analysis. The answer, of course, is an escalating war to leverage data, intelligent algorithms, and social sensing tools to make recruitment more effective.

A recent study by Bersin by Deloitte found that those companies leveraging advanced technology for recruiting achieve significant improvements in time to hire, quality of hire, and cost to hire[6].

Because the recruiting market is so big, there are vasts amounts of venture capital in this segment. I estimate that each year more than 45 million people change jobs in the U.S. alone[7]; the number is at least four to five times bigger worldwide. Each time someone changes a job there is a job search, a company search, a set of interviews and assessments, a process for job testing and job fit, a process for background checking, and an enormous amount of effort for face-to-face meetings, evaluations, job offer, and then onboarding. All these steps require data and automation, so there are hundreds of tools to consider.

Over the last two decades the recruiting automation market focused on applicant tracking systems -- tools that capture the paper or online resume and manage the end-to-end process of recruiting. The ATS market continues to be enormously important because there is so much data, workflow, and activity to manage. The companies that sell ATSs (such as ADP, Cornerstone, iCims, Greenhouse, JobVite, Lever, Oracle, SmartRecruiters, SuccessFactors, SAP, and Ultimate) still have very viable business models because every time a new company is formed, it needs an applicant tracking system.

I recently spent a few days in Japan meeting with several of the largest recruitment companies in the world, and all were either building or planning to build ATSs. Even Indeed, LinkedIn, and BizReach are in the ATS market because small and medium-sized businesses need the process management.

The big disruptions in the recruiting market come from new tools and the enormous growth of companies such as Indeed, LinkedIn, ZipRecruiter, and other job board companies. These are "Google for jobs" companies because they aggregate, analyze, and support job seekers continuously looking for the right job year after year. Their business models are incredibly profitable (every job posting pays a fee and additional services are added for company pages and analytics tools), so the more volume they attract, the more profitable they become. This is why the Japanese company Recruit, which is primarily a recruitment services firm, acquired both Indeed and Glassdoor. We can expect this kind of consolidation to continue (Stepstone has a similar strategy in Europe, for example), making it ever-easier for HR departments to find candidates in these large networks.

Websites and tools for company ratings and professional networking are also interesting additions to the market. Every company that builds a professional network of some kind eventually gets into job placement, and every company that starts building a company rating site does the same. It's just too lucrative to ignore. Today there are hundreds of companies operating specialized networks (such as 99designs, Fiverr, and UpWork) which are essentially gig recruiting systems. The company ratings sites are also expanding rapidly (Glassdoor, Fairygodboss, Comparably, Kununu, Vault, and Ratedly), and vendors are also crowdsourcing compensation as well (Payscale, Salary.com, and LinkedIn). All this data is part of the recruiting landscape and it makes the job of the talent acquisition leader more complicated every day.

The entire recruiting market is being disrupted simply by the volume and quality of startup innovations. This makes it harder and harder for HCM and ATS vendors to keep up, because there are so many interstitial tools to buy or build.

Let me briefly discuss some of the major changes.

- AI-based sourcing tools are hotter than ever. While some of the early vendors didn't survive, companies such as Entelo, TalentBin, Gloat, Orderboard, and Hiretual are helping companies find hard-to-locate candidates. This includes locating internal candidates as well, which are now one of the biggest sources for new jobs created by automation and robotics.

- AI and neurological assessments are here. Companies such as Pymetrics, HiredScore, HireVue, Imbellus, andTalview are making a huge dent in the market. SHL is coming back to the market again after being sold to CEB and then spun out from Gartner. We can expect a new war for assessment technology to emerge again.

- A new category of ATS enhancements is coming. One of the most interesting companies I've talked with is Phenom People, which has essentially built a system that combines search, matching, candidate relationship management, and recruiter analytics all in one. All these independent categories are likely to merge over time.

And since so much data is now available, software vendors are madly building new tools for employee assessment, video interviewing, and other forms of sourcing all based on AI, neurologic and psychological assessment, gamified testing, and other forms of selection. The average mid-sized to large company now has more than six different recruitment tools, with plans to replace and/or upgrade in years to come.

6 https://www.bersin.com/deloittes-bersin-identifies-key-talent-acquisition-practices-contribute-organizations-high-performance/

7 https://www.thebalancecareers.com/how-often-do-people-change-jobs-2060467

7 Contingent and Gig Work Management Becomes A Marketplace

The U.S. Bureau of Labor Statistics reports that about 40% of U.S. workers are in non-full-time work situations (contractor, part-time worker, gig worker, or contingent worker). A detailed academic report in 2016[8] reported, "A striking implication of these estimates is that all of the net employment growth in the U.S. economy from 2005 to 2015 appears to have occurred in alternative work arrangements." ADP recently shared with me the interesting fact that from 2000 to 2015, there was a 4% drop in the number of W-2s filed (annual employment tax reporting) and a 23% increase in the number of 1099s filed (used by independent contractors).

The 2017 BLS report on contingent work[9] concludes that 10% of the workforce participates in the gig economy on a regular basis. A report by the Federal Reserve states that contingent workers make up approximately one-third of the workforce[10]. A new study by BankRate shows that 40% of workers now do side hustles to make extra cash[11].

Based on more than 10,000 respondents in over 36 countries, the 2018 Deloitte Millennial study[12] concluded that 43% of all younger workers plan to leave their employers within two years (61% of GenZ workers), and 62% of young workers believe gig work is a viable alternative. Among senior leaders in the survey, 70% stated that gig workers are reasonable hiring alternatives.

It's clear that the stress people feel to increase their pay to keep up with cost of living is creating a huge market for what we now call side hustles – people doing work on the side, weekends, or evenings to supplement their income. Deloitte's research says that 14% of millennials already do this and 64% plan to do so (15% of GenZ today).

My studies of this topic lead me to a simple conclusion: Contract, contingent, and gig work is here to stay, and it is increasing steadily despite our recovery from the recession. If these statistics are even partially accurate, it can mean that more than 60 million people in the U.S. alone are participating in this type of work today. My daughter, for example, teaches yoga on evenings and weekends; many of her friends sell products online or buy and sell clothing to make money (look at the explosive growth of Poshmark!). The economy has become a workforce of scrappy, imaginative entrepreneurs, often working full time *and* part-time to make ends meet.

For HR tech, this trend means that the market for vendor management systems, contingent work systems, gig work

---

8 https://krueger.princeton.edu/sites/default/files/akrueger/files/katz_krueger_cws_-_march_29_20165.pdf

9 https://www.nytimes.com/2018/06/07/business/economy/work-gig-economy.html

10 https://www.federalreserve.gov/publications/files/2017-report-economic-wellbeing-us-households-201805.pdf

11 https://www.bankrate.com/personal-finance/smart-money/side-hustles-survey-june-2018/

12 https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html

BIGGEST FREELANCE WEBSITES	SIZE	TOTAL TRANSACTION VOLUME	HEADQUARTERS	GLOBAL WEB RANKING
Freelancer.com	30 million users in 247 countries	$588 million+	Australia	#1337
Upwork.com (formerly Elance-oDesk)	14 million freelancers in 180 countries*	$1 billion∞	United States	#488
Fiverr	Millions of creatives in 190 countries	$350-400 million	Israel	#405
99Designs.com	Tens of thousands of designers	$200-300 million	Australia	#4838

Figure 16
Largest Freelance Websites

* https://www.freelancer.com/about
+ https://www.freelancer.com/about/investor-pdf.php?id=58254758&name=FLN%202017%20Financial%20Report%20v14%20FINAL
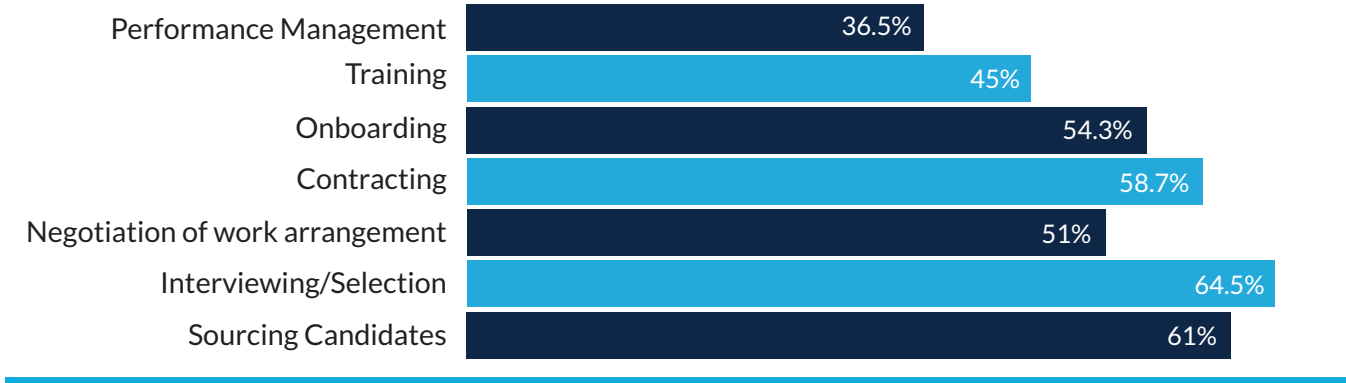∞ https://www.prnewswire.com/news-releases/snagajob-appoints-former-upwork-ceo-to-board-of-directors-300417689.html

---

Figure 17
HR Involvement in Gig Workforce

platforms, and crowd work platforms will explode. ADP acquired WorkMarket this year, SAP acquired FieldGlass last year, and new vendors such as Fuel50 (FuelGig platform), RallyTeam (acquired by Workday) and others will soon be bringing new products to this market.

There are quite a few categories of contingent work platforms today. Vendor management systems help companies manage vendor contracts; more than 75% of companies manage contractors through the purchasing department, not the HR department. Contingent work systems such as WorkMarket help companies set up gig and contingent pools. Time and labor systems (SAP, Oracle, and Workday) let companies set up part-time hourly workers, and many new gig management systems are coming. The company Legion[13], for example, is building an amazing new tool to manage hourly work schedules across retailers, and it will likely become a contract or gig platform of its own. Companies such as WorkGig focus on part-time temporary hourly projects.

In our research among HR organizations, we found that only 8% of respondents believe their companies are ready to manage gig or contract workers well, yet 65% now see it as critical or very important and 41% say gig and contract workers are a significant part of their workforce. Why is this such a challenge? Companies simply do not have the right tools and platforms to do this well.

Consider the data in Figure 17, captured from the 2018 Deloitte Human Capital Trends report. Outside of sourcing, interviewing, and selecting candidates, HR is involved in this workforce only about half the time or less. This "shadow workforce" is simply not being managed well, so there will be an enormous growth in tools to make this easier.

We also see challenges with the management of companies' internal gig work. I estimate that approximately two-thirds of companies want to increase internal talent mobility to improve leadership skills, give people more development opportunities, and increase the agility of their teams. The platforms and tools to manage such activities are very hard to find.

Oracle, SAP, Workday, and ADP all have some features to help companies build projects or teams in their platforms, but none have fully built out a human capital management system that understands or optimizes a world of work where people move from project to project on a regular basis. The product Standout by ADP does this for performance management (as does BetterWorks and a few other tools), and Fuel50 does this for developmental assignments, but no real solutions exist yet for internal gig work management. When such a solution becomes available, I believe it will be tremendously important and popular in the marketplace.

---

13 https://techcrunch.com/2017/09/27/legion-raises-10-5m-to-roll-out-an-automated-employee-scheduling-tool/

8 Next Gen Performance Management Arrives

I've been writing about performance management for over 12 years, and it continues to be a highly dynamic market. Today there are at least 20 well-funded new vendors building tools for continuous performance management, while the large HCM vendors (SuccessFactors, Oracle, Workday) are all evolving their platforms as well.

Some performance management vendors focus on agile goals and goal transparency; others focus on social recognition and rewards; still others focus on feedback and check-ins; and some focus on skills assessment and coaching. Each of these vendors has started in a different space, so they each have different strengths.

From my own personal research, I see the major new players as BetterWorks, Fifteen Five, Fuel50, Impraise, HighGround, Glint, Lattice, Reflektiv, 7-Geese, Small Improvements, StandOut, and TinyPulse. There are many more tools on the market, including those developed by all the HCM vendors, but these are the vendors with the most innovative new approaches.

In the HCM market, SuccessFactors has a continuous performance management offering now being used by more than 200 companies. Oracle has introduced a more agile performance system, and Workday has finally released its agile performance tools. Workday has taken the processes it uses internally (focused on contribution, capabilities, career, compensation, and connections) and is now showing companies how to implement a similar model. Workday is also reselling benchmark data from Great Places to Work to let employees assess their companies and their managers against benchmarks, creating management feedback in the process. While the HCM vendors are moving fast into continuous performance management, the third-party market is very advanced so I think we will see a lot of multi-vendor solutions for the next few years.

Smaller organizations can easily implement one of these systems and find them very complementary with their core HR platforms. But large organizations grapple with a quandary -- how do we implement a continuous performance management system that is goal-oriented for sales professionals, highly developmental for leaders and managers, very collaborative for consultants and other service workers, and simple and easy to use for line workers? No one system is always best for all categories of workers, so most bigger organizations are evaluating multiple options.

Deloitte's Bersin™ analysts have written many case studies of companies such as Patagonia, New York Life, Adobe, and even Deloitte itself discussing implementations of such systems. Most of these companies have purchased one or more vendor products and then often build integration tools around them. My recommendation to any company evaluating these vendors is to do a strategy workshop first. Before rushing to buy, sit down with your business leadership and walk through your philosophy of performance management, talk about how frequently you want people to check-in with managers, how transparent and aligned you want goals to be, and how important the development, coaching, and evaluation process will be. This will be a multi-day experience, but you'll come out of it with some philosophical decisions that you can then use to map against vendors.

Nearly every company that implements a more continuous process has positive results. Just creating a more regular, transparent process for performance management and evaluation is a good thing, even though it always takes time to train managers and employees to feel comfortable giving and receiving feedback.

Additionally, these tools and related practices give companies tremendously better data, insights, and transparency into their entire talent processes. Employees receive feedback from multiple people; their check-ins give them and managers better reflection on why they did or did not receive the ratings or raises expected. Features for social recognition bring much new data to the process, and tools that automatically collect development feedback are immensely valuable. Almost all executives tell me these tools increase management communication and also give HR leaders a much better sense of the strengths and weaknesses of managers and employees.

Continuous performance management is disruptive to the HR technology market because the process is not hierarchical or linear like most systems were designed to automate. It is a continuous, looping process that might take place in teams, departments, or across divisions. Data must be aggregated by business hierarchy as well as by manager, team, and often function across projects. These new systems also capture organizational network data to determine who is giving feedback to whom and how feedback patterns vary. They also often have pulse surveys built-in, so one can see which manager is driving higher levels of engagement and which manager may be more biased or discriminatory, while enabling users to understand more about the nature of goals and feedback and the types of development plans people are implementing.

One company I know did a feedback analysis and found that employees with more frequent check-ins were statistically
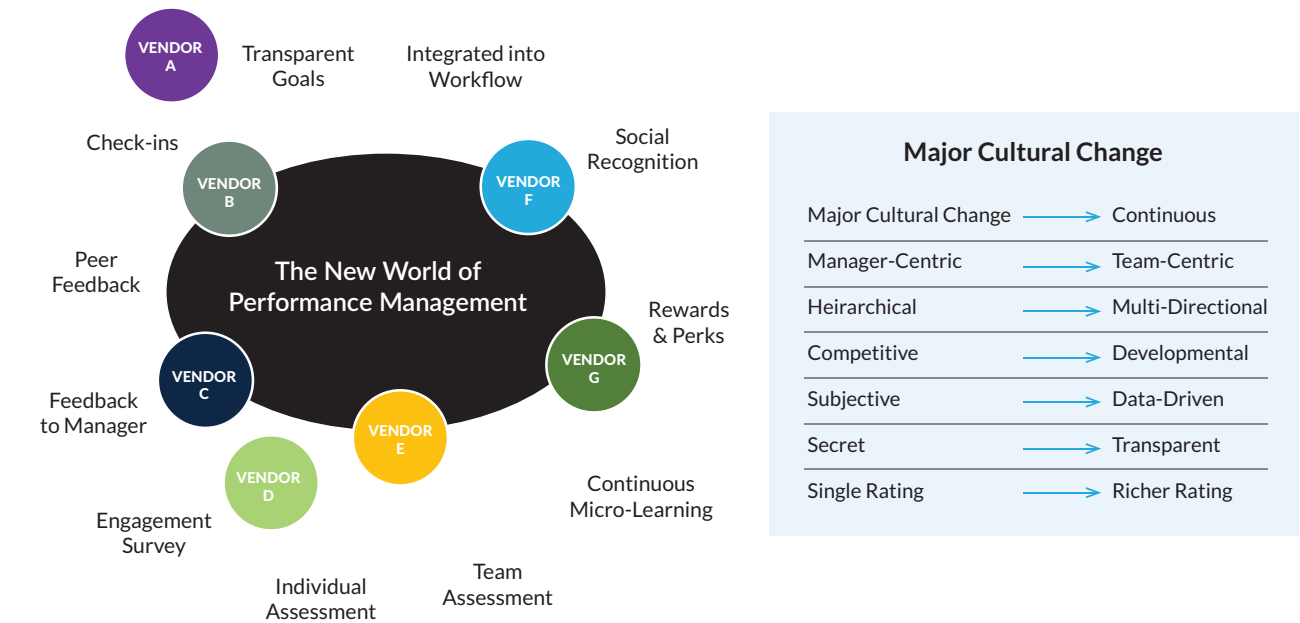
Figure 18
Next-Generation Performance Tools

Major Cultural Change		
Major Cultural Change	→	Continuous
Manager-Centric	→	Team-Centric
Heirarchical	→	Multi-Directional
Competitive	→	Developmental
Subjective	→	Data-Driven
Secret	→	Transparent
Single Rating	→	Richer Rating

Figure 19
The Continuous Performance Management Process
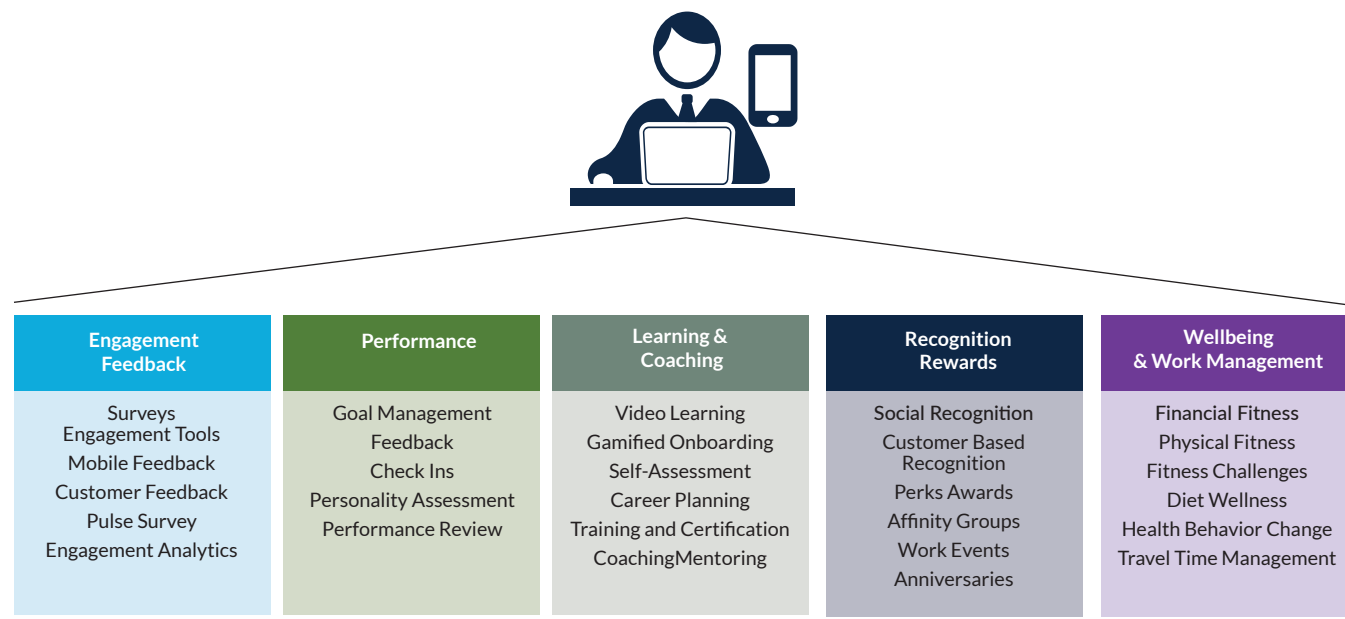
Figure 20
Convergence of Talent Applications Ahead

Engagement Feedback	Performance	Learning & Coaching	Recognition Rewards	Wellbeing & Work Management
Surveys Engagement Tools Mobile Feedback Customer Feedback Pulse Survey Engagement Analytics	Goal Management Feedback Check Ins Personality Assessment Performance Review	Video Learning Gamified Onboarding Self-Assessment Career Planning Training and Certification CoachingMentoring	Social Recognition Customer Based Recognition Perks Awards Affinity Groups Work Events Anniversaries	Financial Fitness Physical Fitness Fitness Challenges Diet Wellness Health Behavior Change Travel Time Management

higher performers. These systems help managers see when an employee is checked out and even identify when a flight risk is starting to develop. All this is far more advanced than the old end-of- year forms or cascading goals developed by talent management vendors in the early 2000s.

Ultimately these systems have to focus on business performance, not just individual goals. The Taj Hotels, one of the most highly esteemed hospitality companies in the world, recently changed its performance process to focus every employee on his or her team's success. There are no more individual reviews for Taj hotel employees. Everyone is evaluated based on the success of the local property. The Taj CHRO told me the company has seen tremendous increases in engagement and alignment, to say nothing of the benefits to customers. Think about a Taj hotel employee who sees a broken light or spill in the hotel lobby. Rather than delegate the fix to another person, every employee is motivated to jump in and fix the problem. *This* is what we want performance management to do!

Finally, as I discussed earlier, these tools must come together with career management, recognition, and other

feedback tools. It has always bothered me that performance management software was developed as if it is a standalone application. In the real world, the only reason to do performance management is to help people improve, so we need these systems to take a more holistic view – which in turn means there will likely be acquisitions and lots of consolidation again, just like we saw in the last wave.

Already we've seen Glint, TinyPulse, and Ultimate Software get into the engagement and feedback market. YouveEarnedIt merged with HighGround, bringing together recognition, rewards, and feedback. Companies such as BetterWorks and Reflektiv are working on more advanced analytics and development planning systems. And Fuel50, the leading career management platform, is now getting into goal management, coaching, and gig work management to help companies build better development experiences.

In the next two years, I believe the winners will acquire some of the tangential vendors on this chart, and we will see this new 21st century talent platform market take shape.

9 The Reinvention of the Learning Technology Market

Skills, career development, and learning have become top of mind for business leaders. This year's Conference Board CEO survey found that CEOs are more worried about the skills and capabilities of their workforces than anything else. And the problem has become a growth blocker – many companies simply cannot find the talented people they need.

I met with the CHRO of one of the world's largest auto companies this Fall and he told me his company expects to be short 50,000 mechanical engineers over the next ten years. In Japan, where the company is headquartered, there are no more such engineers to hire. So he is looking at building an entirely new engineering facility in Vietnam. I suggested to him that he build an engineering college of his own, a trend I'm seeing in many large companies.

My article "Learning in the Flow of Work[14]" discusses why we are in a new era of corporate learning technology. While companies have purchased more than $8 billion of LMS technology over the last decade, the LMS is no longer the center of corporate learning. As I like to explain, the LMS went
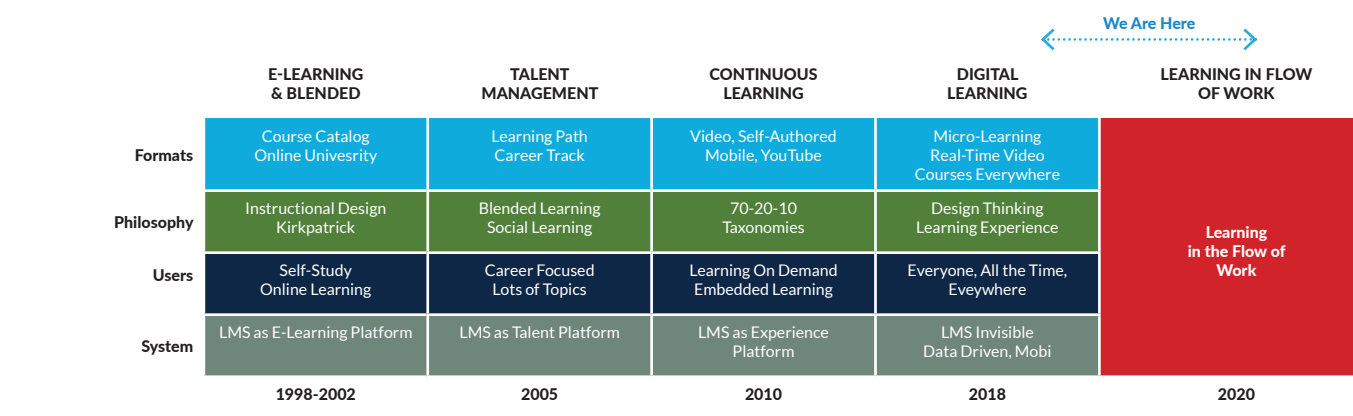
14 https://joshbersin.com/2018/06/a-new-paradigm-for-corporate-training-learning-in-the-flow-of-work/

the way of the mainframe. It has not disappeared, but it's now in the basement doing the things it does well. It processes compliance training, tracks and stores learning completion data, runs business rules and management approvals, and handles certification, customer training paths, and revenue generating training. In other words, it's like a learning and training ERP system.

Employees, on the other hand, now have the opportunity to use a new range of systems, as categorized in Figure 22.

1. *Learning Experience Platforms:* This is a market segment I identified a few years ago, and it represents tools such as Edcast, Degreed, and Fuse along with new entrants from Cornerstone, SkillSoft, and Instructure. These are systems that aggregate content from any source (including internally developed content); they use machine learning to recommend content to each individual; they let L&D professionals build learning paths; and they try to assess the skills of each individual through their activities.

In some ways they are designed to be in-the-flow systems, but in reality, they are more YouTube- or Netflix-like systems that are easy and fun to use and highly engaging. Where they fall short today is in the context of learning and work flow. They are not good for progressive learning experiences; they are often used as portals in front of the LMS; and they are not yet micro-learning oriented. That said, they're explosive,

We Are Here

	E-LEARNING & BLENDED	TALENT MANAGEMENT	CONTINUOUS LEARNING	DIGITAL LEARNING	LEARNING IN FLOW OF WORK
Formats	Course Catalog Online University	Learning Path Career Track	Video, Self-Authored Mobile, YouTube	Micro-Learning Real-Time Video Courses Everywhere	Learning in the Flow of Work
Philosophy	Instructional Design Kirkpatrick	Blended Learning Social Learning	70-20-10 Taxonomies	Design Thinking Learning Experience	
Users	Self-Study Online Learning	Career Focused Lots of Topics	Learning On Demand Embedded Learning	Everyone, All the Time, Eveywhere	
System	LMS as E-Learning Platform	LMS as Talent Platform	LMS as Experience Platform	LMS Invisible Data Driven, Mobi	
	1998-2002	2005	2010	2018	2020

Figure 21
How Corporate Training Has Evolved

Figure 22 — New Learning Tech Market Segments Arrive

1. Learning Experience Platforms
Degreed, EdCast, Path Gather
Jam, Fuse, Percipio, Cornerstone, Valamis, Tribridge

2. Program Delivery Platforms
Intrepid (Vitalsource), NovoEd
EdX, Everwise, OpenEdX, Blackboard, Instructure

3. Micro-Learning Platforms (adaptive)
Axonify, Area9, Grovo, Qstream, Practice, Rehearsal, Jubi, Wisetail, Mindtickle, Trivie, Echo, EduMe

4. Assessment, VR, Development Tools
Video authoring, intelligent assessment, spaced learning, gaming, virtual reality, collaboration, simulations

5. Content Libraries
LinkedIn, Udacity, Coursera, EdX, Udemy, Pluralsight, SkillSoft, CrossKnowledge

6. Digital Adoption and Workflow Learning Tools
WalkMe, EnableNow, Microsoft Teams, Slack, GSuite

7. LMS and Content Platforms
Traditional: Cornerstone, Saba, SuccessFactors, SumTotal
Modernized: Workday, Oracle, SAP, Bridge, D2L, Litmos, Intellum, Docebo

8. Learning Record Store
GrassBlade, Learning Locker, Saltbox, Yet, Watershed

Figure 22
New Learning Tech Market Segments Arrive

highly valuable to corporate learning, and represent a new paradigm past the traditional LMS – beyond the course catalog you may say.

They are also proven. HP, Bank of America, Mastercard, Visa, Deloitte, and hundreds of other companies are using these systems now, making these vendors more like LMS companies every day. This new paradigm has encouraged Workday and Oracle to build front-ends that behave like these systems. SuccessFactors JAM can also perform this function. So this niche category, which started as an experiment, has shifted the entire market and forced every learning platform company to adapt.

2. *Program Platforms:* While we'd all like to have a YouTube system at work, there are times when we need a MOOC-like platform for learning. A MOOC, unlike a single video course, steps you through an entire curriculum and actually delivers you at a point where you have truly learned a new body of knowledge. Sales training, leadership development, onboarding, supervisory training, and engineering are such domains.

I have been working with O'Reilly, a leader in technical publication and training, and executives shared with me the data from the company's vast offering of technical education and books. It has found that 52% of all activity is macro-learning oriented and 48% is micro-learning oriented. So this is a big space. Many LMS systems perform this functionality, including those cited in Figure 22.

Hot vendors in this market include CrossKnowledge, Coorpacademy, Nomadic Learning, Intrepid, Novoed and others that focus on delivering a total content experience (including content, community, gamification, assessment, and more). I am beginning to believe that the LXP market, as exciting as it has been, will be replaced by these more integrated platforms, as companies now realize that just "finding content" is not enough. We also need to deliver an integrated learning experience.

3. *Micro-learning Platforms:* Companies such as Axonify, Grovo, and to some degree Fuse, Smartup.io, and Filtered fit here. These companies are building adaptive learning paths that deliver relevant and appropriate learning based on one's learning history, job, or some other work-related activity. I believe this will be explosive and fundamental going forward.

Axonify, for example, can deliver safety training to a worker in a prescribed and intelligent path, in five-minute chunks each day, and then ask the learner how confident he or she feels in the material. Through its machine learning algorithms, the system can give employees just enough learning to finish the goal. This is truly learning in the flow of

Micro-Learning	Macro-Learning
I need help now.	*I want to learn something new.*
• 2 minutes or less • Topic or problem based Search by asking a question • Video or text • Indexed and searchable • Content rated for quality and utility	• Several hours or days • Definitions, concepts, principles, and practice • Exercises graded by others • People to talk with, learn from • Coaching and support needed
Is the content useful and accurate?	Is the author authoritative and educational?
Videos, articles, code samples, tools	Courses, classes, MOOCs, programs

Figure 23
Explosive Growth In MicroLearning

work and it demands quite a smart platform.
Most vendors are inching in this direction. Skillsoft and Edcast have browser and Slack plugins to deliver appropriate learning. WalkMe and EnableNow can deliver context-sensitive learning for software and computer applications. Instructure is building functionality like this. So look for this adaptive, prescriptive learning functionality in future vendor searches.

4. *Assessment, VR, and Virtual Learning:* This space is amazingly exciting. For instance, STRIVR is a vendor that has developed a complete development and delivery solution for 3D-, video-, and audio-based virtual learning that will blow your mind. Wal-Mart, United Rentals, and JetBlue all now use the system for all sorts of high-risk, high-cost, high-value training applications. Think about all the situations in your company in which an employee must perform a high-impact task that is difficult to simulate. VR can be the solution. Companies are even using it for diversity training to show what feels like to be a diverse candidate.

5. Learning Content: This market segment is vast and always changing. LinkedIn Learning has become a major player. Skillsoft, Udemy, CrossKnowledge, O'Reilly, Pluralsight, Harvard, and hundreds of smaller vertical players are growing. In many ways the LXP market is enabling and freeing up companies to buy more content, and you now have much better information about what people are using. All my work in L&D has shown that a very small percent of content is used, but in a large company you do want a large library to meet everyone's needs. The problem with many libraries is ease of access, and, of course, the instructional design itself.

I'm a big fan of buying content from vertical specialists because they bring amazing depth of IP. So if you buy an LXP or other open platform, you then have the opportunity to pick the best content and make it easy to find. (Note that Cornerstone has now come to this conclusion. The company is selling and promoting content and just acquired Grovo to build more content of its own.)

6. *Digital Adoption and Workflow Learning:* Leaders in this category are WalkMe and EnableNow; other vendors will soon offer plugins to Microsoft Teams, Slack, Workplace by Facebook. This is an amazing technology base and there are probably 100 or more tools that let you add interactive help, inline video, and other context-sensitive content to a particular job role. Like the LXP segment, I think this is an area where every company needs some type of solution.

7. *Learning Management Systems.* The vendors shown in the chart are all well run, rapidly advancing companies and their products are growing in capability. The core features of an LMS -- course administration, tracking, compliance processing, business rules, and revenue-generating learning – are all important. I don't see any huge changes in the market with the exception of Workday. Newer vendors such as Instructure and Docebo are putting a lot of pressure on incumbents such as Saba and SumTotal, but all are advancing

their platforms rapidly. You must do an RFP with specific use cases to evaluate these products well because they are all changing so quickly.

8. *Learning Record Store:* This is a category of tool that stores all learning-related and activity data without an LMS. More and more companies are buying these because they believe the lives of their LMSs are limited. They work well and give you real-time analytics we never had before.

The big changes in this market segment are many. Workday is working hard on its LMS, and over the coming years is likely to build out a fully functional system. Today the system is an amazing video learning and content management platform, so I think most Workday customers will buy it and use it for micro-learning, onboarding, and many other forms of communication.

Products such as GuideSpark, which are designed entirely for the complex world of employee communications, are somewhat similar. GuideSpark and Workday both use campaigns to communicate with employees (similar to what CRM systems do), allowing users to push content to employees in a very prescriptive or activity-driven way.

SAP continues to build out a wide variety of learning solutions, including EnableNow, Jam, and its LMS. The company has a vast engineering team working on LXP interfaces, new mobile interfaces, and action and embedded learning, so I don't count them out. But you have to figure out which pieces you need, because the company has such a broad range of offerings.

I also believe systems that enable real-time practice (Practice by Instructure, Rehearsal, and similar functionality from Desire2Learn) are vital and offer value.

AI-based systems are also here. Filtered, which creates an AI-based chatbots for learning, has tremendous potential. Volley and Jane.ai both read documentation and develop learning without the need for human instructional design. I know of a startup that is building context-specific learning directly from email traffic and communication patterns. So we can expect some very smart systems to appear next year.

With all this "learning in the flow" technology now available, you have to flip your L&D team into an agile, design-thinking operation. We can't just buy and publish content to get value.

We need to architect systems that enable all these new technologies and apply them directly to job role and business problems.

I find the most advanced L&D teams now partner directly with their business counterparts such as those in sales and engineering to build highly specific learning environments. The L&D team at Tesla, for example, worked with its sales leadership to help re-engineer its entire sales organization – changing roles from product specialists to integrated sales teams, with a much stronger focus on the sales process and not just the product. This transformational effort was a real consulting project, teaming L&D with sales leadership. That's the future of L&D.

Also, I do believe companies should consider their own academies to build skills internally. For instance, Capital One now has digital skills academies in which subject matter experts take a teaching and leadership role to build employee skills faster. To me, this is a real solution to the skills crisis.

I'm working on research with Pluralsight and General Assembly now to explore this further. Already we've seen a six-fold reduction in cost for internal development versus external hiring. So don't be afraid to bring this kind of project forward.

10 Wellbeing Becomes an Expansive Market

One of the most exciting and interesting developments is the explosive growth in the corporate wellbeing market. The Global Wellness Institute[15] assessed the market at $43 billion in 2017, and it is growing by more than 6% per year. In a recent survey completed by Wellable, more than 35% of companies are investing in this segment. What does corporate wellbeing include? The list continues to grow, and companies are shifting from wellbeing as a health benefit to wellbeing as a performance improvement strategy.

Almost two-thirds of employees cite overwork and stress as significant challenges to work productivity. Therefore, employers are being asked to deliver a full range of service to help employees stay fit, rested, focused, and healthy.

The areas with the most growth today are financial wellbeing (61% of companies are increasing spending in this area), mental health (65% are increasing spending), mindfulness and stress management (57% are increasing spending), and telemedicine or remote care (64% are increasing spending). Each of these broad areas is spawning dozens of technology and service providers.

When it comes to finances, more and more evidence shows that workers need help. Vendors such as Best Money Moves, EduKate, Sum180, Financial Finesse, Learnvest, and Daily pay

are helping to fit this need with education, coaching, individual assessment, loans, and advisory support.

Because earnings have not kept up with inflation, many employees are also asking for more frequent pay, so a set of new vendors has emerged to help companies pay employees weekly, daily, or even based on work completion. ADP recently acquired Global Cash Card[16], a company that provides cash awards and many options for digital payments through gifts, cash, and other benefits. This market is exploding. Vendors such as WePay, BlueFin, Achievers, and Fond now offer employers a wide range of instant pay and gift payment options, essentially reinventing the traditional payroll and compensation analysis tools. The two biggest payroll vendors, ADP and SAP, are both re-designing their core payroll systems to facilitate real-time pay.

In the areas of mental health, mindfulness, and stress management, there are literally hundreds of providers who offer app-based coaching, training, event management, mediation support, and more. Vendors such as Mequilibrium, Whil, as well as platform companies such as VirginPulse, Limeade, United Health Group (Rally), and Provant offer behavioral change tools to help people slow down, sleep better, meditate, and focus. (There are 751 wellness tech vendors listed in the CBInsights directory.) Also in this market are hundreds of training providers, and many are now nearly free. Aided wellbeing technology will explode in the coming years as AI-powered tools start to give us hints and nudges that will make us better at work. Humu and Microsoft are both

PHYSICAL WELLBEING	MENTAL WELLBEING	FINANCIAL WELLBEING	FAMILY WELLBEING	SOCIAL WELLBEING
Fitness subsidy and in-house programs, healthy foods and diet coaching, health coaching, health risk assessment, preventive care, workplace exercise and fitness	Counseling, assessment, mindfulness, yoga, sleep training, pet support and pets in the workplace, employee assistance programs, stress management, concierge services, sabbaticals	Consulting, wealth planning, investment advice, legal counseling, tuition reimbursement, discount programs, debt planning, low interest loans, training, real-time pay	Dependent care, maternity management, paternal and maternal leave, egg harvesting, adoption support, counseling	Employee resource groups, sports teams, competitions, social groups, volunteer days off, volunteer sabbaticals, reimbursement for social work, community activities

Figure 24
Wellbeing Becomes an Expansive Market

Figure 25
Major Gaps in Financial Wellness, *Source: The TIA Institute – GFLEC Personal Finance Index*

Financial needs
Loans or cash
Disease
Injuries
Stress
Diet, exercise
Personal development
Psychological support
Family Support

Intelligent Wellbeing Matching and Coaching

Physical networks
Financial advisors
Medical specialists
Trainers
Yoga Mindfulness teachers
Fitness coaches
Personal coaches
Pyschologists
Professional Coaches

Figure 26
Wellbeing Matching Opportunities

Figure 27
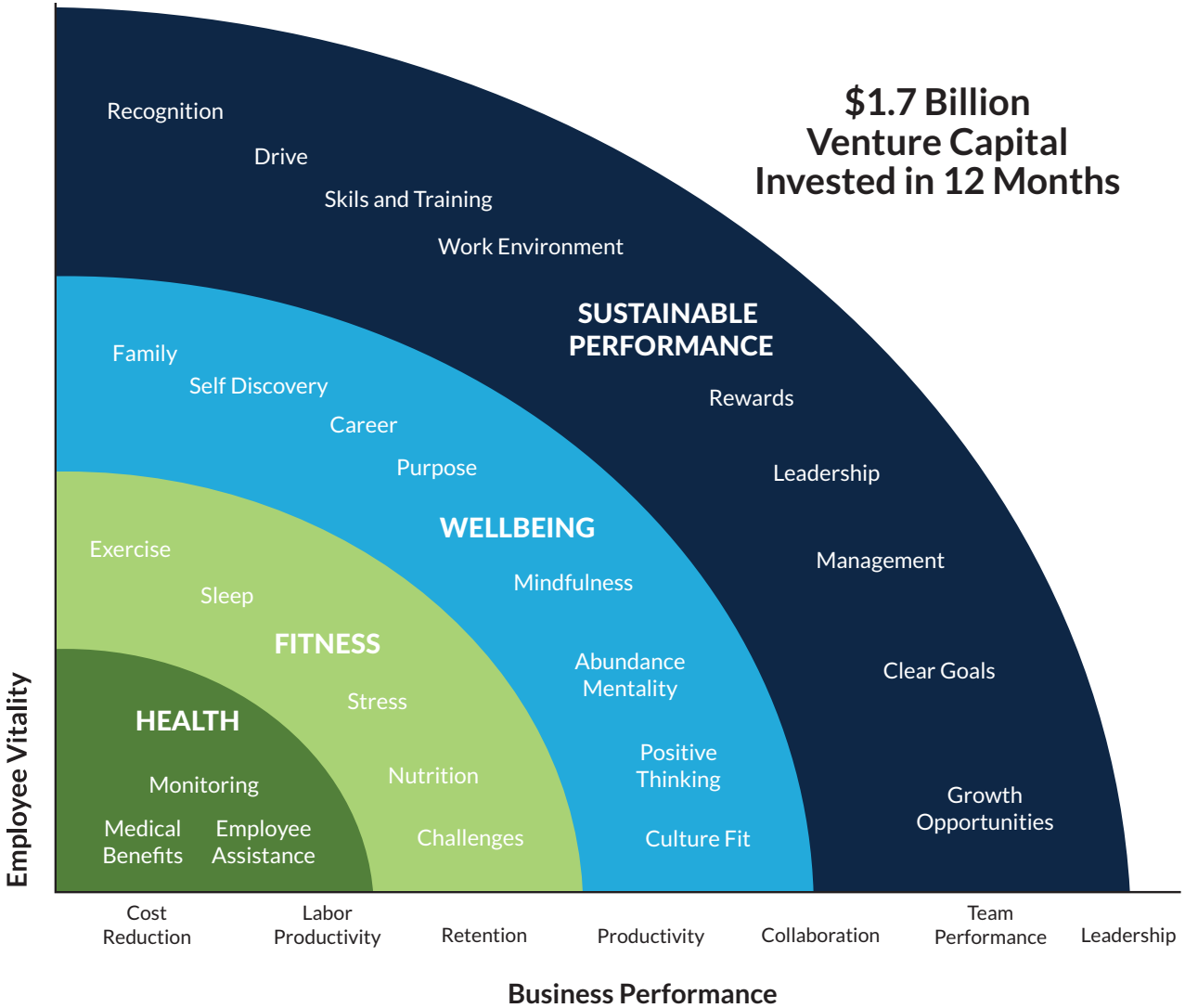From Health to Wellbeing to Performance

developing tools to monitor work behavior and give employees tips to make us happier and more focused at work.

In telemedicine and remote care and coaching, there is a new set of Uber-like products to help us find coaches and mental and physical health. These vendors include BetterUp, SpringHealth, and Everwise. BetterUp is an AI-based coaching platform that diagnoses an employee's performance or work-related issues and connects the individual to one of thousands of coaches. SpringHealth does the same for psychological support. Comcast and others are now funding and building companies such as Brightside, which helps people manage their financial fitness, and Spring Health, which helps people find the right psychologist

Intelligent Matching Networks

One of the biggest opportunities in wellbeing is the cloud. In every part of the wellbeing framework, there are people who need to be matched to individuals or companies that provide services or expertise. Companies such as Betterup and Spring Health, which build AI-based assessments and develop a network of providers, can quickly and intelligently match employees with the services they need.

These types of networks are typically acquired and used by healthcare providers. But as companies get more and more frustrated with the high cost of insurance, many are going directly. Most of these vendors now sell directly to corporate

HR managers. I can see a scenario in which smart HCM vendors such as Sequoia build interfaces to these systems so they can provide one-stop shopping to their customers.

The Shift from Wellbeing to Performance

Given all this focus on wellbeing, one has to ask whether companies will pay for all these benefits? I think the answer is yes because we are moving from a focus on health and fitness to a new focus on employee engagement, productivity, and performance. So over time I believe these tools will become

part of a new performance and productivity suite.

The chart illustrates the evolution of this market. Just as HighGround was acquired this year by YouEarnedIt,a social recognition company, one can envision a market in which wellbeing tools become integrated with goal and performance management systems, eventually becoming part of the 21st century management platform. Today the two leading platform players in this space are VirginPulse, which has acquired multiple companies over the past year, and Limeade, which is a very well-run, steadily growing company with successful clients. Both offer behavioral change platforms that collect
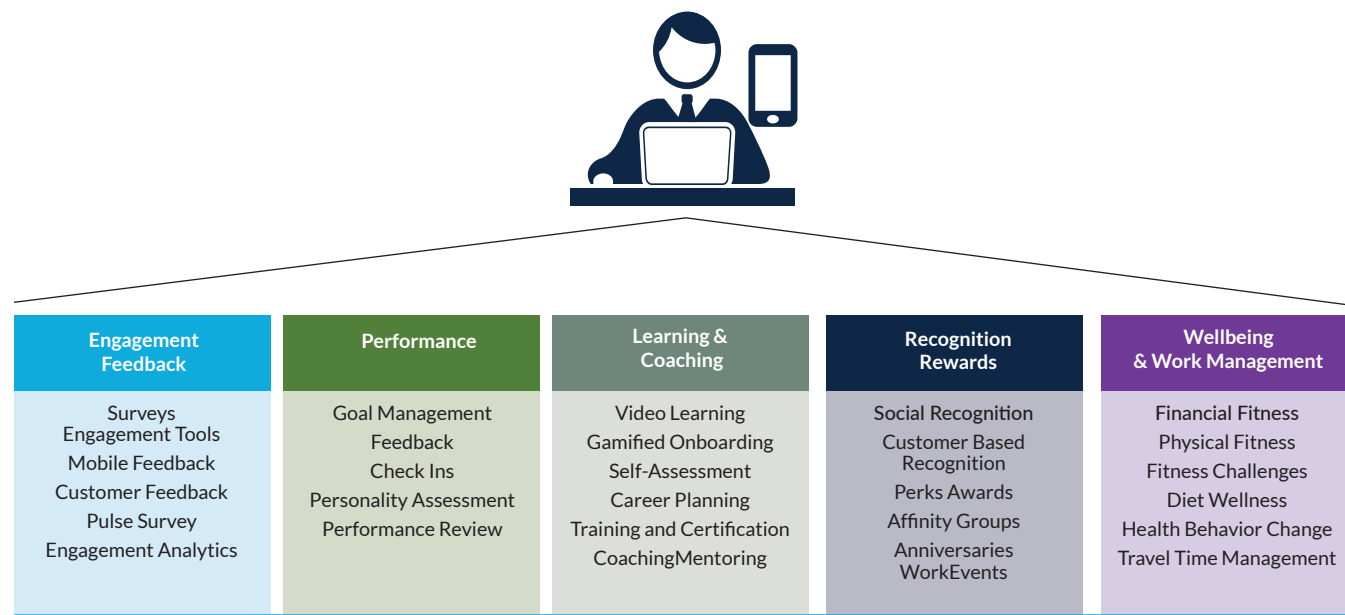
Figure 28
Convergence of Talent Applications Ahead

Engagement Feedback	Performance	Learning & Coaching	Recognition Rewards	Wellbeing & Work Management
Surveys	Goal Management	Video Learning	Social Recognition	Financial Fitness
Engagement Tools	Feedback	Gamified Onboarding	Customer Based	Physical Fitness
Mobile Feedback	Check Ins	Self-Assessment	Recognition	Fitness Challenges
Customer Feedback	Personality Assessment	Career Planning	Perks Awards	Diet Wellness
Pulse Survey	Performance Review	Training and Certification	Affinity Groups	Health Behavior Change
Engagement Analytics		CoachingMentoring	Anniversaries WorkEvents	Travel Time Management

enormous amounts of employee data and can be used to analyze performance and productivity, point out accident and health risks, and give employees a very useful tool to make their work lives healthier.

Oracle clearly sees this coming and has been investing in a wellbeing platform and tools for employee competitions and contests in its core HCM platform. SuccessFactors has done the same by offering a variety of wellbeing training programs in its core platform and recently launched a new platform with Thrive Global. Workday has provided API integrations to VirginPulse and other vendors.

One of the tricky issues with these tools is the confidentiality of data. While most of us would love to have a work-provided platform to help us lose weight, reduce stress, and improve our sense of vitality at work, we are all very nervous about our employer knowing how much we sleep, what mental or physical problems we face, and how we struggle to focus or stay happy at work. A U.K. study found that more than half of employees fear such workplace monitoring[17] and almost three-quarters do not approve of an employer monitoring of mood or

physical location. These new tools give employers an enormous amount of private information about employees, driving the need for a strong and well-managed analytics team to care for the data. We also have to be transparent about what data we capture and what we plan to do with it.

It's very clear to me that over the next several years many of these markets will start to come together. Already the domains of stress, financial health, and coaching are converging as studies show that one of the biggest causes of stress at work is a lack of financial security. Think about how these wellbeing topics are also impacted by management behavior, our ability to learn and grow, and the way we understand and achieve our work-related goals. All of these areas overlap, so over time HR departments will demand that they can be addressed in a holistic way.

Sequoia, a mid-sized benefits and employee services company serving the high-tech market in California, understands this well. Sequoia has learned that the fastest growing companies, many of which are technology-based and highly dependent on intellectual property, want a wider and wider range of employee services to succeed. They don't just want an easy-

to-use HR platform; they want wellbeing, education, and development services, too.

 As the job market continues to grow and employees' expectations continue to increase, HR departments will look for more integrated experience platforms – those that can bring together traditional HR transactions with wellbeing, benefits, development, coaching, and financial support. I can't predict how this market will evolve yet, but one could see these kinds of integrated benefits companies being acquired by the big ERP vendors.

11 Augmented Analytics, AI, ONA, and Feedback Systems

I can't write about technology without explicitly discussing the world of analytics, AI, and cognitive processing. People analytics continues to be a big topic in the HR world and is now the fastest growing sub-domain of the HR profession (25% of companies are hiring employees into this role[18]).

The technologies are making analytics easier than ever, but the number of data elements and scope of problems we're trying to analyze is expanding at the same time – continually creating new challenges.

The question to ask is, "Are we organizing and using this data to improve performance, engagement, and wellbeing?" Typically not.

18 Sierra-Cedar 2018-2019 Systems Survey

As illustrated in Figure 29, there are literally hundreds of data elements we can analyze in the analytics or talent intelligence system. Luckily tools are making data collection and analysis easier. Vendors such as Visier and OneModel specialize in bringing data together and both are growing rapidly. Many of the large HCM vendors, most notably

Workday, have also updated their analytics solutions to make this easier.

Workday's Prism system, built on the Platfora application, gives companies a Hadoop-powered data lake more or less out of the box. This summer, Workday also introduced a major upgrade to its analytics suite and introduced its data-as-a-service benchmarking. While benchmarking is a difficult and often imperfect exercise in HR, this offering gives Workday customers an out-of-the-box way to compare talent mobility, retention, diversity, and other talent measures against other Workday customers. The company also announced the
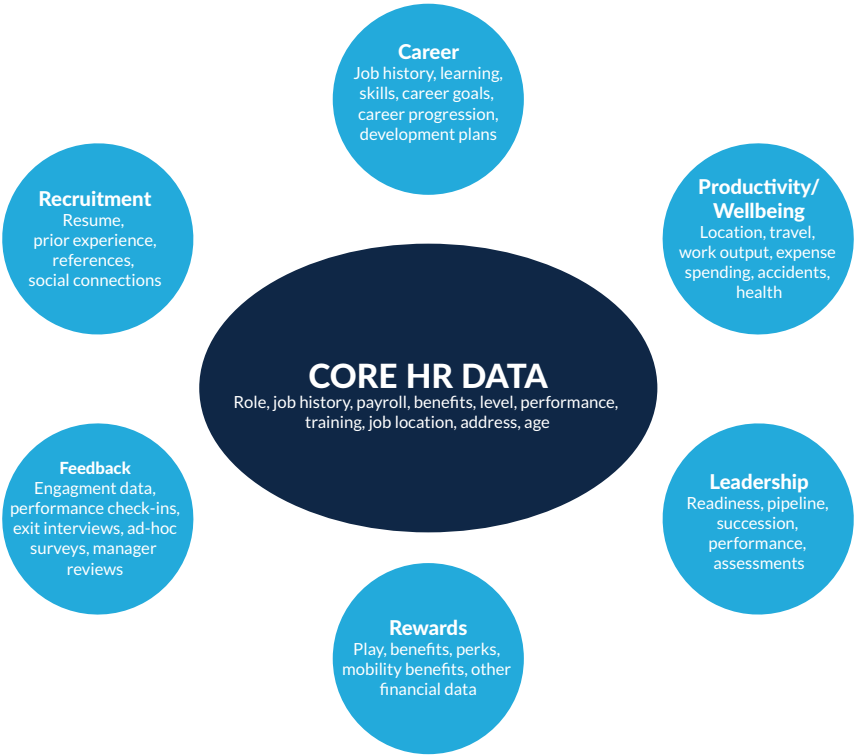
acquisition of Stories.bi[19], which provides AI-based "stories" constructed from data, automated by software.

I think this particular acquisition is significant because it totally changes the paradigm for analytics in HR. For years we've had to build data warehouses, run reports, and decide what kinds of analysis to run. Stories.bi, which is being integrated into the Workday platform, automatically looks at all types of system data and identifies outliers, changes, and trends. It then presents this to you in a conversational interface. When applied to HCM, Stories.bi can discover issues such as what areas have highest turnover and in what functional areas diversity measures are lagging.

19 https://blogs.workday.com/workday-advances-augmented-analytics-stories-bi-acquisition/

This entire technology area, called augmented analytics[20], is now becoming a big market, and I think this technology can be the most revolutionary change in analytics in a long time. AI-based tools can find data and show us problems we didn't even know we had, so I suggest you look at these tools carefully.

Vendors already in this space include Sisense, Birst, and Looker, and we can expect all the existing players (Tableau, Microstrategy) to jump in. I still believe Visier and OneModel are the vendors almost every major company should be talking with. These companies have been laser-focused on the HR market for years and have out-of-the box solutions that can integrate and produce analytics and actionable reports with

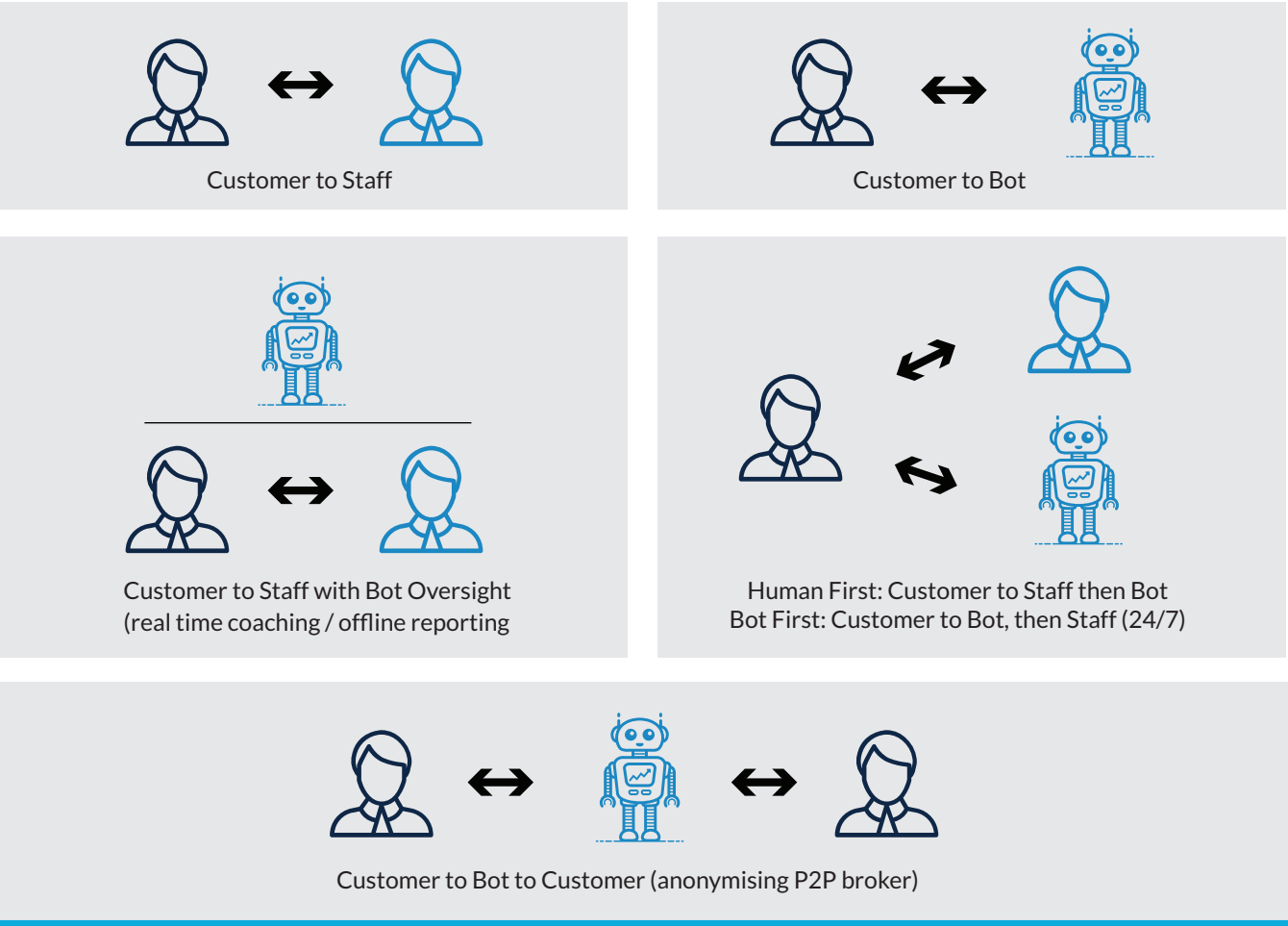20 https://medium.com/analytics-for-humans/augmented-analytics-demystified-326e227ef68f

Figure 29
Data Available for Analysis

Figure 30
Chatbot Interaction Models

almost no IT support.

Incidentally, since we are now so focused on pay equity, diversity, and fairness in job progression, the analytics teams are moving well beyond engagement into these important areas. Many vendors have solutions for these fairness issues, but most companies have not yet leveraged them.

The other technology that is clearly exploding with growth is chatbots, which are a natural extension of the way we speak and talk. Research firm Cognition reports that today there are more than 500 billion text messages sent each day, indicating how natural it is for us to chat.

Chatbot technology, which provides bots with the ability to converse, is now a commodity, with more than 1,000 different bot vendors. The core functionality is easy to find; how the technology is applied differentiates the applications. A chatbot must be training it so it knows what questions will be asked, how to answer these questions, and what the follow-on actions and answers will then be.

Deloitte, which has implemented hundreds of ERP systems and consults heavily in HR transformation and organizational redesign, has an enormous database of typical HR questions employees ask and is now training chatbots for clients to perform employee self-service. IBM's cognitive assistant for Workday is another example of such a solution.

In the area of recruiting, the problem of communicating with a candidate is enormously important to solve. Vendors such as Mya and Xor.ai and Textrecruit are building tools to address such recruiting needs, and they already have great utility for candidates looking for certain job shifts, locations, or types of jobs online. It's nearly impossible to search most online career portals, so these tools are becoming indispensable for talent acquisition.

For internal HR uses, the market is more immature but we're seeing advances. IBM, for example, has been using Watson's chat technology to serve its 300,000-plus employees and the HR team has told me it now has a highly trained team that can coach and train the bots, which are getting smarter every day. Most of my conversations with HR leaders indicate that the bot will be used as a supplement to the existing HR service center.

It's impossible to list all vendors in this area because they are so numerous. On a recent trip to India, I met almost a dozen chatbot vendors focused on the HR space. I suggest HR buyers start to familiarize themselves with these tools, and if there is an interest in implementing, look for a vendor that has customers similar in size, global scale, industry.

ONA Goes Mainstream

In the past, organizational network analysis was an arcane process consultants used to determine how companies got work done. Consultants sent hundreds of surveys to employees to figure out who they communicated with and then built charts to show communication patterns. They used the information to redesign management practices, workflows, and organizational structure. In fact, ONA was always part of organizational design … until now.

Today ONA is a real infrastructure solution. With the use of a graph database to capture the data elements included in an email (such as from, to, subject line, date, reply), a company can create a database that reflects the way employees communicate in real time. Facebook and Google do this with their own proprietary technology.

Today most ONA tools come from smaller vendors (TrustSphere, Syndio, Polinode, Worklytics, Keen, Humanyze, Innovizer) but companies such as Microsoft, with Delve embedded into Office 365, now offer this out of the box. I recently wrote an article describing Genpact's tremendous success using ONA to study performance and retention, and I'm finding more and more examples of this every day.

The important point is that more and more of the data we want to analyze is in communication and performance systems, again reminding us how important it has become to think about HR in the flow of work. If an employee's email data finds that he or she is much more influential and valued than realized, should we then look at performance feedback, 360 assessments, and other data to identify the employee's readiness for promotion, increased responsibility, or higher pay? Vendors such as HUMU would have some of this data, as would BetterWorks and Impraise. But what is needed is to efficiently bring all data together.

I believe ONA is moving from geeky, consultant-led projects to productized solutions, and therefore, we can expect more and more vendors to display HR and talent-related data in graphs to make ONA useful.   When combined with AI to give us even smarter analysis of this data, and we can then produce nudges to employees – such as recommending that a scheduled meeting isn't necessary or an email might be too long –to actually help improve work.

Wrapping Up

With all this new technology, how do you make sense of it all? My experience with clients and a sharp look at data from vendor surveys and the recent Sierra-Cedar report shows me that there are five key questions to consider.

1. Does the product or system appeal to users? As simple as this sounds, it's *the* killer issue. It doesn't matter if the HR department thinks the system is sophisticated or the IT department likes the technology. What only matters is if employees like it enough to actually use it. Do lots of pilots to assess usability of the system.

2. Does the vendor have the culture of support you need? Some vendors are very sales-driven, but not very flexible with their products. Other vendors are more consultative in nature. In today's market, you want the latter – a vendor that strives to understand your needs in an honest way and has the integrity to tell you if its product doesn't fit your needs.

3. Does the vendor have referenceable customers like yours? I continually coach vendors to pick and focus on their core market. The marketplace is so huge that a vendor can quickly get spread too thinly it targets too broadly. If a vendor doesn't have three to five customers just like your company, then the reality is that you will be a pilot customer. That may be fine with you, but make sure you find this out in advance.

4. Does the vendor have a product team you can relate to? Somewhere in the selection and sales process, you should talk with a true product manager, not a technical sales evan-

gelist. You should have your HRIT architect or functional HR manager ask this person some questions, and see how deeply he or she understand the HR domain. Such a conversation will yield valuable insights into the company's long--term strategy and level of HR knowledge.

5. Does the vendor have long-term viability? Successful HR tech vendors have many strengths that go well beyond the product. They have senior leaders that bring focus, passion, and customer intimacy; they have financial strength – whether it's profitability, committed investors, or a solid recurring revenue stream; and they have a strong and enduring company culture.

HR in the Flow of Work

As most HR professionals know, it's impossible to manage people without tools. We desperately need systems for record-keeping, pay, recruitment, learning, and many other things. The question is how to manage all this technology in the most effective, streamlined, efficient way.

I think the answer is clear: HR in the Flow of Work[21]. If you sum up all the challenges we face, the overall strategy is to make more and more HR technology become invisible to employees.   If technology is useful to employees and managers and it fits into day-to-day work life, it will be adopted and everyone, including HR, will benefit. If employees find it to be an interruption in their work and have to learn how to use it, HR won't gain as much value.

Most of the tools and technologies discussed in this report bring us further in this direction. AI, chatbots, analytics, and feedback systems are all growing because they fit into natural human interactions at work. Just as consumer software companies have to compete with thousands of apps and websites when they try to get buyers' attention, so must HR systems compete with many other work-related activities to gain employee mindshare.

---

21 https://joshbersin.com/2018/09/hr-in-the-flow-of-work-a-new-paradigm-has-arrived/

I think we are in one of the most exciting and transformational times in HR technology. We have shifted well beyond systems of record and systems of engagement to an era in which HR systems are truly systems of productivity. If HR teams can architect, select, and implement technology so it stays simple to users and truly increases productivity, everyone will benefit.

The HR Technology Marketplace 2019: Explosive Growth, Ever-Changing

Developed in partnership with LRP, this report addendum is designed to help you make sense of the mind-boggling number of vendors and tools in the market. As my wife once said when she went to a big HR tech trade show, "All these companies look alike to me!" The goal of this section is to help you sort out the players, as well as the coming trends.

The Major Market Dynamics

The typhoon Jebi that hit Japan in 2018 was one of the largest storms ever recorded. It formed from the energy created through thermal stress and created a vortex that took on a life of its own.

The current HR technology market is very similar. Driven by the tenth year of economic growth, a very tight labor market for hourly and salaried employees, and a tremendous need to upskill, reskill, and reinvent our skills, the HR tech market

is growing at an explosive rate. Added is the fact that AI, advanced analytics, sentiment analysis, chatbots, and cognitive tools are now in production – and you have a rapidly growing technology typhoon.

Additionally, companies are going through a massive shift toward a new model of management. People now work in teams; they communicate across the organization in real time; they are working more hours and under more stress; and business executives have even higher expectations for growth.

I've observed over my 40 years in business that when the economy is growing, the pressure on CEOs is higher than ever. Shareholders and investors expect above-market growth, which is harder than ever when every company competes for talent, brand, and customers. Innovation now reigns, so customers want to buy tools that make employees more creative, service-oriented, and happy.

How big is the HR technology market? The International Labor Organization[22] estimates that there are approximately 3.3 billion people working around the world (2 billion men, 1.3

_____

22 https://www.ilo.org/global/lang--en/index.htm
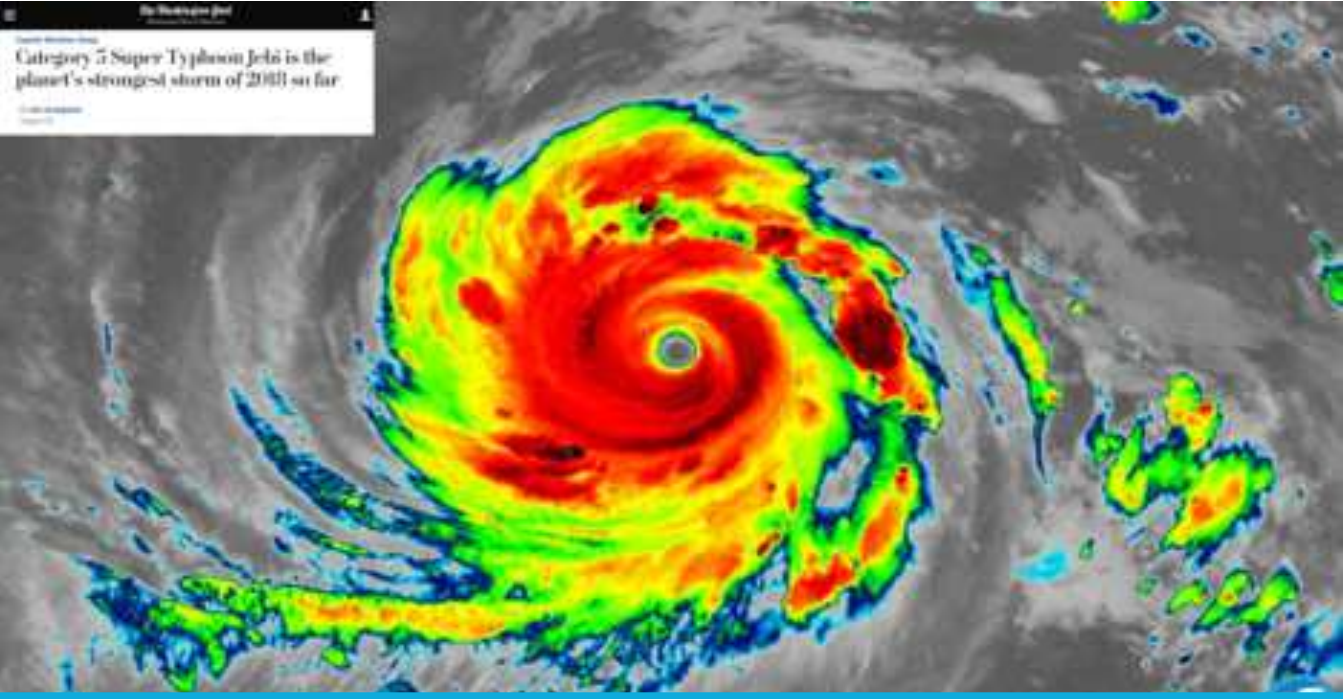
Figure 31
Typhoon Jebi: An Analogy for the 2019 HR Tech Market

LOCATION	NUMBER OF WORKERS	LEVEL OF HR TECHNOLOGY
Developed Countries	572 Million	High
Developing Countries	295 Million	Medium
Lower Middle-Income Countries	1.2 Billion	Low
Under-Developed Countries	1.27 Billion	Little to none

Figure 32
Estimated Global Workforce Sizes

Figure 33
Investments in HR Technology

billion women), and this number grew by almost 7% last year. They are distributed as follows:

According to the Sierra-Cedar study of HR technology usage[23], which is focused primarily on the developed economies in North America and Europe, large companies spend an average

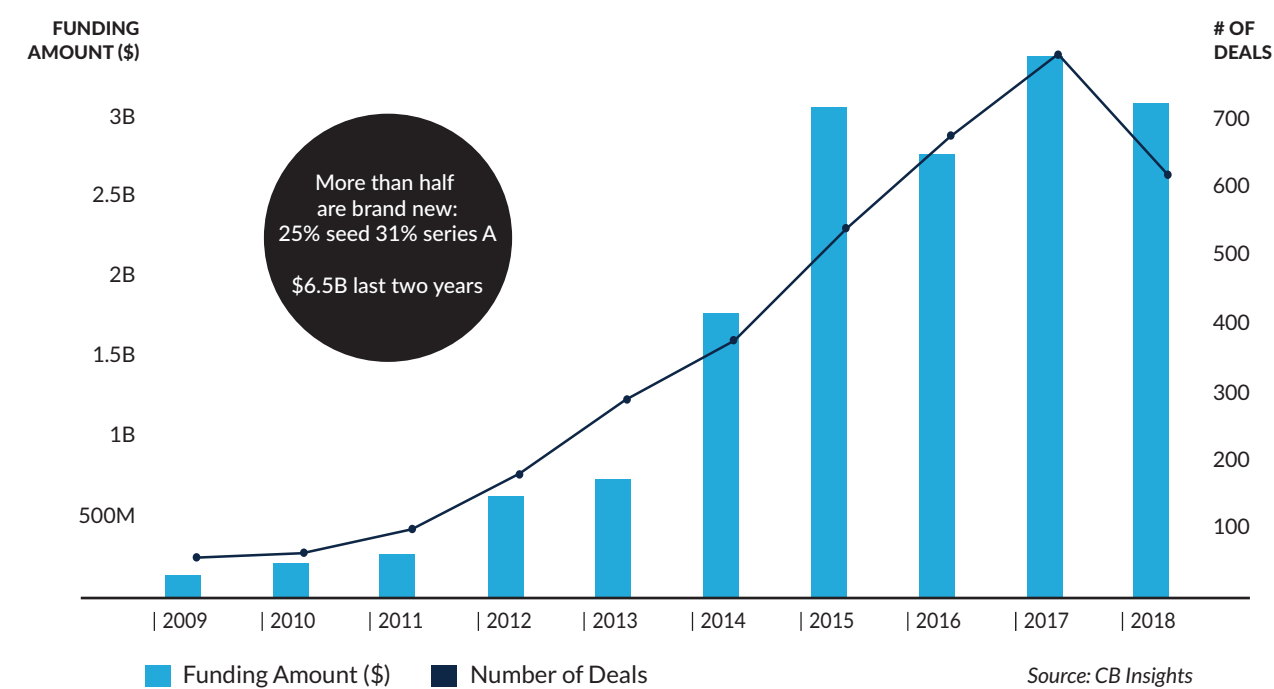of $176 to $310 per employee per year, and this only covers core platforms. If we assume that developed countries spend an average of $200 per employee on core platforms and developing countries spend an average of $150, the total market for only these two segments alone is $158 billion. While this is a very broad estimate, you can get a sense of how big this market is.

23 Sierra-Cedar HR Technology Study https://www.sierra-cedar.com/research/annual-survey/

The growth rate in HR technology is also astounding. In 2018, 54% of companies surveyed were increasing their spending, 42% were staying steady, and only 4% were decreasing. Of this spending, the fastest growing areas are talent management systems, core HR systems (which are rapidly being upgraded with cloud platforms), business intelligence and analytics, and workforce management and payroll systems.

Interestingly, as much as the cloud is enabling companies to consolidate platforms, the number of applications per company continues to rise. In a 2017 survey, large companies had an average of seven HR systems of record: this year they have over nine. So the market is diverging into an ever-expanding number of new tools and systems, making it more confusing than ever to understand.

This happens whenever the economy is growing and talent becomes scarce. Today we're in the peak of an up-cycle in which venture capital firms and private equity firms have invested more than $16 billion in startups and new ventures over the last five years[24]. I can tell from the number of vendors I hear from on a daily basis and the number of booths and startup pavilions I encounter around the world, it's easier than ever to build a new technology company. When the economy slows and businesses spending declines, we will see an enormous amount of consolidation.

Twelve Categories of the Market

Because there are so many elements to hiring, managing, paying, and developing people, there are now many categories of this market. To simplify the world for buyers and investors, I categorize the market into 12 major categories.

Core HR and Payroll

Every employee, contractor, or gig worker has to be paid. So among the thousands of HR systems companies buy, the most important is typically the HRMS and payroll application. And while many may consider this part of the market simple and transactional, it's one of the most innovative and complex.

24 CB Insights proprietary data

Payroll systems must manage country, state, county, and local taxes. They must accommodate many types of benefits and garnishments. They must address hourly, contract, and wage employees. They must interface with many different benefit, retirement, and insurance systems. These and other requirements make them difficult and complex systems to build.

Among the biggest payroll providers are ADP, SAP, Ceridian, Oracle, Workday, NGA, and CloudPay. But in this robust economy, we also see dozens of smaller providers such as Paychex, Gusto, Paycom, Intuit, Paylocity, Namely, Trinet, Zenefits, and Sage. If you are a small or mid-sized business, it's important to select a provider that does business in the states and countries you are likely to have employees. If you are a global company, you will most likely use multiple payroll providers, including local providers in different geographies.

The payroll market is changing rapidly. With more than 40% of the U.S. workforce now engaged in gig or contract work, payroll providers must accommodate many forms of pay – shifting particularly toward what we call real-time pay. Real-time pay implies employees get paid the day they work, for the hours, shift, or gig completed. Real-time pay places an enormous burden on the payroll provider, but vendors are all working to move in this direction.

There are also a wide variety of new digital pay services available, and these are in very high demand from workers. One of the biggest is ADP's new Wisely brand of services, which lets employees receive pay in a cash card and also automatically reserve and segment portions of their pay into different sub-accounts (such as accounts for vacation savings, taxes, or mortgage payments). In fact, ADP's research shows that younger workers often have multiple debit cards and have very little loyalty to traditional banks, so digital pay is an important trend to engage younger employees.

Core HR, the software that manages employee records, job history, performance, training, and other demographics, is also a critically important part of this segment. It is nearly impossible to run a company without an HR database, so these systems are used by millions of businesses. They are also very complex applications, because they must manage the company business structure, and they must hold many forms of employee data. More advanced systems such as Ultimate

New HR Tech Categories

Core HR & Payroll
HRMS
Payroll
Benefits Administration
Self-Service,
Case Management
Employee Communications
Employee Experience platforms

Compensation, Benefits, Rewards
Compensation management
Compensation data
Compensation benchmarking
Conjoint analysis
Cash payment, cards
Social recognition
Daily pay and pay advances

Workforce Management
Time & attendance
Workforce scheduling
Productivity and project mgt.
Leave management
External gig work
Internal gig work
VMS Vendor management

Integrated Talent Management
Succession management
Alumni management
Competency models
Career management
Job redesign

Talent Acquisition
Applicant Tracking
Candidate relationship mgmt
Onboarding, transition mgmt
Sourcing
Candidate assessment
Career portals & mgmt
Candidate referral
Recruitment analytics
Video interviewing
Job boards

Performance Management
Goal management
Succession management
Feedback management
Managerial assessment
Managerial coaching
Leadership development

Corporate Learning
LMS
LXP
LCMS
Learning content libraries
MOOCs
Sales or service training
Chat and search
Microlearning platform
Video learning platform
Digital performance support

Wellbeing Management
Wellbeing behavior change
Wellbeing assessment
Wellbeing coaching
Wellbeing training and content
Wellbeing health networks
Wellbeing analytics
Financial services and advice
Daily pay services

Engagement & Culture
Survey and survey platforms
Engagement services
Benchmarking
Culture assessment
Nudge engines
Behavior change tools
Engagement consulting

Diversity & Inclusion, Transparency
D&I tools
D&I benchmarking
D&I assessment
D&I job analysis
D&I analytics
ERG management

Analytics & Planning
Talent analytics and AI
Recruitment analytics
Workforce planning
HR benchmarking
AI and machine learning
Organizational Network Analysis
Organizational Design Tools
Digital performance support

Workplace Productivity
Collaboration and messaging
Video and audio collaboration
Document management
Content management
Team management
Team project management
Financial services and advice
Daily pay services

Figure 34
New HR Tech Categories

Software and HiBob provide manager-level dashboards to help managers understand all the issues on their teams.

In the 1980s and 1990s these systems were back-office IT applications and employees rarely saw them. Since the birth of the cloud, they have now become employee-facing systems, and the most popular ones are as easy to use as a social network. Vendors of talent management software (Cornerstone, Saba, SumTotal) have often avoided building core HR systems, but the market has now proven that companies do want their talent applications tightly integrated with their core HR systems, so more and more of these technologies are coming together. (Cornerstone HR is actually

a system that links together heterogeneous HRMS systems into a virtual network to avoid replacing existing systems.)

Most of the core HR and payroll vendors have decided to build talent applications as well. While this appeals to buyers, they struggle to stay competitive. The talent market segments are enormously innovative and core HR vendors often find they don't have the resources or product management expertise to maintain world-class features in recruitment, learning, engagement, wellbeing, and many of the emerging spaces. According to this year's Sierra-Cedar survey, the average large HR department has more than nine systems of record, so many companies continue to buy best-of-breed systems. As the
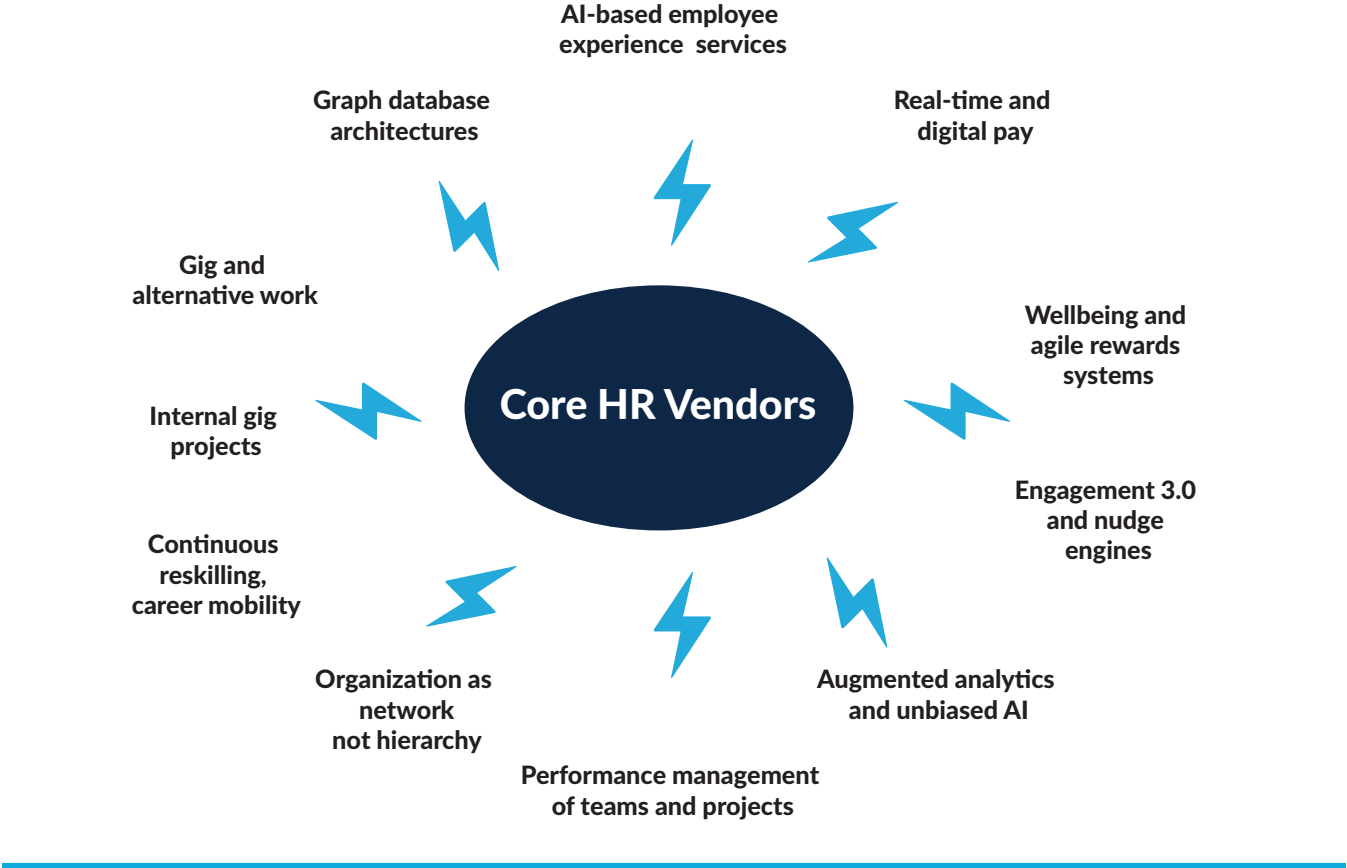
Figure 35
Disruptions Coming to Core HR

pace of innovation is quickens, I expect this trend to continue. (Another study found that L&D departments have 22 tools of their own, to say nothing of the number of add-ons recruiters are buying.)

Quite a few changes are taking place in the core HR segment. Not only are laws and regulations constantly changing, but new HR issues are forcing core vendors to adapt to evolving business needs and technology expectations.

The biggest potential disruptor for core HR vendors is the need to build network-oriented data management systems that can manage multiple teams, cross-functional projects, internal and external gig workers, and flatter, more interconnected organizational structures. Many HR leaders are frustrated that their core HR systems do not adequately model the way their companies operate. This is why ADP is building an HRMS built on a graph database, and Workday's architecture is network-oriented.

Because of all this change, Sierra-Cedar research shows that 28% of all companies are planning on replacing their core HRMSs this year. While this percentage is slightly down from last year, it represents a tremendous movement to cloud-based, integrated platforms. Those companies upgrading have used their systems for approximately 8.5 years, so they are often at the end of their useful lives. The features that often drive these upgrades include cloud implementation, AI-based analytics, chatbots, contingent workforce management, and upgraded talent capabilities.

Contingent and gig work is also changing the market. Considering that 40% of U.S. workers are contingent and almost 70% are "deskless" in segments such as hospitality, retail, healthcare, and manufacturing, there is a lot of innovation ahead in the core HR space.

Key Market Shifts

- Growth in SMB and mid-market HRMS and payroll system vendors, many of which may not survive in the next down-turn (or will be acquired).

- Re-engineering of payroll to be more flexible, real-time, and holistic.

- Digital pay solutions that pay by debit and credit card.

- Focus on contingent worker management in core HRMS.

- Shift to network-based team models and new organization structures.

- Embedded analytics and augmented analytics .

- Attempt to build ecosystems, because of inability to keep up with talent management tools.

Employee Self-Service or Employee Experience

The second major category, which we used to include in HRMS, is employee self-service. This whole market is being redefined by vendors like ServiceNow, PeopleDocs, Deloitte, and PeopleSpheres to deal with the need to create a single, integrated, employee service experience. While self-service portals used to be included in core HRMS systems, they are now independent products and this segment is growing very rapidly.

As I described earlier, the heterogeneous nature of HR technology now makes it mandatory to build a service layer in front. Consider how Amazon.com, Facebook, or Google make it easy to use their platforms. As consumers we have no idea how many back-end systems there are behind the scenes, yet they all interact and provide us an easy-to-use front door. This is what companies are trying to do for their employees.

The vendors in the market are now building case management, knowledge management, and intelligent tools to route requests to the right agent and even use AI and chatbots to return answers. Over the next few years, this will become one of the biggest infrastructure markets in HR, until consolidation occurs sometime in the future. ServiceNow already has almost 1,000 HR customers and I expect its growth to continue.

The explosive demand to improve the employee experience has the potential to impact many vendors in the market, and most are scrambling to decide how to build more agile portal technology along with tools for case and knowledge management, communication, chatbots, and process management to give customers a unified employee experience. I do not believe the ERP vendors will be able to do this well, leaving the market to vendors such as ServiceNow, PeopleDocs, and dozens of other startups.

Pay and Rewards

The pay and rewards market is exploding in several dimensions. First, there are now dozens of companies that provide perks to employees as gifts, social recognition programs, or alternative

Automated Services
(voice, apps, AI, nudges, intelligent proactive solutions)

Self-Services Systems
(portals, apps, case management, knowledge base, expertise mgt)

Managed Service and Service Delivery
(integrated service delivery strategy, call centers, outsourced HR services)

Ad-Hoc Service or No Service
(deliver as needed, random, business partner driven, difficult to manage)

Figure 36
The New World of Employee Self-Service

ways to provide health and benefits. Companies in the rewards market such as OC Tanner, Globoforce, and Fond are now expanding their solutions as apps, which companies can deploy and use for pay, rewards, recognition, and other forms of employee feedback.

In the pay area, the core HRMS systems continue to evolve and improve their pay platforms every year. Oracle has significantly improved its rewards application and is often considered one of the most fully functional in the market. Workday has moved into financial management through several acquisitions and is now building an integrated financial planning and pay system. Vendors such as Mercer, Willis-Towers, and AON Hewitt continue to sell compensation planning and data solutions. And companies like Deloitte are now offering various forms of conjoint analysis to help companies determine which elements of pay are most valued to different employee segments.

The entire world of pay has fallen behind the rest of HR. In the Bersin™ 2018 High-Impact Rewards study, the company found that only 11% of executives believe their companies' pay practices are fully in line with their business strategy. The problem? Pay systems are not holistic enough, they are not customized for individual needs, they are infrequently reevaluated, and rationale for pay levels is poorly communicated.

Given that more and more data about pay has become transparent (ADP, LinkedIn, Payscale, Glassdoor, and many other providers now crowdsource pay information), over the next few years companies have the opportunity to vastly re-engineer their pay practices, leverage the new digital pay systems in the market, and make pay much more customized for each individual. And more and more companies now tell us that while base pay may not change more than once a year, incentive and rewards are being paid quite frequently, making the world of recognition and rewards a new, dynamic part of HR.

Workforce Management

Given the accelerating growth of gig work, part-time work, contingent work, and other forms of alternative arrangements, companies want systems to manage the time, projects, billing, hourly wages, and scheduling of their diverse workforces. For many years this was handled by time and attendance systems,

which was dominated by Kronos. Today, there are gig network vendors which are actually marketplaces for gig workers and gig software providers that sell tools.

As I look through the 1,400-plus startups and early stage vendors in my HR provider database, it's amazing how many are now focused on workforce planning, niche gig worker marketplaces, and other forms of industry-specific workforce management applications. This makes sense. Every hospital in the world, for example, has a unique set of requirements to schedule, organize, and pay its nurses. This is similarly true for manufacturing, retail, and many other industry segments.

For example, Infor now has more than 6,000 hospitals as clients and is continuing to build workforce management tools for the healthcare industry. Legion, a fast-growing startup focused on retail, is building a multi-employer workforce management tool that lets workers schedule time between multiple part-time employers. Comprehensive workforce management it is now an essential part of human capital management platforms.

Integrated Talent Management

Integrated talent management software was the rage around 2010, but it has fallen out of favor as companies look for ever-more innovative solutions in recruiting, career management, learning, wellbeing, and engagement. That said, the vendors in this market continue to grow.

The biggest end-to-end talent management companies are Cornerstone, Saba (which has acquired both Lumesse and Halogen), TalentSoft (a fast-growing European provider), SumTotal, Infor, and several others which have been through private equity buyouts. My research indicates that larger organizations continue to buy best-of-breed products, but mid-sized organizations want an integrated talent platform. The challenge these vendors have is that Oracle, SAP, Workday, Microsoft, and many other vendors are jumping into this space, so the competition is fierce.

The market for these systems is as large as the market for core HR and payroll systems, but since there are so many different ways companies can buy these products, the integrated suite

vendors must market themselves well to compete with many well-funded startups.

I believe the integrated talent management suite market is nearing the end of its run and will soon be replaced by next-generation systems, built on next-generation engagement, performance management, analytics, and learning tools. When I look at the disruptions taking place in those markets, I see an opportunity for investors or big companies to buy and integrate these next-generation talent tools over the next few years, essentially creating a 21st century integrated talent management market. While this has not quite happened yet (HighGround was acquired by YouEarnedIt), when the economy slows down and VC money dries up, I believe we will see this change.

Meanwhile, the vendors in this market are growing at low double-digit rates and they are doing an excellent job of finding customers with older ERP systems who do not want to embark on the massive effort it takes to upgrade their core HR systems in order to get the talent products of their core vendors.

Talent Acquisition

This marketplace is well over $200 billion in size. The software and platform part of the market, estimated at well over $5 billion, is comprised of online advertising, assessments, interviewing tools, and many AI and recruitment management tools. It is one of the fastest-growing parts of the HR tech market right now, primarily because the job market is so competitive worldwide. In Russia and Romania, the unemployment rate is below 3%, and in Japan is it closer to 2%. Growth is also driven by the volume of new AI-based solutions, ranging from chatbots to intelligent search engines to various advanced forms of assessment, bias management, and process management.

We are in the middle stage of a massive replacement of legacy systems such as Oracle/Taleo and IBM/BrassRing today. These two vendors at one point commanded almost 40% of this market (they are still over 20%) but more and more companies are starting to replace their solutions. SmartRecruiters is capable of enterprise-scale functionality now, and offerings from new vendors such as Greenhouse, iCims, Lever, JobVite,

Allyo, and PhenomPeople are being bought by small to mid-sized companies as well as startups.

The complimentary tools for recruiting, which I described above, are growing in number. New tools for sourcing, video assessment, reverse job auctions, special talent network (networks of teachers, hourly workers, IT professionals, minorities, women, etc.), and many innovative AI tools for recruitment automation and assessment are in the market. Of the 1400-plus vendors I have in my database, almost a third of them are in the area of recruitment, talent networks, or AI-based systems for assessment or fit.

Performance Management

Performance management software is an enormous niche market that has emerged over the last five years to help companies replace traditional end-of-year assessments. It's an innovative marketplace filled with small and mid-sized technology firms providing offerings for feedback, goal management, and various types of team management.

While it's not clear how much these companies will grow, I do observe significant interest by the many companies I visit because core ERP vendors lack such innovation. Currently, the market for these next-generation tools is less than $1 billion in size, but as market consolidation starts, I believe it will grow.

The key trends here are a new-found focus on agile goal management (often called OKRs) and the development of enterprise-scale feedback and check-in processes to manage people. Managers have always had one-on-one meetings – often at their discretion. But today these and other such processes are institutionalized and incorporated into agile development practices. The vendors in this space are finding that companies want these tools integrated into the flow of work, so they are building systems that look more like work management systems and less like HR performance management tools. As this shift continues in 2019, I think some of these vendors could get very hot and many may be acquired.

There is also going to be a trend toward consolidation. Most companies that purchase a new performance management tool later realize that the system needs a complementary

functionality in learning, coaching, goal management, social recognition, and even team productivity. The High-Ground/ YouEarnedIt acquisition is a trend we will see continue.

Finally, as Microsoft Teams, Slack, Workplace by Facebook, and other productivity tools become even more popular, I believe these performance management tools will become deeply integrated into the systems of productivity. Most vendors are working on this now and soon enough these tools will disappear into the background and manifest themselves in the core applications we use to get work done.

Corporate Learning

The L&D tools and platforms marketplace is undergoing a renaissance. There are hundreds of new vendors developing video authoring, micro-learning, mobile-learning, virtual reality, search, AI-recommendation engines, and even chatbots for learning. Given that global U.S. L&D spending is around $220 billion and roughly 12% of this goes into various forms of tools, this market is over $40 billion in size.

The biggest shift in the market is the move away from the LMS as the core learning platform to an architecture in which the LMS is one important part. Learning management systems still play an enormously important role in this market but as other platforms – such as those for LXP, micro-learning, video, and program management -- collect learning-related data, over time the LMS will play a smaller role. LMS vendors are very creative companies and they are evolving their products to be more open, more functional, and more essential to the market. That said, I believe the percent of global L&D technology spending going to LMSs will shrink and more money will be spent on these exciting emerging categories -- creating the dynamic, self-directed, intelligent learning experiences employees want.

Corporate Wellbeing

The $40+ billion market for these solutions is expanding in many directions. Not only are there a myriad of apps to give employees nudges, online training, resources, assessments, and various forms of fitness tracking, the market now

Total Worldwide L&D Spending by Program ($ Billion)

US: $141 Billion

Global: $211 Billion

Product Education $12.69
Basic skills $6.13
Tuition Reimbursement $26.96
Customer Service $12.69
Managerial $29.61
Executive/leadership $14.59
Soft skills, interpersonal $16.50
Compliance $23.26
IT and desktop $16.71
Process/Procedure $21.15
Professional (engr, acct, legal) $16.92
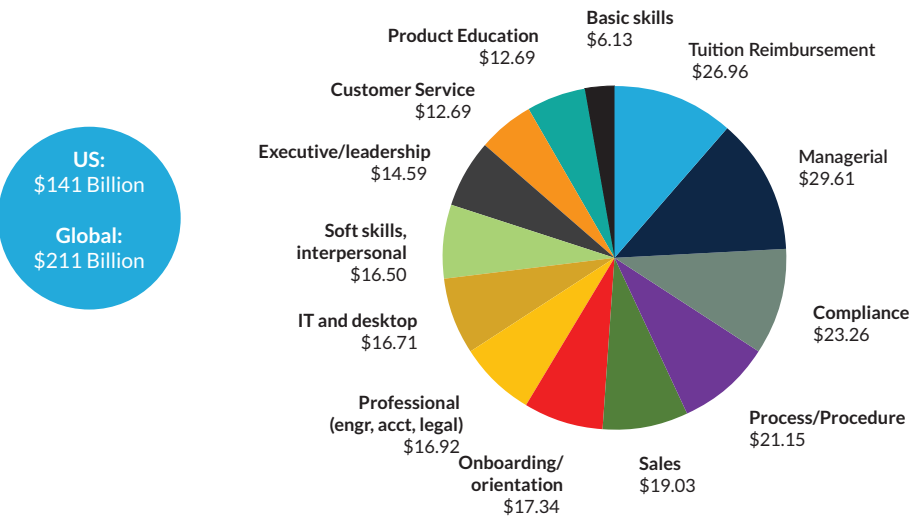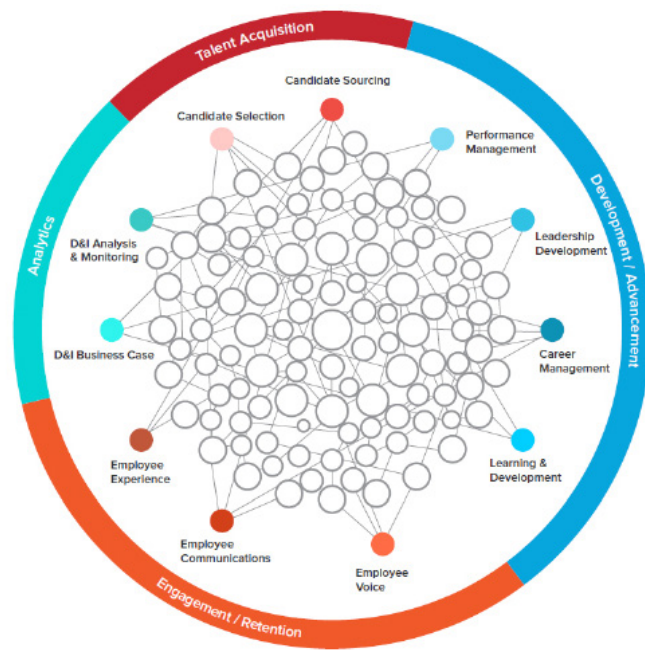Onboarding/ orientation $17.34
Sales $19.03

Figure 37
L&D Market Size

Figure 38
D&I Technology Impact, by RedThread Research, in Partnership with Mercer

has a variety of fast-growing network providers offering psychologists, medical specialists, coaches, mentors, and other forms of wellbeing.

One of the wellbeing-related issues HR leaders tell me about is doing too much. There are so many vendors selling so many products, the market can feel like a giant retail store where buyers keep adding to their baskets. However, I don't think this will continue. Companies do not want to offer and manage huge sets wellbeing programs (Deloitte, last I checked, had 97 offerings). Instead, they want a curated set of programs that meets the needs of key workforce segments.

For instance, a large beverage manufacturer recognized that its road-warrior sales reps used few of the programs developed for office employees, but they desperately wanted exercise and fitness advice tailored to people who travel for work. The same company has a large workforce located in Mexico, where employees were desperate for basic drug treatment support because providers there are fewer and more expensive. HR departments have to understand what employees really want before buying. I believe the fastest growing vendors in this

space will be those that provide niche solutions and those that can provide a highly customizable, employee-specific offerings.

Diversity and Inclusion

D&I is now a technology category. For example, almost every recruiting platform now has a set of features, reports, and AI recommendations to identify and reduce bias and help companies recruit minority candidates. SuccessFactors includes an entire suite of products to identify bias in pay, promotion, interviewing, and hiring. LinkedIn just announced an offering called Diversity Insights embedded within its Talent Insights system that lets companies benchmark diversity in any job, role, location, or other demographic. And vendors such as Textio, Pymetrics, and STRIVR Lab sell specialized technology that can assess candidates in an unbiased way and give managers VR experiences to teach them how to reduce hiring bias.

A new study be RedThread research breaks the market down into categories and lists more than 100 vendors that cover or support this space. The research demonstrates that many vendors have added D&I reports, analyses, screening tools, and other offerings that make diversity easier to implement, monitor, and enforce. So I now see this more and more of a set of features than a set of vendors.

The specialized vendors in this space are growing quickly. Some of the more interesting ones include FairyGodBoss, Jopwell, PowerToFly, HiringSolved, InvolveSoft, Panopy, Blendoor, and Noirefy – all of which have focused solutions to drive diversity in hiring and candidate selection. Jopwell, which was founded by a Goldman Sachs alum, has built an entire social network focused on professionals of color – which is an enormous market and hiring segment which companies have a hard time addressing. FairyGodBoss is doing a similar play for women, and tools like HiringSolved, Entelo, Talvista, and Pymetrics are providing diversity-focused and diversity-free tools for sourcing and assessment.

At the enterprise level, SuccessFactors suite of Business beyond Bias tools give organizations a wide set of reports, analyses, and tools to help identify bias and remove bias from selection, promotion, pay review, succession management, and

almost every other talent practice in HR. I believe this type of functionality belongs in every HR system, and over time this will become a mandatory set of features. And let's not ignore the role of AI: Even Slack now has software that identifies bias in chat messages[25] (also known as mansplaining!). Every HR tool will help us reduce unconscious and conscious bias over time.

Analytics and Workforce Planning

Virtually all major HR technology players now have solutions for analytics and workforce planning. Microsoft Workplace Analytics, Workday Prism, SAP's analytics offerings, and LinkedIn Talent Insights have all matured significantly, making it possible for companies to analyze employee data in new and more detailed ways. Most of these systems are also starting to collect and manage organizational network analysis data, opening up a large market for smaller players such as TrustSphere and Keencorp.

The biggest vendor in the standalone analytics space remains Visier, which is a company I've been a fan of for many years. Visier continues to help companies aggregate and integrate all different types of employee data and provide out-of-the box reports for managers, leaders, and HR using built-in AI and augmented analytics. A similar company, OneModel, now offers end-to-end data connectors between many of the off-the-shelf HRMS and talent platforms.

While the market for standalone analytics tools remains large, it will never be as massive as that for traditional IT analytic tools. As data management solutions get better, I think the market for independent tools will remain limited, except for a few vendors which focus on HR-specific solutions.

In the area of workforce planning, there are more than 30 startups building systems to help companies manage the entire tapestry of workers: full time, part time, gig, contract. I expect these vendors to grow rapidly as HR departments come to grips with the fact that they must be more involved in the total workforce planning effort within their companies. Currently, fewer than 35% of companies have a total workforce plan.

25 https://qz.com/work/1238413/slack-analytics-will-soon-know-if-you-speak-to-men-and-women-differently/

Most plan for different workforce segments independently, and often the only plan that exists is an annual budget and headcount allocation. In the new world of highly contingent and specialized talent, it's critical that HR departments have systems capable of total workforce planning.

Finally let me revisit the issue of the graph database, which I mentioned earlier. If you really want to advance your analytics function, the team should be looking at the entire network relationship within your organization, and this includes ONA data, engagement and feedback data, location and travel data, as well as data collected through wellbeing tools and traditional HR systems. Companies are now building this as a data lake and I believe it will become more and more common every year.

Workplace Productivity

This technology category perhaps represents the biggest disruption taking place in HR technology today. Microsoft, Google, Facebook, Slack, and LinkedIn are all pouring money into HR technology. Since the IT departments of most companies is likely doing business with at least one of these vendors in a big way, HR technology buyers should be aware of their products and understand how they may complement or replace some of the specialized and expensive HR tools potentially under consideration.

In learning, for example, Microsoft Teams has video authoring and translation capability that far exceeds many of the features of dedicated LXP or video providers. In engagement and feedback, tools that plug into Outlook, Slack, or Teams will be far more successful than those operating from standalone apps. As Facebook starts to market and sell Workplace, the company's collaboration and team management platform, I see more and more HR vendors building plugins for its environment. This is the embodiment of HR in the flow of work and it will be the future.

This also begs the question of what happens when companies expand their use of team and project management tools such as Trello, Basecamp, and Asana. These team productivity systems make up a multi-billion-dollar market and offer great ways to learn, collaborate, set goals and work plans, and give

feedback. I believe employee self-service, wellbeing, and many of these other HR-related markets will begin to manifest themselves in such platforms.

The head of HR for one of Europe's largest retail distributors recently told me her company put its entire suite of HR technology into Salesforce. They have selected and developed tools that let people set goals, look up various benefits and HR data, and do most of their compliance and learning within Salesforce. It has been a tremendous success. This type of implementation will become common in the year ahead, giving the productivity platform vendors a major role in the HR technology landscape.

Finally let's not underestimate the impact of Microsoft on the whole HR tech market. Office 365 with its new features (Teams, The Office Graph, Workplace Analytics) are a powerful set of organizational analysis, networking, and development tools. While Microsoft does not yet position them as HR software, more and more companies are asking themselves, "Why can't we use Microsoft Teams for learning?" or "Why can't we plug our performance management tool into Outlook or Teams?" As HR technology vendors try harder and harder to build systems that operate in the flow of work, they are going to collide with Microsoft, which has the largest set of corporate infrascture tools of all.

I met with a Canadian bank early this year which standardized all its internal learning tools on YouTube and Google Hangouts. While I wouldn't have expected the G-Suite products to provide enough functionality for end-to-end employee development and learning, they found they could add enough plugins to essentially build an entire suite of onboarding, development, and internal knowledge sharing applications entire on the Google suite. These big vendors now understand the potential in the HR domain, so in the next few years I believe they will jump in much more aggressively.

Already Microsoft and LinkedIn are collaborating on recruitment scheduling integration, employee profile and identity integration, and soon the recommendations for LinkedIn learning within Microsoft products. Imagine if Office 365 recommended learning based on your interactions with your peers? This is now possible and it's clearly a direction this marketplace is going to go.

Conclusion

I've now researched the HR technology market for 15 years and plan to continue my research for many years to come. I hope this report gives you insights into the marketplace and some strong signals about where the market, its vendors, and products are going. My goal is to help buyers make educated decisions, vendors better plan for growth and change, and investors become even more successful.

As always, I appreciate your feedback, corrections, or any debate about my findings and predictions. 2019 will be an exciting year in HR technology, and I look forward to doing my part to increase understanding and identify innovations that can bring real value to employees and organizations around the world.

Josh Bersin

About Josh Bersin

Josh Bersin is an internationally recognized analyst, educator, and thought leader focusing on the global talent market and the challenges impacting business workforces around the world. He studies the world of work, HR and leadership practices, and the broad talent technology market.

He founded Bersin & Associates in 2001 to provide research and advisory services focused on corporate learning. Over the next ten years, he expanded the company's coverage to encompass HR, talent management, talent acquisition, and leadership. He sold the company to Deloitte in 2012, when it became known as Bersin™ by Deloitte.   Bersin left Deloitte in June 2018, but he continues to serve as a senior advisor and contributes to major research initiatives. He also sits on the board of UC Berkeley Executive Education.

Bersin is frequently featured in talent and business publications such as Forbes, Harvard Business Review, HR Executive, FastCompany, The Wall Street Journal, and CLO Magazine. He is a regular keynote speaker at industry events around the world and a popular blogger with more than 700,000 followers on LinkedIn.

His education includes a BS in engineering from Cornell University, an MS in engineering from Stanford University, and an MBA from the Haas School of Business at the University of California, Berkeley.