Integrating the HR Landscape on the Cloud

Strategies and best practices to build integrated data, processes and business outcomes | June 2015

FOSWAY GROUP

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Contents

Executive summary

Whilst we talk in business about Human Resources (HR) as if it is a singular function, in reality of course it is much more complex. HR is an aggregated area of focus and an aggregation of people, processes and systems that capture, manage and report a very diverse set of different things. Having multiple systems may be pragmatic for getting things done, but in reality it creates a major headache when you need to connect the data together.

Integration between HR-related systems has been a major bugbear for companies, and with the need for more integrated processes and HR analytics, that problem is getting more pressing. The HRMS still only manages a subset of people data, and is supported by many other process-specific applications, such as payroll systems, recruiting applications, learning and development, performance management, compensation planning and other applications.

All of these different systems leads to a fragmentation of the underlying people data, with resulting complexity to manage it consistently across the organisation. Your people data is spread across all of these systems, and whilst HR leaders will often focus on integration with the core HR system, it is in fact much more complex than that.

Much of the critical data needed to support key talent and work processes is not in the HRMS at all, but held within one of the many other specialist systems. Getting access to that data on a timely and accurate matter is really important for operational work processes as well as for HR and talent processes.

A really good example of this need relates to learning data within the LMS. Whilst the LMS will need employee information from the underlying HR system, the LMS also acts as a hub for data with other learning applications and content, talent management systems and work/line of business applications.

With many of these systems moving to the Cloud, this changes the integration landscape significantly. For many companies, their learning, recruiting or performance system will already be in the Cloud. The Cloud is already the dominant deployment approach for new talent and learning, and core HR is now following as well. Understanding how integration is going to work in the Cloud is going to be critical.

Whilst moving HR data to the Cloud can generate concerns, not least for data security and privacy, it also brings many advantages. Cloud systems cannot be customised, only configured. Vendors can therefore create pre-built connectors for all major points of integration, simplifying the integration process significantly for their customers, and also ensuring properly supported interfaces and integration tools.

Integrating disparate HR, talent and learning systems brings many benefits:

Clearer links and better continuity between the individual talent elements	Increased automation of talent processes as a whole, and improved efficiency of operations	Improved user experience, lower learning curve and higher adoption throughout the talent lifecycle
Reduced duplication, more accurate talent data and ease of sharing talent data (currently seen as poor in most organisations)	Better management information and analytics	Improved operational performance and ROI from the HR function

Not integrating them also leads to many problems!

HR data integration is an HR issue, not just an IT issue!

It is critical for HR and Learning leaders to work with their colleagues in IT to focus on business outcomes, not on IT requirements.
Engaging positively in this process is a requirement for all HR functions. Only by elevating the conversation from what data do we need, and focusing on the quality of experience and impact we are creating, will HR build truly transformational solutions.

Introduction

Whilst we talk in business about Human Resources (HR) as if it is a singular function, in reality of course it is much more complex. HR is an aggregated area of focus and an aggregation of people, processes and systems that capture, manage and report a very diverse set of different things. From recording who works for you, paying them, tracking their time and attendance, recruiting new people, training and developing them, managing performance, and managing promotions, succession and compensation strategy, HR is a very diverse set of activities indeed.

All of these different activities and processes has also led to proliferation in systems to manage and capture the data. Whilst most corporations will have a core HR Management Systems (HRMS) or HR Information System (HRIS), in reality this only tends to manage a core set of processes. Payroll is often managed and delivered through specialist providers, recruiting is managed via specialist applications and external agencies, and learning is managed through learning management systems and external training providers.

Just like the HR function, the HR systems landscape is in fact, a whole ecosystem of many systems managing separate activities and tasks.

In larger enterprises, this problem is even worse. Whether through geography or different business units, or through mergers and acquisition of other companies, if is very common for large companies to have different systems doing similar tasks in different parts of their business. For these companies, the HR systems landscape is not just diverse by HR sub-function, but also by geography and business unit.

Whilst multiple systems may be pragmatic for getting things

done, in reality it creates a major headache when you need to connect the data together. Integration between systems has been a major bugbear for companies, and with the need for more integrated processes and HR analytics that problem is getting more pressing. Integration of HR data and process is becoming a critical issue for many companies, both to effectively manage their people, but also more importantly to maximise their impact on the performance of the business and the bottom line.

This Paper

Based on Fosway Group's deep research with major companies in Europe, and targeted at HR, Talent and Learning leaders, this Fosway Insights paper looks at the reality of the HR systems landscape in companies today, and discusses the business drivers and approaches to integrating those systems. With the massive growth in interest in deploying systems on the Cloud, the paper also talks about how the Cloud is changing the integration story and creating new opportunities for companies.

And whilst HR leaders often focus on the HRMS as the core system for their people processes, in reality there are other

systems that are equally central to their people processes and outcomes, not least, the systems that manage learning. We will also explore the role of learning data as a hub for broader talent processes and in connecting with key work processes and outcomes.

This is not an IT paper for IT; it aims to explore the primary issues and opportunities for HR leaders, to give them the aspiration and ammunition to engage with IT colleagues to create a stronger, more business focused approach to integrating the HR systems landscape.

The HR Systems Landscape

Any analysis of the potential for integration of HR-related data needs to first understand the multiplicity of systems that makes up the HR systems landscape. Managing "Human Resources" consists of many processes, including managing staff records, recruiting new staff, training them, and of course paying them. The larger the company, the more complex the HR systems landscape becomes, with more systems and even more specialist applications that manage different aspects of the HR function and related sub-processes. Multi-national companies have further complexity still, with different business units and geographical sub-businesses often having separate applications for managing similar HR processes.

The HRMS

Traditionally, many companies tried to address this through the adoption of a core HR Management System (HRMS) which managed the HR data, alongside many of the core HR management processes. This is often referred to as the System of Record. Typically these systems were provided by specialist HR software vendors, or as part of an integrated service.

A typical HRMS will enable the tracking and reporting on workforce and employee data while maintaining effective day to day HR management of the organisational processes including:

Administration capability to handle all basic employee and personnel information	Performance management
Benefits/compensation management	Skills and competency management

Over time, these core HR systems evolved to include increasing amounts of specialist HR process capability alongside their core HR functionality, becoming HR Suites. Typically constructed in a modular fashion, HR Suites provide both core HR (system of record) functionality, alongside many of the other major non-core HR functions such as recruiting, training, performance management and others. These latter processes are often now grouped together under the general label of Talent Management, each of which often had its own team, processes and applications specifically to support them.

In reality, the HRMS still only manages a subset of people data, and is supported by other process-specific applications, such as payroll systems, recruiting applications, learning and development, performance management, compensation planning and other applications. All of these different systems leads to a fragmentation of the underlying people data, with resulting complexity to manage it to ensure consistency across the organisation. Maintaining people data across multiple systems is a large challenge for all organisations, and especially those that have multiple solutions for managing the same type of data (e.g. multinationals without a common HR system).

The Rise of the Cloud

For the vast majority of companies, HR systems were historically installed and run locally on the company's own IT infrastructure. This is known as On-Premise. The systems were installed, configured, managed and supported within the corporation using its own IT staff (or often an HR IT group), or using external 3rd party resources. Over the past five years, there has been a significant shift to deploying these systems in the Cloud, on a Software-as-a-Service basis, where the hosting, management and maintenance/update of the systems is directly managed and supported by the providing vendor.
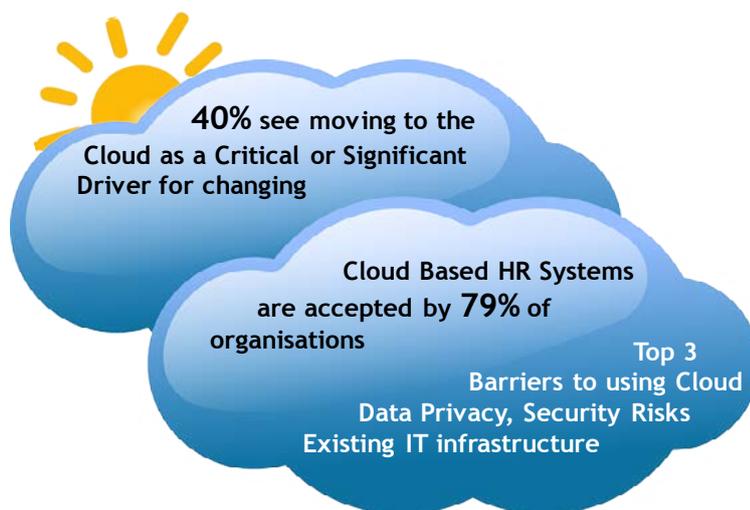
In research published in 2008[1], Fosway said that:

"The Cloud will have a significant impact on the Learning and Talent Systems market, and is a relevant and viable option for Enterprise customers as well as the Mid-Tier market."

[1]*Software-as-a-Service: Impact on Learning & Talent Systems – Fosway Insights, December 2008*

Research shows this view is now true. For recruiting, learning, performance and talent, the Cloud has already become the dominant deployment approach, and we now estimate that 75% or more of new solutions deployed in 2015 will be deployed in the Cloud.

From our recent research[2] , almost 80% of HR professionals said that Cloud HR systems are accepted in their organisations, and 40% see the Cloud as a critical or significant factor for changing their HR platforms, driven by better user experience, increased flexibility and reduced operating costs.

[2]*HR Tech in Europe: The Critical Realities for 2015 – Fosway Group*

40% see moving to the Cloud as a Critical or Significant Driver for changing

Cloud Based HR Systems are accepted by **79%** of organisations

Top 3 Barriers to using Cloud Data Privacy, Security Risks Existing IT infrastructure

The Growing Importance of the Cloud

The following diagram summarises some of the main drivers and barriers organisations should consider with the shift to Cloud.

Cloud/SaaS Force Field Analysis
The pressures for deciding On-Premise or Cloud implementations

The Tipping Point

BENEFITS

IT Costs & Economies of Scale
Lower Overheads
Faster Innovation
Community of Interest
Customer Satisfaction

BARRIERS

Security
Data Protection
Scalability and Performance
Integration with On-Premise Apps
Controlling Upgrades
Inability to Customise

Drivers
Pressures For Cloud/SaaS

Obstacles
Pressures Against Cloud/SaaS

The Pressures for and against the Cloud

We will also explore the impact of the Cloud in integrating HR data and processes later in the paper.
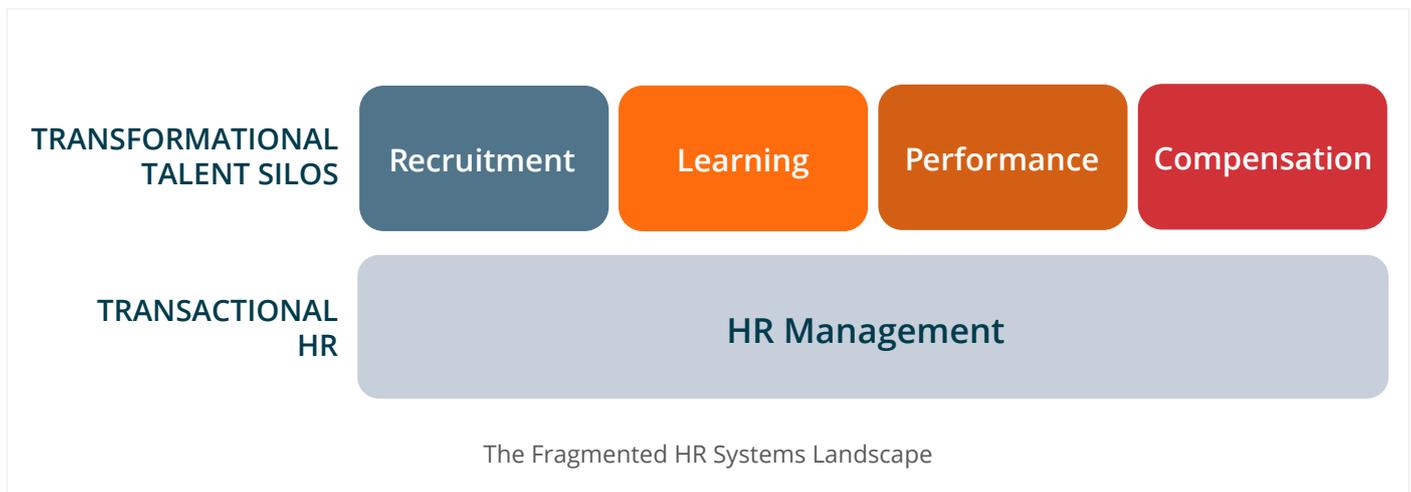
HR Suites and Best of Breed Applications

Over time, the HRMS has evolved to include increasing amounts of specialist HR process alongside their core HR functionality, becoming HR Suites. Typically constructed in a modular fashion, HR Suites provide both core HR (system of record) functionality, alongside many of the other major non-core HR functions such as recruiting, learning, performance management and others. These latter processes are often now grouped together under the general label of Talent Management, each component of which has its own team, processes and applications specifically to support them.

Whist having integrated HR suite that manages all the HR sub-processes sounds like an obvious strategy, it is not necessarily that easy for vendors and corporates to deliver successfully. Especially when deployed on premise, HR suites turned out to be very complex and expensive, and actually not that good at managing specialist sub-functions.

Even if companies bought the full HR suite, often they still ended up with an HR system for managing core HR processes, using some of the broader suite functionality where it was easy to deploy, and then buying what are known as "best of breed" applications for managing the higher impact talent management processes. The assumption of a single HR Suite to manage all HR, learning and talent processes is not the dominant reality for companies today.

As well as the potential for multiple Core HR Systems, companies will have many other core HR applications including Payroll, Absence Management, etc., as well as often separate best of breed systems for managing Learning, Performance and Recruiting.

Overall, this has led to a fragmented HR systems landscape, especially between core HR processes and the main talent processes, as shown in this diagram.

TRANSFORMATIONAL TALENT SILOS	Recruitment	Learning	Performance	Compensation
TRANSACTIONAL HR	HR Management			

The Fragmented HR Systems Landscape

In most companies, the main talent functions shown in the diagram, operates as a silo with its own sub-organisation, functional specialisms, language, processes and systems. Each also probably works with a range of specialist service or system providers that do not operate outside that functional specialism.

This is especially true for both recruiting and learning, which also have specialist applications for managing or delivering specific sub-tasks. For example Learning will not just be the Learning Management System (LMS), but will also include assessment tools, content delivery platforms, authoring tools, and virtual classrooms. Recruiting may include agency recruitment systems, job boards, social tools such as LinkedIn, applicant tracking systems (ATS), video interviewing, and assessment tools.

In larger enterprises this becomes even more complicated. Different country or business units often have their own systems and suppliers for doing the same tasks. Relatively few large companies truly have a single system for even managing the main HR and talent processes. According to our research[3], 67% of organisations have only partially standardised HR systems; only 20% are 'very standardised'. That's for core HR – let alone for the full HR suite including talent sub-functions.

[3]*HR Tech in Europe: The Critical Realities for 2015 – Fosway Group*

Connecting People Data

So the assumption that a single HR suite manages all HR, Talent and Learning processes is not the dominant reality for companies today. Whether you have a single HR suite, or a core HRMS and best of breed applications, when you count in all of the other HR related systems such as payroll, time and attendance, workforce planning, recruiting and onboarding, learning management, e-learning creation and delivery, assessments, virtual classrooms, compensation management, and HR analytics tools, everyone has the problem of how to integrate the underlying HR data and HR processes across this full spectrum of applications.

Why do we need to Integrate HR Data?

If the reason HR systems are fragmented is because the HR function and sub-functions are fragmented, why do we need to integrate HR data?

This is a good question, but the answer is fairly obvious; the success of HR is not really measured in the success of its sub-functions, but in the overall impact it has on the business. Recruiting more people is irrelevant if those people don't perform or leave. Training staff more doesn't necessarily mean they have the right skills to do the specific job they need to do next week or next month. Retaining your best people is a function of more than paying them each month. Making sure we have the right people, working in the right way, and managed in the right way requires us to connect information about employees from across all parts of the HR landscape.

The business pressure to be able to access and connect this data together is stronger than ever.
Here are some of the reasons why:

PEOPLE ARE YOUR ONLY ASSET; for the majority of businesses, their people are their biggest cost and their biggest value added. Whilst we might recognise this, working out how we maximise the value of our people is very hard to measure and manage	**EFFICIENCY AND COST;** there is ever greater pressure to get more work done with less people – maximising the productivity and efficiency of people resources is more critical than ever
PERFORMANCE FIRST; traditional models of performance management have proved to be artificial and inflexible – relating performance to day to day work processes and feedback	**WAR FOR TALENT;** acquiring and retaining key talent is a top focus for many organisations – identifying who that talent is, as well as how to retain and develop it requires a more holistic view of your people, what they do, and why they work for you

Ultimately, the bottom line is that HR is not just expected to track and record people data, it is expected to be able to use that data to drive positive outcomes for the business. That means being able to cross-integrate data across the fragmented HR landscape, and between HR systems and work systems.
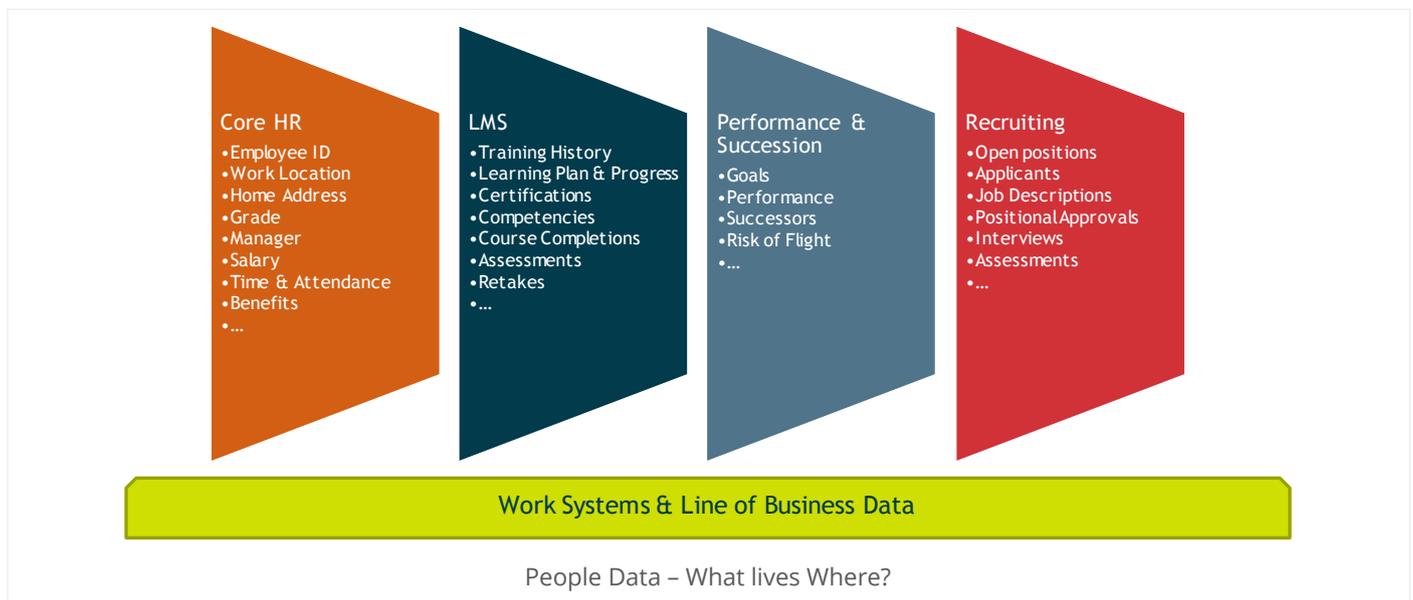
What Data lives where?

As we described in the previous section, there are many different HR systems and processes, and our people data is spread across them. The core HRMS is viewed as the 'system of record' or master data repository but in fact only contains a small subset of the information, often focusing on the transactional data used to track their basic employment, such as name, ID, location, home address, pay information, manager and so on.

Much of the key data needed to determine what they do, what they could do, and how well they can do it lives outside the core HRMS.

The following diagram is a simplified summary of how this will look in many organisations.

Core HR
- Employee ID
- Work Location
- Home Address
- Grade
- Manager
- Salary
- Time & Attendance
- Benefits
- …

LMS
- Training History
- Learning Plan & Progress
- Certifications
- Competencies
- Course Completions
- Assessments
- Retakes
- …

Performance & Succession
- Goals
- Performance
- Successors
- Risk of Flight
- …

Recruiting
- Open positions
- Applicants
- Job Descriptions
- Positional Approvals
- Interviews
- Assessments
- …

Work Systems & Line of Business Data

People Data – What lives Where?

Some important examples of this are:

- An employee's skills and competencies will probably be in the learning system
- Their job title will be in the HRMS, but their job role and KPIs will be in the performance or talent management system
- Their specific goals are in the performance management system
- Their training certifications (i.e. what they have been shown as being trained to work on) are held in the learning system, and this may explicitly limit what work tasks they are legally able to do in work systems
- An employee's previous work experience and skills information before they joined the company probably lives in the recruiting system

- Who might be the best people to fill open positions are not just in the recruiting system, but in the internal talent profiles and succession plans
- Key talent information or risk of flight lives in your talent and performance system, but the actions to retain key talent probably is their development plan, learning history, compensation plan and employee engagement
- Understanding where to invest in training to drive increased sales or customer satisfaction means pulling data from sales and customer systems, learning and performance systems.

These are simple examples, but it is obvious that they have a major relevance in working out who the right people are to work on the right things. Connecting people data across the fragmented HR systems and process landscape is critical, as is connecting it with the systems of work.

The Benefits of Integration

Integrating these disparate HR, talent and learning systems brings many benefits.

- Clearer links and better continuity between the individual talent elements
- Increased automation of talent processes as a whole, and improved efficiency of operations
- Improved user experience, lower learning curve and higher adoption throughout the talent lifecycle

- Reduced duplication, more accurate talent data and ease of sharing talent data (currently seen as poor in most organisations)
- Better management information and analytics
- Richer discussions about the capabilities of the business
- Improved operational performance and ROI from the HR function

Not integrating them also leads to many problems!

A Focus on Learning

Whilst the majority of this paper so far has been focused on the whole HR systems landscape, in this section, we will focus more specifically on learning data and the central role that plays in both the broader talent agenda, and in connecting with work processes and systems.

Integrating the component processes across the Talent Lifecycle needs to be about more than improving HR processes for measuring and managing your people, it needs to also be about actions to improve business performance today and in the future. Successfully managing talent is about more than "measure and manage", it also has to be about actions that develop and increase the effectiveness of the talent. Learning plays an essential role in the talent process but is often overlooked by HR; high quality learning is the engine room of effective talent development and a key factor in both attracting and retaining key talent. Learning touches, and can therefore drive greater value to, all parts of the talent and work cycle:

- Learning via induction is critical to onboarding new recruits and reducing time to competency
- Learning is key to ensuring your people are capable and compliant
- Learning is core to developing existing staff and building future skills
- Learning is central to individual career advancement and for building organisational capability
- Learning is a key tool for raising performance
- Learning opportunity is a critical factor in employee retention

The central role that learning has in the talent and business cycle, can also be illustrated by looking at the typical interfaces that an LMS has within the broader corporate infrastructure. Whilst HR leaders often simply assume that an LMS will just interface with their core HRMS, in reality, this is a massive oversimplification. The LMS will interface with many applications, including;

- Core HR and other transactional systems (e.g. Finance)
- Intranet portals and security management systems
- Other learning portals, learning applications and content
- Talent management applications such as performance management, or recruitment systems
- Basic work systems such as e-mail and calendar
- Line of business applications

The following is an example of an LMS integration diagram for a real company (large enterprise).

LMS Integration: A hub for Talent and Work processes
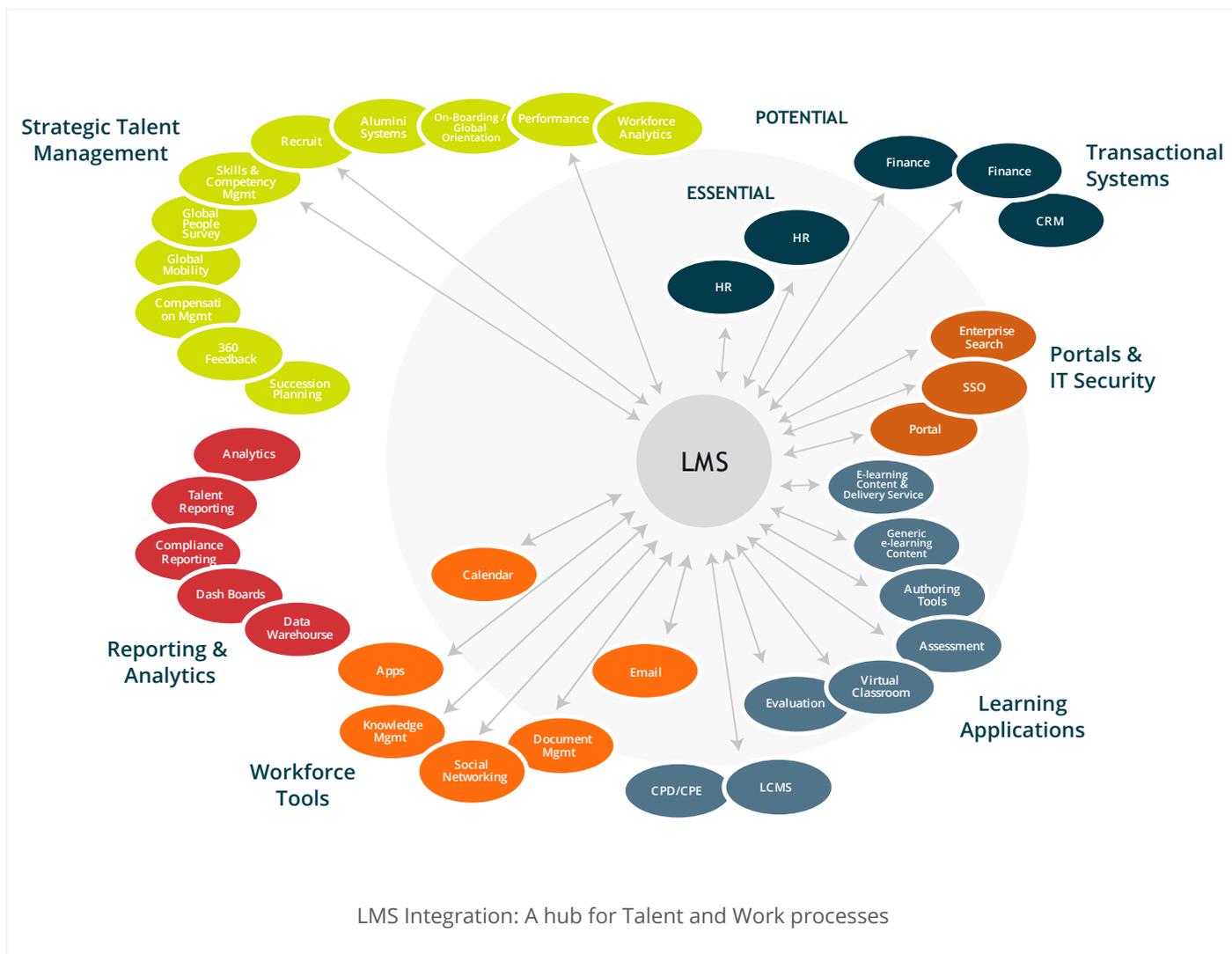
Whilst it looks complicated, in reality it is simplified, as the company in question in fact had multiple versions of many of the systems shown as a single bubble, including multiple core HR systems and finance applications.

In overall terms though, the above integrations can be grouped into three main headings:

1. Integration with other **Learning Systems** and content, of which there are many.
2. Integration with **Talent Management**, of which there are a few but important in connecting the user experience and data model for managing talent.
3. Integration with **Work Systems**, of which there are a few but growing rapidly in number, and which are critical to the business including assessment of competence to perform defined work tasks and other

This can summarised visually in a similar way to the previous diagram:

LMS Integration: Key Contexts and Drivers
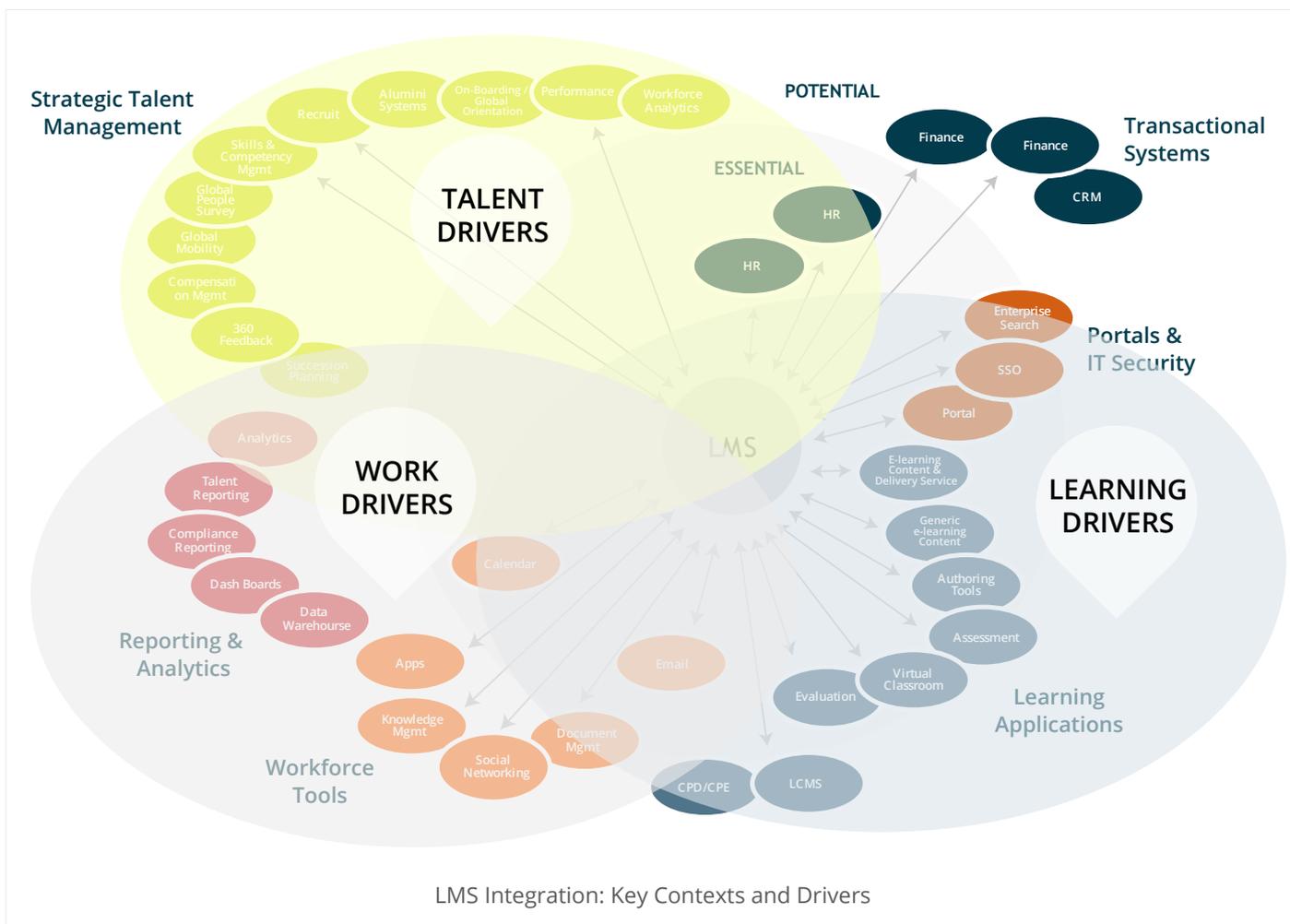
Specific examples for the integration between the LMS and other talent and business systems are provided in the appendices.

Integration Strategies & Outcomes

Having discussed both what we are integrating, and why, we should now spend a little time also talking about how. It is not the purpose of this paper to explain systems integration in any deep technical way. But it is relevant to have a basic understanding of the primary options, not least so you can work with your IT colleagues to build a successful strategy and outcome.

The key message is that HR data integration is not just an IT issue, it is an HR issue. HR and Learning leaders need to work with IT colleagues to build a more integrated people systems landscape. To do this, you need to have a clear understanding of desired business impact not just IT requirements.

The final part of this section will also talk about how integration is changing with the adoption of Cloud technology.

Approaches to Integration

In simple terms, there are three main categories of integration that can be applied between different systems in the HR landscape. These are:

1. Batch data transfer between systems, whether scheduled or ad hoc
2. Transactional integration with live data using programmed interfaces (APIs or WebServices)
3. Integration within functional areas which use specialist functional standards

The simplest and most controlled way of bringing data from one system to another is do it in discrete controlled blocks of data import or export. We export the data from one system as a group, move the data to another system, and upload it in on mass. This is known in IT terms as a Batch Data Transfer. In essence,

*   Batch integration is Periodic rather than real-time.
*   It involves sets of data rather than individual data records
*   Incoming data is processed with associated business rules to validate incoming information and apply business rules or additional context or needed by the receiving system

The following diagram is an example of a batch data import process.

Batch Data Transfer Example
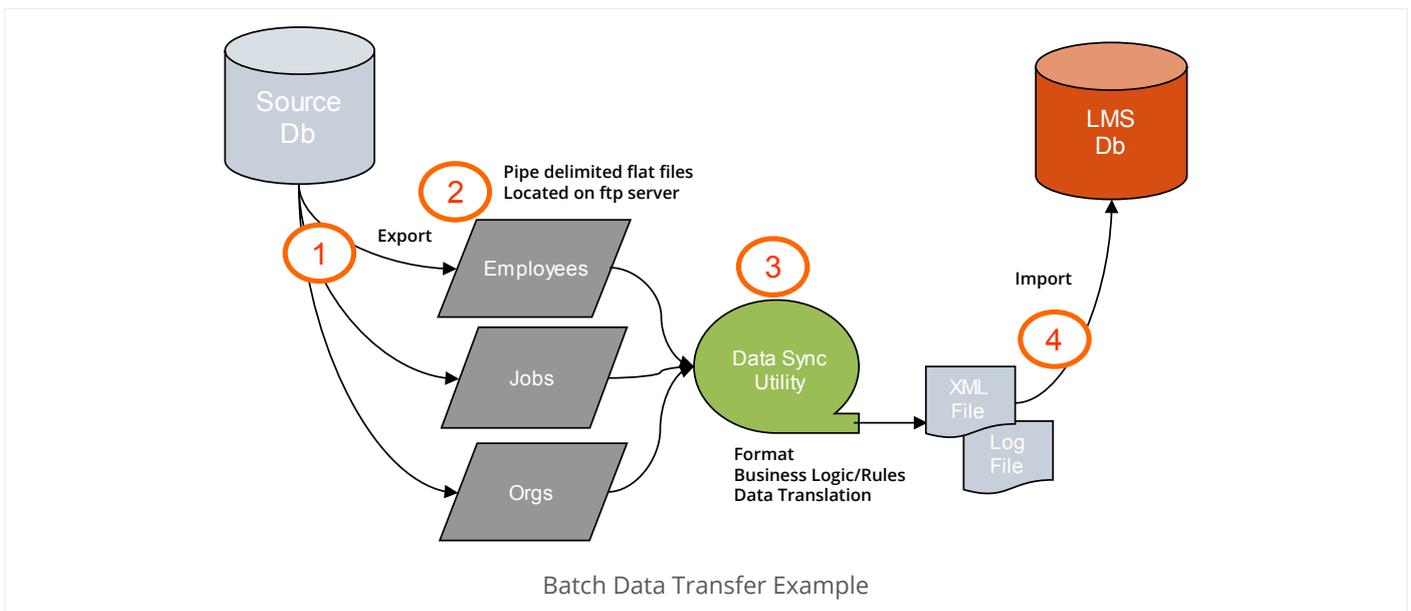
Transactional integration is very different. Rather than loading lots of data at once, transactional integration transfers data records individually using a procedure call, normally via an Application Programming Interface (API) or WebService. As well as the volume of data being transferred being much lower, transactional interfaces also happen in real-time, normally based on an event trigger or requirement for the data, rather than on a periodic basis for batch transfer.

Transactional interfaces are therefore all about current data, but they require individual procedure calls for individual data exchanges. As well as having an implication for system performance, this also can be a concern for data integrity or security. Batch upload is a controlled process with associated macro-level security controls. Transactional integration is controlled at the micro-level, i.e. individual procedure calls.

Transactional Integration Example
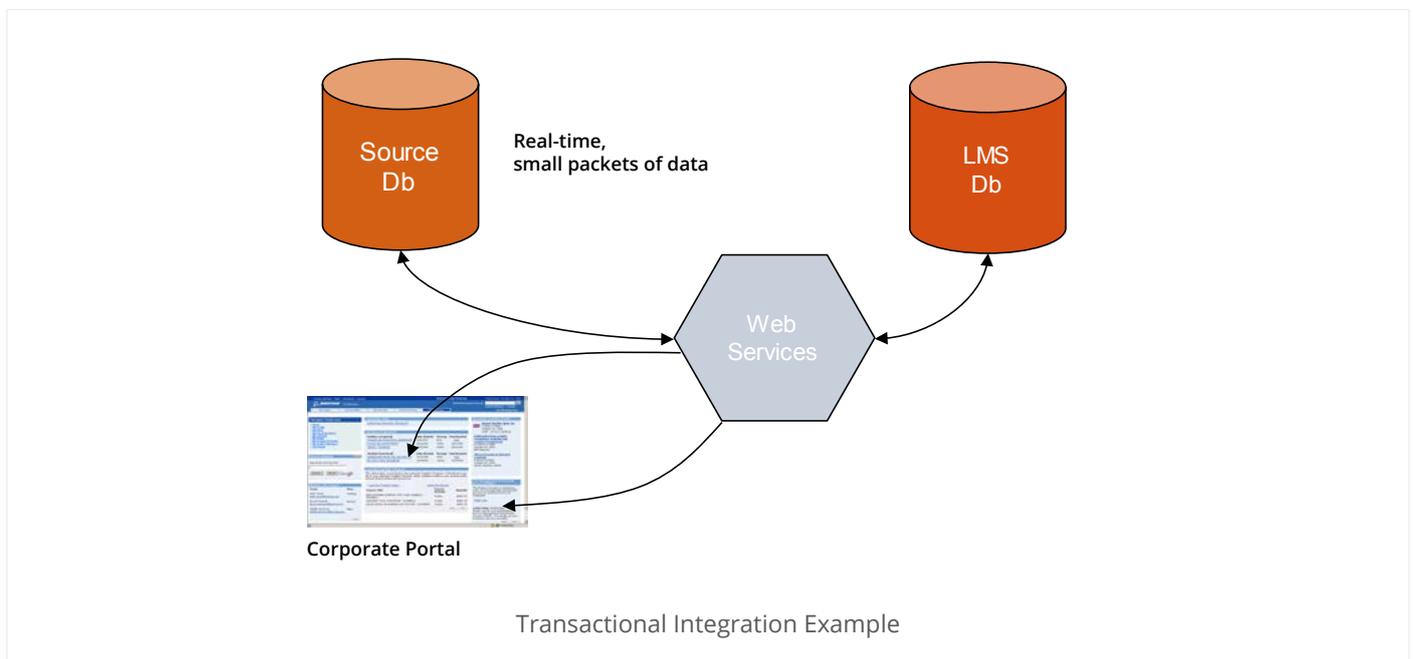
The final main type of integration is context based and is more relevant to integration between sub-systems in the same functional area, such as between learning sub-systems or between recruiting sub-systems. The more complicated functional areas have their own technical standards for integration as well as the general mechanisms mentioned above.

For example, in learning, there are integration standards for launching and tracking e-learning content (AICC, SCORM), interfacing with virtual classroom tools, importing assessment

results from a testing engine (QTI) and for integrating LMS platforms with LCMS and Authoring Tools (PENS). Each of these standards has its own defined integration and data exchange process, and the associated applications will have pre-built interfaces to manage them.

Whilst this form of integration may be less visible to HR leaders than say, the integration between the HRMS and the LMS, but it is actually the most common form of integration and the most complex. But because it is in-built to the learning systems, often HR will ignore or be ignorant of it.

How Cloud changes the Integration Landscape

With many of HR systems moving to the Cloud, the integration landscape has changed significantly. This is not so much because the technical approaches to integration change, although they do slightly (but that is beyond the scope of this paper). The biggest change is that:

- Cloud systems are located outside of the customer premises and accessed remotely via the Internet or a corporate intranet
- Cloud systems are configured not customised and therefore integration connectors can be more standardised

Both of the above impacts the way in which we integrate between systems. The external location of the system impacts both process and the controls. Both batch and transactional interfaces are still possible, but the way they work (and the type of procedure calls used) are slightly different. If the Cloud system is a Public Cloud, i.e. accessed by other companies as well, then clearly additional controls are required to ensure only the right people or processes have access or can update your data. If a Private Cloud, normal IT paranoia still probably dictates similar controls, but access to the network is theoretical more secure in the first place.

The impact of the second is also important. Basically, Cloud-based learning and talent systems will always have to integrate with other people data, and do it through a standardised approach because they cannot be customised. So why not package the integration process into a standard connector that can be plugged into any appropriate source? This is a critical change and has led to the vendors creating standard connector tools used by each customer to connect to their HR data or talent systems.

The advantage for you the customer is these connectors simplify the work for you to create the interface, and are guaranteed to work, assuming you point them at the right data your end. The hard work to create the integration tool has been done already, and the connectors are supported directly by the provider. If there are any issues (other than for the quality of your data), the supplier has to fix them very quickly as they will impact many, if not all, of their customers.

In Conclusion

This paper focuses on the drivers and realities of HR integration. As we have described, HR systems are not a singular HRMS; but are in fact many different systems, covering core HR, but also a range of other talent and learning processes. Your people data is spread across all of these systems.

Whilst HR leaders will often focus on integration with the core HR system, it is in fact much more complex.

Much of the critical data needed to support key talent and work processes is not in the HRMS at all, but held within one of the many other systems. Getting access to that data on a timely and accurate matter is really important for operational work processes as well as for HR and talent processes.

A really good example of this need relates to learning data within the LMS. Whilst the LMS will need employee information from the underlying HR system, the LMS also acts as a hub for data with other learning applications and content, talent management systems and work/line of business applications. There are many examples of this because of the central role that training and learning has within the operational side of most businesses.

The Cloud will become the primary deployment approach for HR

The other key factor to understand is the impact of the Cloud. Whether you have an on premise HR Management System, or a full HR Suite, you still will have multiple systems across the HR landscape. For many companies, their learning, recruiting or performance system will already be in the Cloud. For others, that will be the direction of travel. The Cloud is already the dominant deployment approach for new talent and learning systems, and core HR is now following as well. With the majority of software vendors now being focused on the Cloud as their primary or exclusive offering for the future, understanding how integration is going to work in the Cloud is going to be critical.

The growth of Cloud HR is driving more standardised system integrations

Whilst moving HR data to the Cloud, does generate concerns, not least for data security and privacy, it also brings many advantages. Cloud systems cannot be customised, only configured. This leads to the vendors to create pre-built connectors for all major points of integration, simplifying the integration process significantly, and also ensuring properly supported interfaces and integration tools.

For HR and Learning Leaders

Creating effective ways of integrating your HR, talent and learning systems with each other, and with work systems is therefore critical to maximising the value of those systems, and in consequence your investment in people. Integration is a critical issue because of the complexity of the HR systems landscape itself.

With many separate systems being used for core HR processes as well as for learning, recruiting and performance, effectively integrating those systems is key to create a seamless user experience, connected work processes and effective HR analytics.

HR data integration is an HR issue, not just an IT issue!

It is critical for HR and Learning leaders to work with their colleagues in IT to focus on business outcomes, not on IT requirements.

Engaging positively in this process is a requirement for all HR functions. Only by elevating the conversation from what data do we need, and focusing on the quality of experience and impact we are creating, will HR build truly transformational solutions.

Appendix 1

An Integrated Ecosystem: Who owns and manages which kind of data?

One of the biggest challenges for companies has always been the optimal management of human resources.

To better manage their human capital, organizations adopt transactional information systems that, in most cases, take care of personnel administration. Therefore the focus is on bureaucracy rather than on management and talent development.
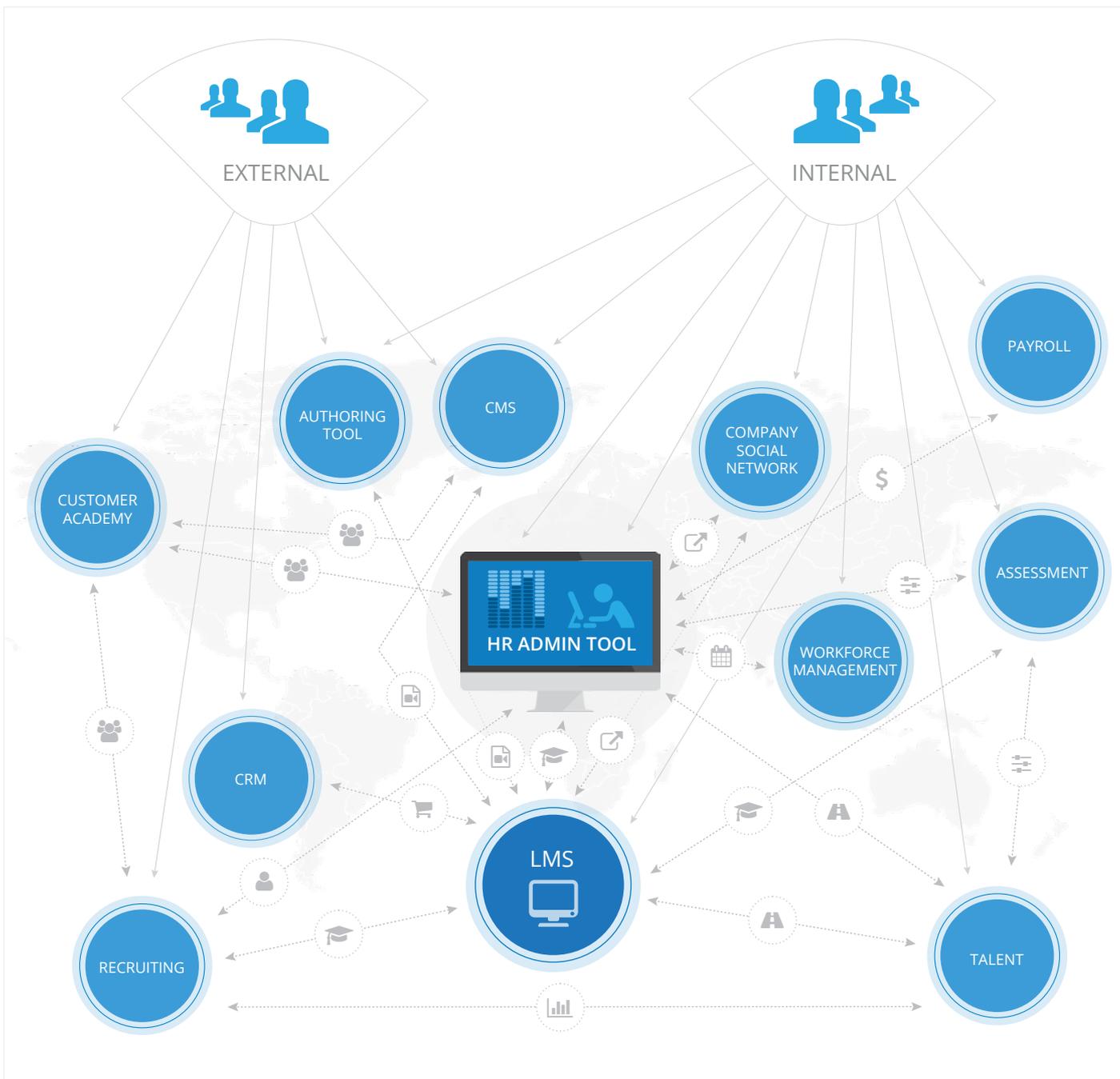
The traditional dedicated information systems for HR management, such as HRMS or ERP, are usually monolithic and installed on the client's data centre. These usually are "super systems" capable of performing many business functions and are fully integrated with the business' internal modules.

These monolithic systems are frequently unable to perform one or more of the many functions of HR unless end-users decide to apply strong (and expensive) customizations. So here we see the need for companies to adopt several vertical HR systems, one for each specific branch, and integrate them.

Moreover monolithic HR systems, offered by big multipurpose vendors, do not follow new trends introduced by SaaS / Cloud products. They attempt to do so but are well behind the rest of the market.

LEGEND

👥	Candidates	📊	Data Analysis	$	Payments	📖	Learning Plan
🛒	Sales	🖼	Learning Content	📅	Scheduling	↗	Information
👤	Individual	🎓	Test/Assessment	⇄	Competencies		

EXTERNAL

INTERNAL

CUSTOMER ACADEMY

AUTHORING TOOL

CMS

COMPANY SOCIAL NETWORK

PAYROLL

ASSESSMENT

HR ADMIN TOOL

WORKFORCE MANAGEMENT

CRM

LMS

RECRUITING

TALENT

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SaaS/Cloud Advantage against Monolithic Systems

Simple, pleasant, slender, minimal, customizable, and extensible graphical user interface	**Mobile friendly or native mobile**
They evolve quickly, release new functionalities, integration, growth	**Maintain corporate identity by adopting strong customization and branding**

HRMS:

The first step that supplier companies perform for traditional HR management, through the HRMS or ERP, is "Employee Master Data" implementation. This involves mapping out their duties, in order to instantiate the organizational chart within the system.

At this stage this data has been obtained by using a centralized user mapping that starts from the HR system and is then extended to all other application systems through Single Sign On / Single Log In.

This means that it is possible to export the user database in real-time and synchronize all applications using the same password for all environments (or even not having to authenticate when moving from one application to another).

Attendance Management:

The following step is about implementing the time and attendance system that allows the HR administrator to monitor working hours, breaks and vacation periods.

Generally, companies wanting "time and attendance" system implementation decide to integrate HRMS/ERP with a dedicated subsystem from an automatic attendance check through RfID, magnetic card, biometric or Smartphone app.

Payroll:

Afterwards, the enterprise implements the payroll system or, rather, the software/module that organizes all activities related to employee payment activities and tax filing.

These activities should include the monitoring of hours, wage calculation, withholding tax and deductions, and also payslip printing and distribution and, finally, employment tax system management.

Due to the complexity and the high operating costs for Payroll management, companies often opt to outsource it. In that case a company's IT has to put in place a reliable interface system between the HRMS/ERP and vendor payroll system. In this case the HRMS/ERP system will be connected to the Payroll system to transfer consumers, data, rules, new employees and resignations.

Talent Management:

One of the most critical processes in the HR administration is Talent and Competency management - the process that takes care of the development and integration of new workers, maintenance and growth of current workers, and attracting highly qualified staff to your company.

Given the amount of data and necessary timeliness to accomplish this process, most enterprises choose to adopt a computerized solution. Most modern applications (typically SaaS / Cloud) usually provide double access to the platform. System administrators can access the talent dashboard and users can see their own statistics, interact with the environment, and view KPI status via a PC, Tablet or Smartphone.

Learning Management System:

In order to improve individual and/or group performance in enterprise frameworks, Talent management systems are used to manage the learning and development process through LMS integration. They provide the training content and assessment tests necessary for a learning program.

In a scenario like this, the Talent management system sends data to the LMS (user, role, profile, learning plan) based on user profiles, and will suggest e-Learning, blended or ILT courses that better match the employee's profile.

Incentive Solutions:

Organizations that try to maximize employee performance as much as possible usually put in place an internal incentive process. This process may be a monetary action or something else, intersecting performance data with wage policies and learning history generated by LMS integration.

Data aggregation that has been driven by KPI include:

Sales results [from CRM]	**Completed learning plan [from LMS]**	**Career achievement evaluation**

On the basis of the results obtained, the company management - through the Talent management platform - can set up an individual development plan (Career development) in order to manage learning activities. It can even put in place the required activities to promote and guarantee future growth for the employee. This is made possible by the data generated by integrating the LMS and the HRMS/ERP.

Occasionally, due to retirement or different professional paths taken by employees, the company has to think about how to manage employee turnover (Succession planning). The company needs to identify and train internal resources with the aim of employing them in key positions in the company.

By overlapping data inside the Talent Management System (TMS), together with employee master data extracted from the HRMS/ERP and the learning results from the LMS, the company, via its TMS, will have a great decision tool to help it make choices in the HR resource management branch.

If there are no internal resources available, by linking the TMS with a Recruitment system, the company will automatically obtain the profiling of suitable candidates to fit the position.

Competence management is among the processes managed by TMS platforms. This software module tends to have a comprehensive and multidimensional approach and includes tools such as competency management, skills gap analysis, succession planning, as well as analysis of the skills and profiles.

Principally, it focuses on creating a sustainable level of expertise, as well as recording and tracking learning resources in the LMS.

Gap Analysis:

Gap analysis is one of the tools available to HR departments to effectively manage the skills and competence of employees. This tool, by leveraging data extracted from HRMS/ERP and intersecting it with the TMS database, is able to build the business skills/competences assessment.

Following the outcome of the skills/competences assessment and overlapping this with what is required by the company, the system will identify and delineate the gaps to be filled. Moreover, due to the LMS's features, it will define the necessary actions to be taken in order to improve employees' skills and competences.

In order to manage learning processes through the Learning Management System or, rather, the application platform capable of delivering e-Learning courses, it is possible to deliver online courses, blended courses and ILT courses, mapping and tracking all the activities including evaluation test results.

When employees access the LMS and attend courses, they increase their skills. Obtaining certification from these courses and expanding their curricula provides data which populates the **Talent Management System** database.

HR departments use data obtained from LMS, the skills and competences, to realize a comparison between expected and effectively supplied training. They can pass all this information to the TMS and the competency management system and, finally, fill training gaps for employees or a group of employees.

Authoring Tools:

The Learning Management System, by its nature, administers online courses (learning objects). It organizes, delivers and tracks learning activities.

Online courses, typically, are multimedia objects of varying complexity that include learning contents and multimedia interactions. To generate this type of training material it is necessary to use software called an Authoring tool. This kind of software allows an instructional designer without any programming skills to create multimedia learning contents and interactive contents for a rewarding and interactive learning experience.

In the online learning field, the file format used for interactive multimedia learning contents are SCORM, TinCan and AICC. These kind of file formats permit platform-independent content exchange, enabling the tracking of all instructional activities and evaluation test results that go to populate the LMS database.

In particular, the tracking records (often sent to the Talent Management System and/or business intelligence systems) allow you to track:

☑ **Course progress status**	✏️ **Interactions and tests results**
✔ **Course completion**	📅 **Maintain Fruition period**

Content Repository:

The content repositories are digital content stores with an associated set of management data related to the LMS and they can become a valuable source of learning contents.

The next few years should see the merging of content repositories of teaching materials and knowledge stored within knowledge management systems. The standard categorization of educational contents allows an immediate categorization and research of the training content itself.

Recruiting System:

With the advent of the Internet, HR departments have radically changed recruitment methodology, acquiring Recruitment systems or, rather, systems capable of managing the process known as "E-recruitment" for candidates' selection.

Companies' adoption of these systems has meant the transfer of many of their processes online. This involves change management and impacts on organizational models.

The online process mentioned above, compared with more conventional methods, is less time-consuming and does not limit the search from a geographical point of view, because it supplies an integrated pre-assessment system, adds automatic publication on social networks and manages candidates' feedback.

The automation of all these labor intensive activities allow the recruiter to focus on core business activities.

Operating the selection process through Recruitment platforms has automated the process of profile publication, so that it can be generated through integration with the TMS: from the receipt of the application, to the interview and, finally, with issuing the job offer.

The recruitment process can become more efficient by integrating the platform with the other HR ecosystem application instances.

The integration between recruiting platforms and social networks allows the company to automatically trigger Recruitment workflow by publishing the required profile on any social network, managing the application and providing immediate feedback.

In recent years, the information systems evolution has led companies to choose a much more vertical and specialized solution to better face the challenge of human resources management.

In Summary

The boost given by Cloud, Software as a Service and API integration, makes the choice of the classic monolithic HRMS or ERP systems less and less affordable for businesses, both in economic and in performance terms.

The synergy between interconnected HR applications guarantees maximum efficiency in personnel management processes. Today's HR management dynamics require information systems to be as receptive as possible and quick to understand and satisfy the enterprise's and users' needs.
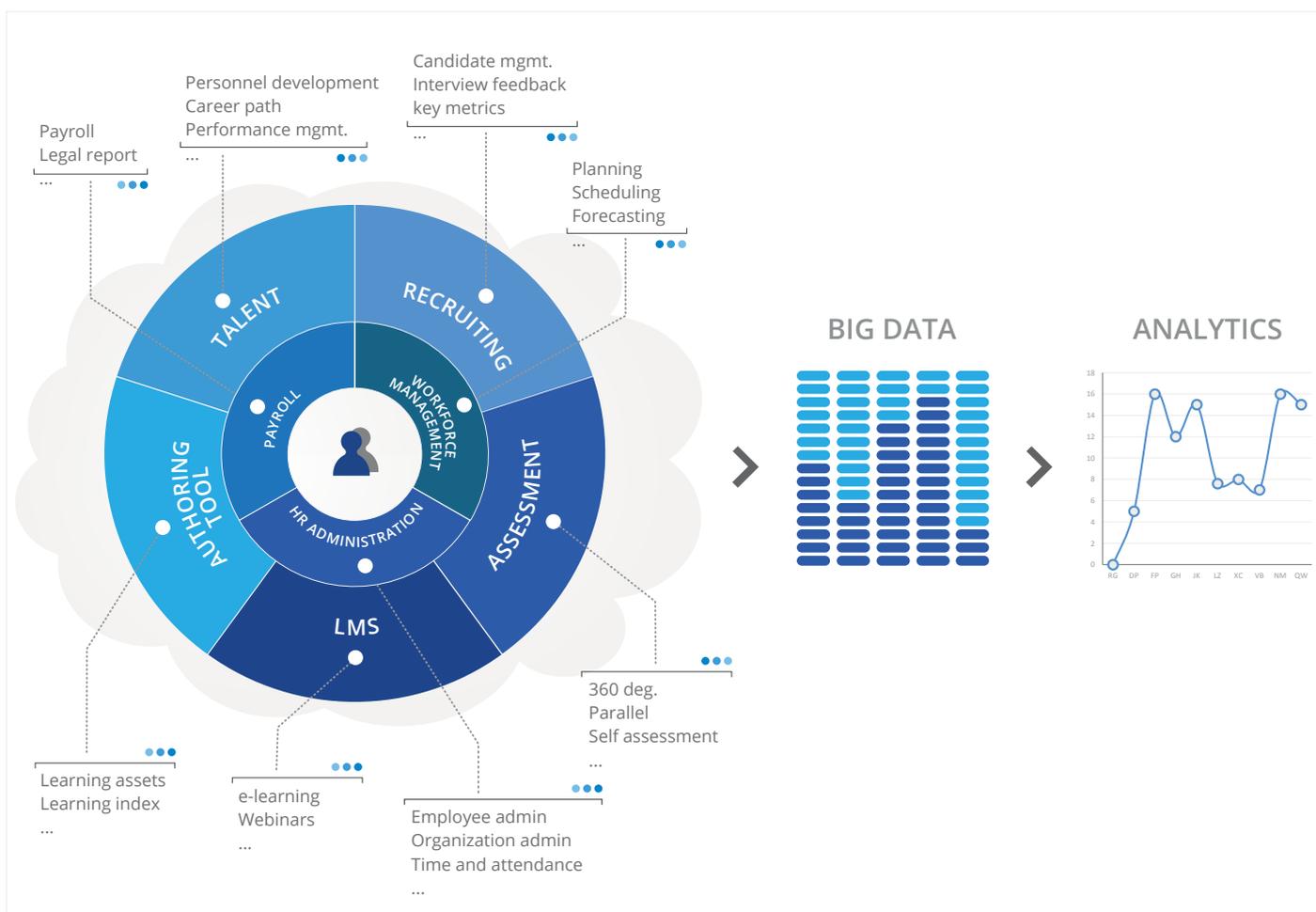
Appendix 2

The benefits of integrating with non-HR software

This chapter outlines HR system integration user cases (involving the integration of external systems and a Learning Management System (LMS)). In particular, it will show the benefits of integrating a SaaS/Cloud application and related business data systems.

These benefits are linked to having easy access to learning contents, linking the "suggested" courses to other applications (such as CRM, CMS, HelpDesk/ Ticketing system) and amplifying the concept of "Everywhere learning".

Single Sign-On:

Single sign-on [SSO] technologies play an important role in the integration process between several platforms. They allow a user to have one common identity when using any of these platforms. This is done through an authentication server or services used by the application in the Cloud. Once the user's identity is established, it does not need to be re-established when that user wants to use another application or platform.

The LMS system has to manage different authentication scenarios including:

A standard enterprise internal system that allows users to be authenticated through a secure protocol to access an external cloud application	**Outsourcing an SSO system (Microsoft, OKTA) that manages authentication by using a Cloud server**	**A custom secure API for authentication**

The principal benefits of using SSO are:

Password fatigue reduction	**Erasing typing user and password time**	**Reducing ticketing time for password reset**

In this scenario, the SSO system represents the focus for integration and for user database replication with the LMS.

CRM:

Almost all CRM software is a Cloud application (SalesForce.com has been the precursor). Putting an LMS SaaS platform in communication with the CRM software, via an Application Programming Interface (API), provides greater strategic benefits for the organization, from the point of view of sales – although, for this to happen, the organization needs to be sure that its sales department staff is correctly instructed in the appropriate procedure.

LMS-CRM integration can provide a detailed view of learning status and put in place a personnel development path designed around real company needs.

This is particularly beneficial where a partner manager has to verify and guarantee that all the partner network sales agents are correctly instructed.

Data generated by LMS-CRM integration provides trends about courses' sales results. This allows an organization to define its user target, based on users' needs and preferences. It also helps in providing information on which to base marketing campaigns.

It speeds up traditional learning contents sales business flow and allows "click payment" by using same technologies adopted by credit cards and payment gateways.

Another benefit that comes from user cluster definition is targeted mailing-list generation for marketing automation tools.

This approach makes customer communication more efficient by reducing spam generation to the end-users, ensuring higher response rates for the LMS-CRM provider.

Having accomplished links between the LMS, CRM and e-Commerce, organizations can then integrate finance and controlling areas by linking the ERP system to automatize the billing process for the contents that have been sold.

Contrary to the traditional system, which is based on comprehensive monolithic infrastructures, using SaaS makes it possible to use different vertical software while keeping the same synergy via the integration of APIs.

HELP Desk system:

While the sales department has to be in contact with actual and potential customers, the organization's Help Desk team is also at the forefront of customer contact. The Help Desk epitomizes the company through its communication style with customers. Integrating a training portal with the ticketing system allows the organization to:

🖥️	👥
Instruct the Help Desk team without them leaving the working environment – using an interfacing ticketing system via additional widgets or dashboards that show the Help Desk operators' learning path, work progress and related deadlines	The Help Desk team could also provide learning contents to end-users, via learning pills accessed via a MOOC. This not only provides customer support but also encourages customer loyalty

Content Management System:

Content Management System (CMS) technologies are usually adopted by the enterprise for internal portal implementation. In this case, LMS integration is the easiest way to simplify employees' and managers' work by creating a single point of access.

In most cases, LMS products offer "White-labeling" functionalities. These allow the company to harmonize the integrated systems (LMS-CMS) by replicating the same exterior canons, branding and "look and feel" used by their portals.

Another advantage – especially in a business-to-consumer (B2C) context - is that registered users can access the eLearning platform as a MOOC.

In recent years, Corporate Social Network technologies have brought about a new enterprise communication paradigm and, in the process, are replacing the traditional company internet.

LMS integration allows employees access to learning resources through a single point of access. Moreover, thanks to LMS gamification functionalities, employees' learning paths are now more engaging and compelling. They can now share their achievements and/or create workgroups about a specific course.

About Fosway Group

At Fosway Group, we understand that developing and engaging people is how complex global organization deliver performance and achieve success. Just as every employee's talent journey is unique, so is every organisation's people strategy.

Fosway Group's analyst and advisory services deliver the insights your organisation needs to achieve results and eliminate risk. We know that every aspect of next generation HR and talent are more intertwined than ever. When you work with us, you accelerate your insight and make better decisions.

We're Europe's #1 independent HR analyst, and just like the Roman road we draw our name from, you'll find that we're unusually direct. We don't have a vested interest in your technology or consulting choices. You can depend on us to tell you what you need to know to succeed.

Example clients include: Alstom, Aviva, Boots UK, BP, BT, Centrica, Deutsche Bank, Faurecia, HSBC, International SOS, Lloyds Banking Group, Novartis, PwC, Rolls-Royce, Royal Bank of Scotland, Sanofi, Shell, Swiss Re, Telefonica, Thomson Reuters, Toyota Europe, and Vodafone.

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About Docebo

Docebo (from the Latin "I will teach" and pronounced "Docēbō") is a pure Cloud Learning Management System (LMS) that over 28,000 organizations have used globally since 2005. Sold in over 70 countries worldwide and available in over 30 languages, Docebo truly exemplifies internationalization.

Docebo has been ranked in the world's Top 10 for SaaS elearning solutions providers, and in the Top 3 for B2B LMSs.

Docebo is generally regarded as one of the industry's most comprehensive solutions for training management, and has been chosen by some of the world's most respected companies to achieve operational efficiency.

Backed by venture capital, Docebo has offices in Europe, Asia and North America, and is currently one of the fastest growing learning technology companies in the market.

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