THE STATE OF HRIS – APPLYING IT TO HR AND TOTAL REWARDS

REFLECTION PAPER

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Introduction

One of the hottest topics in modern HR and Rewards management is, undoubtedly, how to apply Information Technologies (IT) into it – more so considering that businesses worldwide, and indeed workforces, are becoming digital themselves.

As it is brilliantly stated by the MIT ("The Work of the Future: Building Better Jobs in an Age of Intelligent Machines"): "**we have no time to spare in preparing for (...) building a future for work that harvests the dividends of rapidly advancing automation and ever-more powerful computers to deliver opportunity and economic security for workers**. To channel the rising productivity stemming from technological innovations (...), we must foster institutional innovations that complement technological change".

Those institutional innovations refer to "labor market institutions by modernizing the laws, policies, norms, organizations, and enterprises that set the "rules of the game" " – which, in our view, clearly implies **digitalization and new technology to be applied into the different fields of people management** (ie HR and Rewards) within companies.

In this reflection paper / study we intend to explore the following:

- A view on the contents HRISs normally have.
- Evolution of global and European HRISs from the 90s until the 2020s.

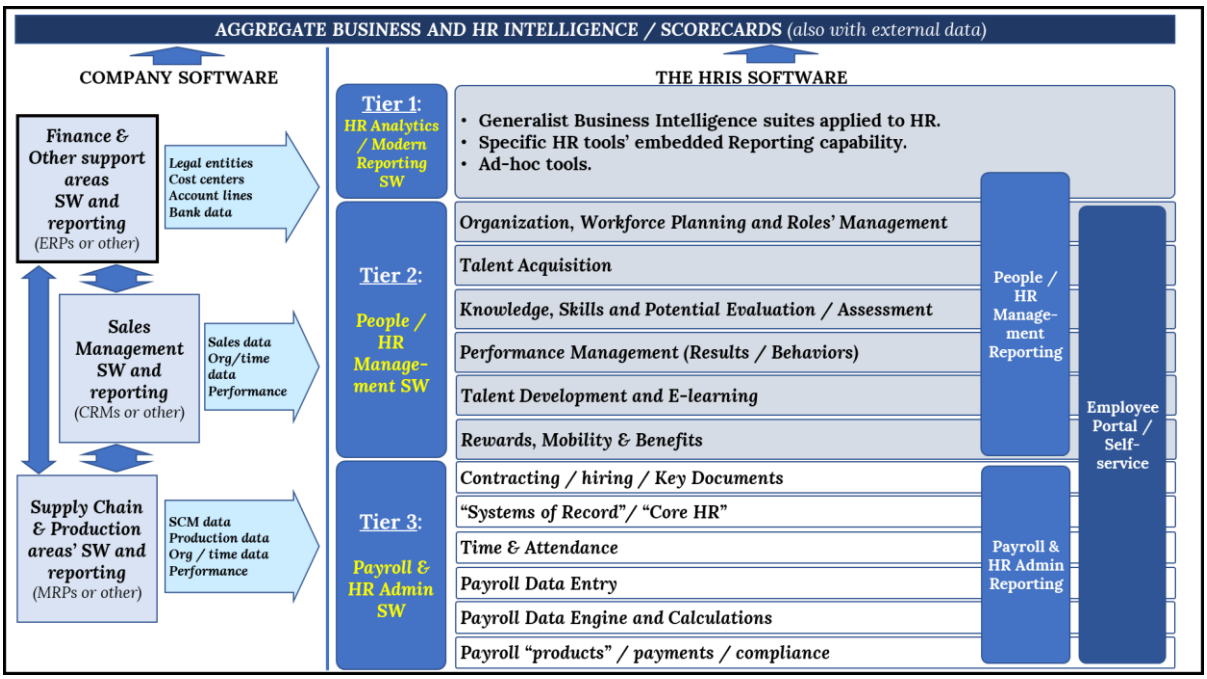
- Some perspective on the current state of HRISs.
- Today's IT aspects that HR and Reward practitioners may wish to consider.
- Possible recommendations and conclusions.

We delve into deeper detail in the sections below, making a reference to Europe without losing sight of global implications.

A view on the contents HRISs normally have

In the following graph we attempt to summarize the content areas that HRISs may cover overall, in part or in full:

CONTENT AREAS COVERED BY HRISs VS. OVERALL COMPANY SOFTWARE



Depending on the software type and related technologies, one, several or all the areas shown may be covered. Sometimes, the discussion may become somewhat muddled, as there are providers that might at times try to convince their clients that the HR management areas to be tackled are exactly the ones covered by the modules or pieces of their specific software / solution, not necessarily the real ones needed by the organization. A classic example is Payroll software or service vendors that attempt to persuade their clients that their software allows true Compensation management – which is obviously a different thing.

But how were HRISs deployed historically? What is the evolution up to the current times?.

Evolution of global and European HRISs since the 90s until the 2020s

In the following table we aim to summarize the evolution of HRISs over time. Prior to the 1990s, HRIS was almost solely about HR Admin and payroll, and some online traning.

EVOLUTION ASPECT	The 1990s	The 2000s	The 2010s	The 2020s
HR and Reward functions' organization and processes	✓ *Usually "islands", not connected well in processes / IT across countries or business units.*	✓ *Widespread dissemination of the centralized Shared Service, HRBP and CoE concepts.* ✓ *More cooperation and integration of HR processes across boundaries.* ✓ *Global HR Heads becoming part of C-Suites / key decision-making.*		✓ *Much more networked, and tech-enabled HR / Reward organizational models.*
HR content Areas covered by a single software	✓ *With very few exceptions, one major HR or Reward content area only – or less (e.g.: payroll, e-learning, etc.).*	✓ *More than one HR / Reward content area.*	✓ *Move to more integrated suites ("HCM"), often covering many or even all HR / Reward areas.*	✓ *Integrated suites - but with emergent apps and connections, many "best of breed" choices.*
Software Implemen-tation and adoption	✓ *HR / Reward functional process analysis and/or reengineering, then adaptation of IT tool to the processes.* ✓ *'Hardcore' programming or at least assisted programming required ("parametrization").* ✓ *For largest apps (HR ERPs), large and expensive 3rd party integrator / implementation teams working for long periods.*		✓ *Predefinition of "best practice" processes into the tool, then configuration, data upload and company adoption.* ✓ *Lighter imple-mentation teams, timing, and costs.*	✓ *Much easier, flexible menus, ready to apply the needed HR / Reward options, or change them as required.*

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EVOLUTION ASPECT	The 1990s	The 2000s	The 2010s	The 2020s
Software and Infrastructure characteristics	✓ *SW within in-house servers (HR ERPs or applications) – unless HR / Reward area management outsourced to a provider.* ✓ *SW updates / upgrades less frequent and with "migration" required.* ✓ *Inter-app communication via rigid, ad-hoc interfaces.* ✓ *Often, software not user-friendly and with limited / non-flexible reporting capability.*		✓ *SW in Cloud – servers, security, and frequent updates with the provider; inter-app connectivity.* ✓ *Improved user experience and reporting.*	✓ *"Tech anywhere", seamless connections to and from apps.* ✓ *HR / Reward tech is user-centric - intuitive and insightful, with profuse AI.*
Provider Ecosystems	✓ *Many fragmented players.* ✓ *Larger companies: basically, Payroll and HR Admin providers, or outsourcers.* ✓ *Large ERP integrators working with specialized boutiques.*	✓ *Growth and industry consolidation via M&A, especially larger Payroll / HR Admin providers going into "advanced" HR / Reward areas, or different providers merging among themselves.* ✓ *Stronger presence of VC / Private Equity, search for Series C / IPOs with providers, generation of an "analyst" community over the HRIS industry – sometimes, external to HR and Reward management functions.*		✓ *Emergence of multitude of new players / 'challenger' apps - not much concerned about past approaches.*
Providers' Business Models	✓ *Sale of Software licenses (number of users).* ✓ *Implementation consulting fees.* ✓ *For Payroll outsourcers, also cost per pay slip (depending on complexity, country, etc.).*		✓ *Subscription to the Cloud app.* ✓ *Configuration consulting fees.*	✓ *Subscription.* ✓ *Micro-payments per transaction?* ✓ *User data capitalization?*

As it happens with most historical changes, **elements of older stages sometimes may coexist with new ones, even inside the same company** – different industries and geographies may have a combination of what we described above. But **we expect that, over time, the "2020s style" will become the norm**.

In Europe, at the end of the 1990s there were many HRIS projects driven, at least in part, by both the "Year 2000 Bug" (Y2K) and by the coming of the Euro as currency with decimals. Once those projects were done, rapidly (early 2000s) we got into the first major

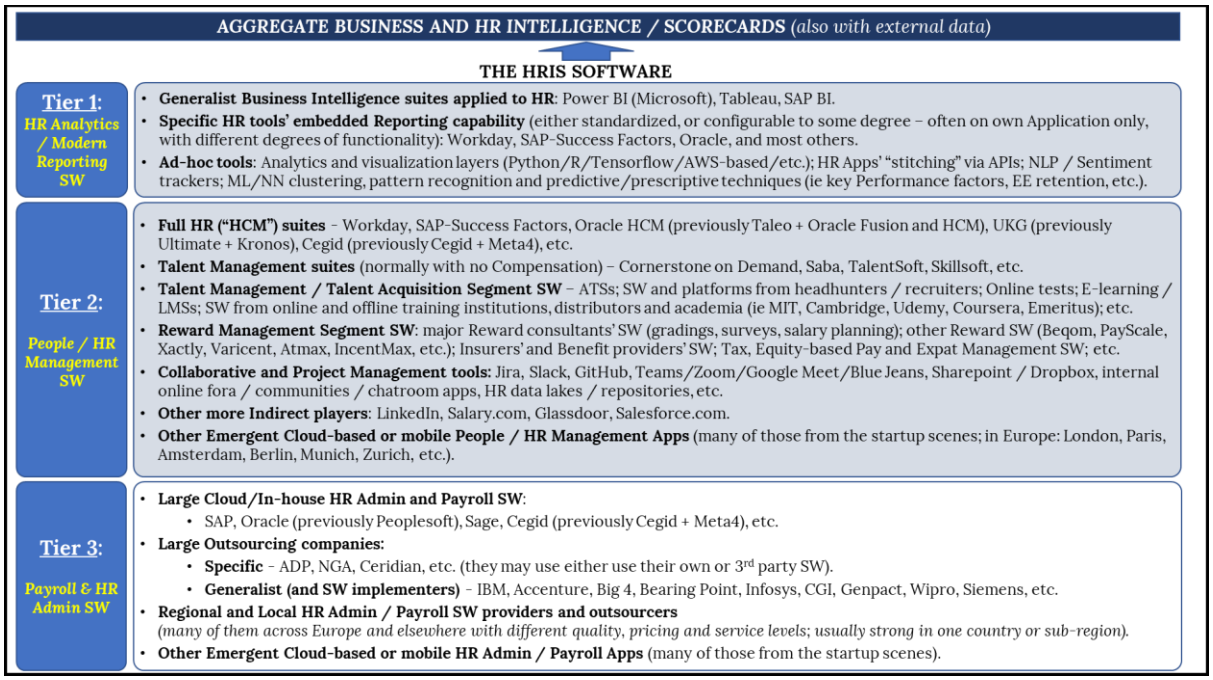
Internet era. But with the "dotcom" bubble burst, the Enron scandals, "war on terror", the world recession, and technical limitations (bandwidth and others), European HRIS implementations were still rather done within in-house servers, or outsourced to providers (payroll and others), save perhaps for e-learning suites, evaluation / tests' software, and the first Applicant Tracking Systems for CV / candidate management. **An important factor here was to consider the cultural, tax, legal and currency differences across the European countries, which made complex tech rollouts quite challenging**.

Economic growth in the middle of the 2000s and Shared Services centers' deployment slowly saw a relative dominance of SAP HR in large Continental Europe companies, but also the emergence of a myriad other country-specific contenders, some of them later merging among themselves. **End of the 2000s and beginning of the 2010s meant a change towards Cloud and Mobile – a new approach to HRISs lasting until the 2020s**.

Some perspective on the current state of HRISs

Where are we now, anyway ?. From our perspective, it would be as follows:

DETAIL OF CONTENT AREAS COVERED BY HRISs TODAY



We do not intend to say the last word on these matters here – there are houses such as Gartner, Forrester or Everest, diverse industry analysts, or even ourselves as needed, that may provide a more fine-grained picture if need be. Oftentimes, the software providers themselves quickly show their success in determined HRIS industry classifications – see, as mere illustrative examples, Ceridian, or CornerstoneOnDemand about their position in the corresponding Gartner "Magic Quadrants".

What we intend to highlight is that the HRIS industry has indeed matured, but what is perhaps even more important, **we are at the dawn of a new era – the Future of Work, much of that related to Artificial Intelligence as applied to HR and Rewards, and other technologies (DLT / Blockchain, Cloud, IoT, etc.)**. One critical aspect for HR reporting, especially for larger companies, will also be to cover **legal Human Capital disclosures**: in the US, see Workspan's Daily "SEC Votes to Adopt Rules that Enhance Human Capital Disclosures"; in the EU, the European Commission's "Corporate sustainability reporting" mentions the Directive 2014/95 that includes social, employee and board diversity matters and moreover, an upcoming new "Corporate Sustainability Reporting Directive" which will require deeper insights on HR and Reward, and formal audit of those.

Today's IT aspects that HR and Reward practitioners may wish to consider

One piece of missing information that HR and Reward practitioners may have at times, is what the status of current technologies is in general. Whilst it is not their job to know technical subtleties, **awareness of what is going on in the world of Tech itself can help HR make much better and more informed decisions** about the tools of their trade, communicate better with IT implementers (which may not always be noticeably clear in their language with HR / Rewards and vice versa), and indeed open new possibilities.

Based on the MIT course "Digital Transformation: From AI and IoT to Cloud, Blockchain, and Cybersecurity" (version fall 2019), and with some self-elaboration, we hereby present a description of some latest tech for convenience:

TYPE OF TECHNOLOGY	What are they ?
Distributed Ledger Technologies (DLT) / Blockchain	✓ *Technologies that allow* ***creation and deployment of repositories of secure information and digital assets****, which are* **1) *decentralized*** *across many servers (nodes),* **2) *immutable*** *(only add/read data, not delete/update), and* **3) *with protection based on cryptography***. ✓ ***Info / assets can be represented by "tokens" and/or cryptocurrencies****, generated by the technology itself and, in principle, tradeable (and many of those, indeed traded).* ✓ *Transactions, identity check and payments executed almost automatically via* ***"smart contracts"***.

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TYPE OF TECHNOLOGY	What are they ?
Cloud Technologies and APIs	✓ *Technologies based on* ***Internet protocols that allow live connection of people, physical and digital assets****, and thus* ***virtualization / Software as a Service (SaaS)****, and hugely profitable* ***Platform-based businesses****.* ✓ *Started 1) with the* ***JavaScript and HTML 5 revolutions****, which transformed* ***browsers into multi-platform execution tools of networked, heterogeneous SW****, 2) generalization of* ***smartphones and Mobile apps****, and 3)* ***improved bandwidths****, that allowed much larger data traffic.* ✓ *Also, better* ***Application Programming Interfaces (APIs) have allowed the automated connection and "stitching" together of initially unrelated apps****, enabling internal adoption of* ***open-source****, great outside ideas and solutions, and more complete and* ***personalized functionalities*** */ services.* ✓ *Continues today with (for example):* ○ ***Containers*** *– large, relatively autonomous platform-agnostic packages of SW and user-end apps that can be deployed, connected, and moved conveniently.* ○ ***Platform as a Service*** *– which allow hosting of apps and data, many kinds of analytics and AI application, "serverless" (ie on-demand) computations, creation of new apps, etc.* ○ ***Microservices*** *– possibility of offering "on the same screen" several functionalities together, not necessarily from a same provider, towards a specific user experience.*
Artificial Intelligence / Machine Learning / Deep Learning	✓ *The combination of* ***machines' memory, processing, reprogramming and prediction capabilities*** *and endurance, with the* ***invention, judgment, empathy, intuition, invention, and leading capability of the human****.* ✓ *Technologies based on* ***different types of math analysis and techniques*** *("supervised" or results' labelled, or "unsupervised");* ***AI appeared first, them ML as a specialized subset, then DL in latest times****.* ✓ *Techniques in ML can be linear, logistic, and multiple regressions, Bayesian probability, decision trees and "random forests", k-nearest neighbors, optimization, etc. – or for DL, "Boltzmann machines", "deconvolutional" or "adversarial" neural networks, etc.* ✓ ***Business Applications****:* ○ *"Bots" listening and emitting call center written/verbal answers.* ○ *SW reviewing medical tests and predicting ailments.* ○ *Self-driving cars, virtual assistants.* ○ *Automated accountancy, financial and legal work.* ○ *Robots creating products, harvesting and cooking food, cleaning.* ○ *SW identifying insights in scientific papers, emails, voice data.* ○ *Image, sound, and wave phenomena recognition.* ○ *Automated stock and other markets' trading.* ○ *Computers writing reports or even composing new art pieces, etc.*

(cont.)

TYPE OF TECHNOLOGY	What are they ?
Modern Databases, Big Data & Business Intelligence	✓ *The* ***modern "No-SQL" databases*** *(not "Sentence Query Language"-based, which are still relevant and widespread), allow* ***code to be used inside*** *to perform operations and perhaps more importantly, they can be* ***escalated, distributed, and deployed with unstructured, massive data*** *– which is what most* ***internal or external company data*** *is, from different sources.* ✓ *The combination of modern Databases with* ***Business Intelligence / AI tools and visualization*** *layers permit* ***much richer data management, analytics, and reporting****.*
Internet of Things (IoT), 5G Communications	✓ IoT - ***connection of all sorts of items and devices among themselves, with computers and with the Cloud, via Wi-fi enabled, programmable embedded micro-computers****.* ✓ *Devices can "talk" to each other by using Internet-like or other lightweight communication standards, enabling* ***combined and remote automation of multiple devices****, even "mundane" ones, and monitoring, computation, and device action closer to the physical world – human and machine.* ✓ ***5G is a new standard of radio communications*** *that will allow, apart from massive* ***IoT deployment****, the almost* ***instant transmission*** *("low latency") of* ***massive amounts of data*** *– including video, sound and even holograms.*

For sure, we could go on with Virtual Reality / Augmented Reality, Gamification, Social Media, new ways to lead projects (Agile or otherwise) - which same as all the above, will co-determine the Future of Work, and how HR and Reward management itself is done.

Recommendations and Conclusions

It is said that **as a rule of thumb, a new, good HRIS can achieve increased employee satisfaction with a total aggregate reduction of 20-30% in costs and process' timing** (all aspects considered). However, to reap those benefits, the technologies such as the ones mentioned earlier will require some careful implementation. In this regard, some **tactical recommendations** may be:

- Create a group of competent and committed "superusers" and PMO.
- Train the implementation team AND the "superusers" together into the chosen tool as soon as you can, even if not company specific yet – they need to "feel" and understand the new tech from the very beginning.
- Identify, communicate to and train rest of future users perfectly well later - allocate budget to professional change management for complete engagement.

- Select and evaluate vendors assisted by experts.
- Decide which content pieces, modules/tools and countries go first, and why.
- Make sure that the Project Leader is knowledgeable in at least two HR and Reward areas: just Project Management or IT skills alone, or a Project Leader from Finance or Operations may not work, as this requires HR content domain expertise.
- Be healthily skeptical of provider sales conversations or even demos regarding regional / local capability, or module functionality. For example, the complex field of Rewards is sometimes not covered well, or by specialized applications only.
- Talk directly with the technical people of the provider in charge of running the 'day-to-day' relationship, not only to their sales-related contacts.
- Formally allow time and means to contribute for your local employees intervening in the project – or else risk distraction by their day-to-day local priorities.
- Involve the CIO/CTO to have his/her team help declutter complexity and jargon.
- Take exceptionally good care of inter-system connections / APIs and data upload.

But **in a more strategic context, and as conclusions, all HR and Reward management content areas are going to be affected by the technologies mentioned above - actually, they are already being affected**.

Talent Attraction and Development, Careers, Training, Workforce Planning, Potential and Performance Evaluation, Compensation, Benefits, Work-life Programs, Hiring and Contracting, HR Admin, Payrolls, Tax & Legal compliance – all of that is going to be digitalized, very much automated, and applied over a digital work itself.

We can only be excited about what is to come– hopefully, **a technological and HR near-future in which managing people will be more convenient, insightful, cleverly done, and based on true human and economic enterprise potential**.

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