



WFM TECHNOLOGY VALUE MATRIX 2017

ANALYSTS

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THE BOTTOM LINE

To comply with difficult-to-follow employment law, employers are benefitting from the maturation of highly capable single-suite options for workforce management (WFM), in the cloud.

This year, Ceridian is again the overall Leader in this regard as industry stalwarts ADP and Kronos fall behind in innovation and struggle to present truly modern technology for WFM. At the same time, functionality for scheduling and time and attendance from JDA and WorkForce Software is emerging as a necessary best-of-breed point solution in WFM for the employers whose complex needs call for it.

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A major change in the competitive landscape of technology for WFM is fully underway. The change is slowly, but inexorably, unfolding to do away with a reality that has existed for a long time. Over many years' time, ADP and Kronos have worked together and individually to establish a vast, entrenched installation base. In this way, together they dominate the market to this day even as they exhibit signs of struggling to match the innovation of their more agile peers. This strategy, if it is one, has holes, primarily that many users may remain on older platforms, and the parallel lag in technology is finally beginning to show in the product and in lost deals.

- **Lost deals.** In attempts to pick off existing customers and new prospects, competitors have nibbled at the edges of Kronos' and ADP's monolithic customer bases. Nucleus has examined scenarios where other vendors simply reach and win over users of older ADP solutions before the latter can pitch one of its newer products to the existing customer (Nucleus Research *q9 – Ultimate Software UltiPro ROI case study – Warren Equipment Company*, January 2016).

Moreover, Nucleus's analysis of user cases strongly suggests that many employers deployed with ADP may be on an old solution from the vendor (Nucleus Research *q36 – FinancialForce HCM ROI case study – Ashoka*, March 2016). In other lost deals, users choose a competitor over one of the new products, even after ADP reaches them with word of it. Price competitiveness is one of the issues that has arisen in our analyses (Nucleus Research *q112 – Ultimate Software UltiPro ROI case study – Nebraska Furniture Mart*, June 2016).

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- Middling new product. For ADP, this new product includes ADP RUN, Workforce Now, and Vantage HCM; for Kronos, the products are Workforce Central and Workforce Ready. Descriptions of these solutions appear later in this report. Over nearly two-and-a-half years' time, Nucleus's analysis of user cases and discussions with employers have revealed and underscored notable shortcomings in these products (Nucleus Research *p224 – Anatomy of a decision – Ceridian Dayforce HCM*, December 2015).

Nucleus's analysis indicates that Workforce Ready is workable only for very small businesses.

- Lack of cloud. Kronos appears to rely on semantics and euphemism to get out of admitting that most of its supposedly modern technology for WFM is not even in the cloud. Kronos calls the entirety of its new suites for human capital management (HCM) the Kronos Cloud. But Workforce Ready is the only suite from Kronos in what is objectively a modern cloud – multitenant with one instance of the solution delivered via software-as-a-service (SaaS) to every customer simultaneously, every time there's an update (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). Nucleus's analysis indicates that Workforce Ready is workable only for very small businesses (Nucleus Research *p224 – Anatomy of a decision – Ceridian Dayforce HCM*, December 2015). This places Workforce Ready in competition mostly down-market with contenders such as Zenefits and others in this report, such as Namely and Paylocity. The rest of the so-called Kronos Cloud comprises Workforce Central, a privately hosted solution. Every employer is on its own instance of Workforce Central. This presents major challenges for the vendor in innovating product (Nucleus Research *p208 – Kronos Cloud versus modern HCM tech*, November 2015).

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- Apparent chinks in the ADP–Kronos partnership. A longstanding partnership between ADP and Kronos enables the former to pipe white-labeled Kronos functionality into Workforce Now where scheduling needs are complex (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). Often, though not always, the deployment supports a unionized workforce. As of late, Nucleus has observed user cases where employers eschewed the Kronos integration in a Workforce Now deployment, instead choosing a competitor such as WorkForce Software for their complex needs in scheduling (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017). With a retail- and services industry–targeted solution drawing on real-time information from its technology for the supply chain, JDA has displaced Kronos, too, in deals involving complex needs for time and attendance or scheduling.

Nucleus believes Kronos and ADP are destined to lose market share. It’s just that it won’t seem like this for a while. Each vendor’s existing customer base is vast, and attrition will take time to show. Nevertheless, Nucleus believes the confluence of factors mentioned in this report is pushing the market for WFM technology toward a tipping point: Within a decade’s time, closer to five years, the competitive landscape will look much different than today, with ADP and Kronos marginalized. Notably, ADP might yet cancel this future by further distancing itself from Kronos in favor of other partners for deployments requiring mile-deep functionality in scheduling.

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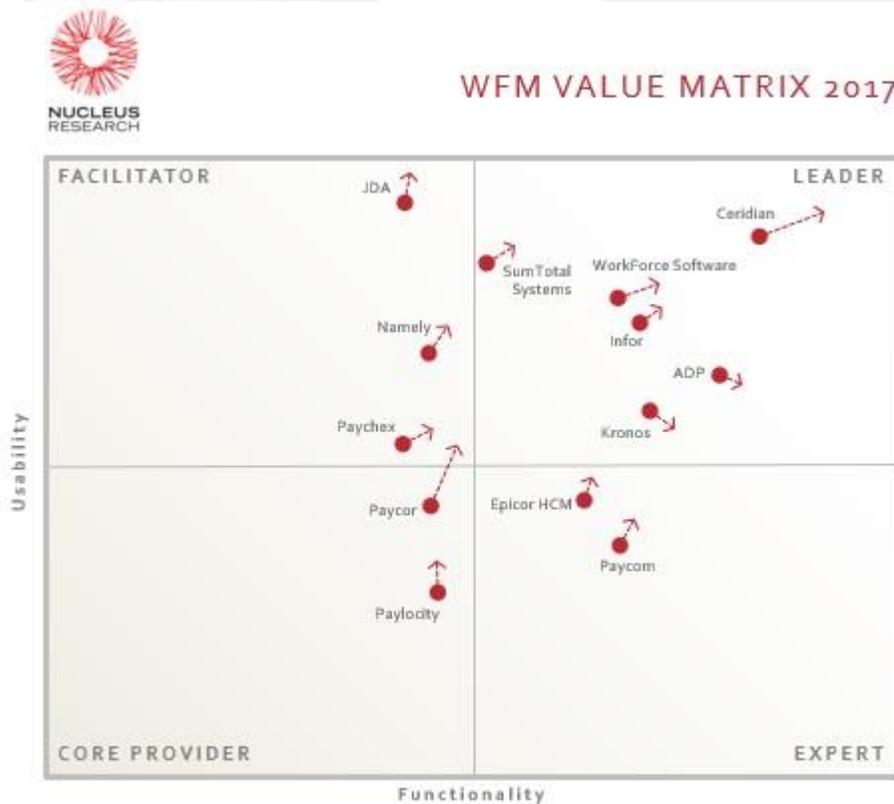
OTHER LEADERS AND DEVELOPMENTS

Following are additional highlights and developments:

- Ceridian. Again in the Leader quadrant, Ceridian continues to set itself apart from all other Leaders and the rest of the field with Dayforce’s ability to provide end-to-end functionality and high usability in WFM.
- WorkForce Software. As it too advances its position in the Leader quadrant, WorkForce is exhibiting signs of aggressive global expansion fueled by last year’s acquisition of Workplace Systems.

- SumTotal Workforce Management. The vendor has moved into the Leader quadrant. Buoyed and complemented by its acquisition in October 2014, by SkillSoft, SumTotal continues to display growing strength at the epicenter of HCM – payroll, time and attendance, benefits administration, and other elements of WFM essential to the employment of people.
- JDA Software. With its supply chain–informed solution focused solely on scheduling and time and attendance for the retail and services industries, JDA Software exhibits the most usability of any vendor in this report.
- Paychex. An exceptionally intuitive and thoughtful user interface (UI) found in the Paychex solution has enabled this vendor to exit the Core Provider quadrant and become a Facilitator with trajectory pointing toward the Leader quadrant.

The following pages provide more details and a profile for every vendor appearing in the 2017 WFM Value Matrix, which evaluates each provider based on the functionality found in its solutions and the usability of them (Nucleus Research *r59 – Understanding the Value Matrix*, April 2017).



LEADERS

Leaders in the Value Matrix include WorkForce Software, SumTotal Workforce Management, Kronos, Infor, Ceridian, and ADP.

WORKFORCE SOFTWARE

Retaining its position in the Leader quadrant and showing movement along a trajectory shown in last year's report is WorkForce Software. The WorkForce Suite, the solution from WorkForce, spans time and attendance, staff scheduling, absence and leave management, labor analytics, and fatigue management. WorkForce does not offer functionality for payroll, but integrates readily with whatever a customer already has in place. All new deployments of The WorkForce Suite are in a SaaS-delivered multitenant cloud; most of WorkForce's existing installation base is, in fact, in the cloud. Lingering on-premise deployments will either remain so by customer preference or eventually move to the cloud.

WorkForce tends to focus on organizations employing 5,000 or more in staff, but the solution works for users whose employee counts are smaller. Key target markets include manufacturing, education, utilities, financial services and insurance, and the public sector. Shortly following the publishing of last year's report, WorkForce announced that it had acquired Workplace Systems (Nucleus Research *q128 – WorkForce Software Vision 2016 update*, July 2016). The acquisition complemented WorkForce's existing strengths in managing time and attendance in real time and compliance with employment law; robust labor forecasting capabilities found in Workplace critically inform the creation of these schedules for optimal efficiency.

The WorkForce Suite, now also encompassing robust capabilities found in the acquired Workplace, aptly illustrates an emerging countertrend. Employers continue to move toward obtaining as much of WFM functionality (and the rest of HCM) as possible from just one provider. Even so, scheduling is an area where providers of deeply functional and usable point solutions, otherwise known as best-of-breed, continue to find a demand with users whose labor force's needs are exceedingly complex. This demand will continue; end-to-end providers will likely never find it cost-effective or otherwise advantageous to build out their scheduling capabilities to handle the complexities that a solution such as WorkForce's can.

Furthermore, the vendor is beating its competitors in providing scheduling as a point solution. One example pits WorkForce against Kronos, through ADP. To handle this level of complexity in scheduling for customers, a longstanding, tight partnership pipes white-labeled Kronos functionality into Workforce Now, which is ADP's cloud-

based solution for the midmarket. Nucleus's analysis has encountered WorkForce Now deployments in which the employer favored WorkForce and eschewed Kronos.

Till very recently, WorkForce has conducted all its implementations. Because of Workplace's established footprint in Europe, however – and for other reasons – WorkForce is anticipating and planning for a sustained spike in company growth. This has necessitated the establishment of partnerships with several solutions integrators (SIs), without whom the ability would not exist to scale to the fatter pipeline of implementations. Since last year, WorkForce doubled its capacity to carry out implementations by executing on a framework to vet and certify SIs to work on WorkForce installations. Full-fledged partnerships are in place with Deloitte, Accenture, IBM, Aon, and PricewaterhouseCoopers. For implementations that have fewer demands or are smaller in scope, the vendor is working with a shortlist of tier-two SIs.

As noted in last year's report, WorkForce supports robust mobile functionality and accessibility. An SQR (Schedule Quality Rating) informs users how good the schedules they develop are. WorkForce speaks with its customers, in various industries, to determine just the right level of detail to provide – enough to be deep, but not too much as to be overwhelming. Overtime is viewable in the moment, not just retrospectively.

A Schedule Optimizer enables users to create schedules from scratch. Every time, this tool will try to beat the efficiency of the immediately preceding schedule. A user can set rules and instruct the system to break them temporarily. The Schedule Optimizer can run a calculation for up to 30 seconds, in which case it's comparing approximately 40 million different permutations of possible schedules to produce the best one possible. Should they wish, the system allows managers to create schedules in an Excel-emulating environment; many are used to that look and feel.

Notably, the WorkForce Suite can now facilitate monthly scheduling, which accommodates customers' needs in, for instance, the Eastern Bloc of Europe. Bolstering the vendor's ability to compete with JDA's retail- and services industry-centered scheduling tool, the WorkForce Suite incorporates historical data on retail foot traffic and then applies an algorithm to project future needs.

Functionality supporting compliance with the Affordable Care Act (ACA), Fair Labor Standards Act (FLSA) and Family and Medical Leave Act (FMLA) is robust. The solution is adept at handling sick leave and widely varying regulations, as well as informing performance management with employees' attendance data to spur system-generated written warnings. Scheduling managers can track employees' productivity against the norm, and when an employee works for more than one

scheduling manager, each can see what others have scheduled. The system aptly handles overtime regulations so managers can anticipate where and when they may be running the risk of falling out of compliance – and make the necessary adjustments ahead of time. Union shops find the solution flexible for their needs.

End-to-end providers are unlikely to have the capacity, now or in the future, to handle the most complex scheduling needs. These vendors will need a partner for this additional firepower. ADP uses Kronos (with cracks showing in that foundation), and Ultimate Software white-labels Infor. Nucleus believes the most assured path to long-term success for WorkForce, therefore, is for the vendor to pursue additional partnerships like the one it has solidified with SAP SuccessFactors (Nucleus Research *p223 – Looking outside SAP for the epicenter of HCM*, December 2015). Other players, such as Workday and Oracle, are ripe for the same kind of relationship with WorkForce. As WorkForce develops these relationships and further hones the depths of its point solution for WFM, Nucleus expects the vendor to continue along its trajectory in the Leader quadrant.

SUMTOTAL SYSTEMS (SUMTOTAL WORKFORCE MANAGEMENT)

This year SumTotal Systems enters the Leader quadrant. Since Skillsoft's acquisition of SumTotal, in October of 2014, the two entities have elected to remain separate business units as they've established a steady cadence of interconnected upgrades (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). For instance, SumTotal recently announced new features to the SumTotal Talent Expansion Suite, notably bringing WFM, talent management, learning, and recruiting onto one platform.

Through many analyses across all practice areas over the past most recent years, Nucleus has found that the cloud delivers more than twice the ROI compared to non-cloud technology deployments (Nucleus Research *q65 – Cloud delivers 2.1 times more ROI*, April 2016). Even so, companies continue to elect to have their technology privately hosted or deployed on-premise. Warranted or not, concerns over security may convince a user to deploy in a private cloud or on-premise. In other scenarios, union rules or regulations governing their data may compel them to do so.

For these and other reasons, it is notable that users are able to obtain the very latest version of the SumTotal solution, regardless of which model the customer chooses – SaaS-delivered via multi-tenant cloud; privately hosted in SumTotal, or on-premise. To Nucleus's knowledge, this scenario is unique among vendors in this year's report. Most that continue to offer on-premise deployments tend to do so because they still struggle to develop various aspects of functionality in the cloud. But SumTotal does

not have this problem. Because the SumTotal suite is multitenant-ready, the vendor can use the tenant model in private cloud and on-premise scenarios to support what the vendor calls a distributed enterprise. This is where an organization may want to have each of its business units or countries or subsidiaries in a tenant, but still share the same deployment. The scenario enables rapid deployment. The initial tenant rollout becomes a template, and the model for deployment improves administrative control for each business unit or country or subsidiary.

SumTotal Workforce Management spans time and attendance, scheduling, absence and leave management, and payroll data processing. To conduct predictive analyses and develop workforce models, managers benefit from a holistic, real-time view of data within the system. Alerts, notifications and call-outs abound, and mobile technology is robust. The SumTotal Core Platform provides a virtual system of record combining SumTotal-originating data with data from any other system with which the solution integrates and unifies SumTotal Workforce Management with the Talent Expansion Suite (Nucleus Research *p123 – Guidebook – SumTotal Systems*, July 2015). Additionally, because of the fully matured Skillsoft integration, learning content surfaces as it becomes relevant to WFM activity.

Deploying a slew of upgrades and innovations since the publishing of last year's report, the vendor continues to improve methodically upon its capabilities. The past two years have brought a focusing on the user experience, a lowering of the total cost of ownership, a unification of the suite, and the inclusion of key functionality in, for instance, job-based scheduling and employee self-service (ESS).

Following are notable highlights of functionality found in the solution:

- **Job/role-based scheduling.** This capability helps employers such as those in the entertainment industry whose staff (e.g., camera operators, etc.) does not necessarily work regular or consistent hours. Users have greater flexibility in accommodating these employees' schedules.
- **Occurrence tracking.** An employee may be chronically late. The system will track the occurrence and auto-send warnings and communicate demerits to the employee – even auto-deliver a dismissal message (though supervisors will usually elect to become involved at that point). The functionality helps eliminate supervisory biases, a no-no in union environments (which constitute approximately two-fifths of SumTotal deployments). HR can add notes within the system related to these occurrences. Notably, the system will auto-generate messages prompted by positive events, too.

- Time and attendance. The SumTotal solution can handle a high level of complexity in absence and leave management. This helps with planning, as a manager will see a pop-up on his or her screen, for instance, to see an upcoming hole in the schedule. More generally, supervisors can log into timesheets and see all the schedules for people who work under them. Granularity in scheduling is exceptional, and an employer can go into very detailed cost center position tracking. For example, for quality control an airline manufacturer can look back and figure out who drilled any given rivet, and when.
- Data acquisition devices. This is what SumTotal calls its time clocks. SumTotal develops its own line of time clocks, which cost approximately two-thirds the price of competitors' devices. The devices won't force users to return to a terminal to complete actions. (For employers that need it, SumTotal can integrate with most other HCM technology vendors' time clocks.)

In its latest release that has gone live (Q4 of 2016), the vendor issued a sweeping evolutionary upgrade to its suite. Additionally, just ahead of this report's publishing, SumTotal launched another release, which features upgrades such as more updated suite integration, a new user portal, fully integrated shift trading capabilities, standardized archiving, and an upgrade in advanced reporting. These methodical improvements and the ones preceding it validate and solidify the vendor's movement into the Leader quadrant.

KRONOS

Kronos remains in the Leader quadrant. Since the publication of last year's report, Kronos announced two recent acquisitions to support and enhance current offerings. In October 2016, it purchased Datamatics Management Services Inc., a provider of time and labor management services and solutions that will allow Kronos to offer its suite of services to Datamatics' clients. Later, in January 2017, Kronos acquired Financial Management Solutions Inc., a provider of WFM and analytics applications for credit unions and the retail banking industry. This acquisition is intended to expand Kronos's services in the financial business industry, especially in the area of branch operations.

These acquisitions appear to support a micro-vertical strategy. That would make sense. The vendor's WFM offerings are advertised as tailor-made to meet industry-specific needs across a plethora of verticals. But Nucleus doubts the vendor's solution, as a broad suite for HCM, can really handle every possible industry-specific need in scheduling (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017). Plus, the effort to subsume an acquired vendor's technology or meld it with the acquirer's is significant.

Kronos is one of the oldest solutions for WFM in the marketplace. Founded in 1977, it eventually went public – and private again, in the mid-2000s. Best known for its large enterprise WFM solutions for employers with significant populations of hourly staff, the vendor offers a multitude of applications. Nearly two years ago, however, Nucleus determined that much of the vendor’s solution is not in a public cloud (Nucleus Research *p92 – On-premise users’ road to the Kronos Cloud is long and winding*, June 2015). This has not changed.

- Workforce Central. Enterprise users make do with a single instance of Workforce Central in a managed hosting environment. There is a demand for this among large employers still reluctant to migrate business operations to the cloud and in heavily regulated industries where certain types of data are disallowed in the cloud. But these users are increasingly becoming the exception, and it is telling that players such as WorkForce Software are moving clients employing 5,000 or more in financial services and insurance, as well as the public sector, to a SaaS-delivered model in a public, multitenant cloud.
- Workforce Ready. Kronos’s solution for small- and medium-size businesses (SMBs) is Workforce Ready. Users may purchase the entire suite or individual modules as needed. Workforce Ready is indeed in a multitenant cloud, but Nucleus’s analyses of HCM users have found employers indicating that Workforce Ready is workable only for the smallest of small businesses (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016).

Against this backdrop, Kronos continues to encourage existing and net-new customers to migrate to the cloud, and the Kronos Cloud Readiness Service is an add-on resource that clients can use to facilitate migration to the Kronos Cloud. As explained above, however, the Kronos Cloud is a euphemism that may mean a real cloud (i.e., multitenant, public cloud), but also could mean a managed hosting environment (Nucleus Research *p62 – HCM Technology Value Matrix 2015*, April 2015). Plus, Nucleus’s analysis indicates deployments have been less than optimal.

Although Kronos offers a full suite of solutions, clients have mentioned areas of concern such as synchronization issues with large files, the need for improvements with OCR, and the lack of intuitive site navigation. An IT manager suggested that Kronos works best if there is a dedicated technician on site with extensive Kronos understanding and capabilities. This is not the kind of scenario that truly modern technology for HCM is capable of facilitating (Nucleus Research *r22 – Four HCM mistakes to avoid*, January 2017).

For many years now, Kronos has survived by way of a vast installation base of existing users that deployed its technology for time and attendance before the

advent of the cloud. In parallel, the vendor has offered technology notably capable of handling complex scheduling requirements, such as those for union rules. But Kronos's innovation in the cloud lags its peers (Nucleus Research *p92 – On-premise users' road to the Kronos Cloud is long and winding*, June 2015), and its edge in accommodating employees' complicated scheduling requirements appears to be slipping. Alternatives to Kronos have surfaced, and the time has come for employers to consider these, which include other Leaders in this year's report (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

INFOR

WFM from Infor, in the Leader quadrant, delivers the core functions focused on workforce planning. These include labor cost controls, enhanced operating efficiencies and agility, time and attendance, scheduling, absence management, and task management. For benefits administration, there is Infor Human Resource Management (HRM) Benefits Administration. Lawson-originating, COBOL-based, SaaS-delivered payroll covers regulatory reporting, employee law compliance, and payroll taxes. Other global regional packs deliver localized payroll capabilities.

Infor can deliver WFM as an add-on bundle to the Infor HCM Suite of services. Integration here is seamless and furnishes users with access to all the Infor applications. Compliance is robust. Infor has met new rules from the European Union (General Data Protection Regulation – GDPR) and the U.S. Department of Labor (DOL) with automated solutions to support employers' related needs.

As noted in the last two reports, WFM from Infor integrates with Infor Financials, a cross-functionality that underscores the competition that Infor brings to vendors such as Workday, SAP, and Oracle. Nucleus has found that this sort of integration yields cost savings for employers (Nucleus Research *q166 – Guidebook – Oracle HR and finance connected*, August 2016). Specifically, aligning payroll and other efforts in real time with the general ledger (GL) can boost productivity (Nucleus Research *r6 – An enterprise ROI hockey stick in Oracle HCM*, January 2017).

This past year has seen several announcements from Infor WFM:

- **Gig Economy.** With more contract employees and temporary staffing, the gig economy has made WFM far more complex. As employee patterns evolve, contingent and contract labor are becoming the norm in many industries. Specifically by addressing and reducing risks experienced with unexpected absences, Infor functionality released since the last report's publishing helps employers to manage their workforce, which may not be homogenous.

- Analytics. New functionality helps to align demand with the accessible labor pool. It does so by using prescriptive analytics to identify an employer's strategic direction and determine the best course of action for future staffing needs. This is in line with Nucleus's views on how analytics will evolve in the enterprise (Nucleus Research *q153 – The evolution of embedded analytics*, August 2016).
- Xtreme Support Portal. This offers a choice of plans and provides the support for users to maintain their systems, receive software updates, and benefit from access to interactive briefings and a knowledge-based library. This is a positive development that will help Infor forge deeper, more continual relationships with customers, something Nucleus believes is critical to the vendor's strategy (Nucleus Research *q141 – Infor lays out its vision at Inforum 2016*, July 2016).
- CloudSuites. Infor's campaign continues apace to develop versions of its suite tailored to micro-verticals. Since publication of last year's report, new CloudSuites for federal, clinical, chemical, rental, retail, and high-tech customers have become available. Industry specific scheduling, especially, presents obstacles to enterprise efficiency. Nucleus's analyses elsewhere suggest that these CloudSuites can be particularly helpful in this regard (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

As of late, Infor has reported significant growth, with notable expansion in India, Africa, and the Middle East. This is a logical result of the vendor's heavy investment in the region, announced last summer (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). Nucleus believes the vendor's position as a Leader in the WFM Value Matrix remains secure. In the near future, this position will hinge on the vendor's continuing commitment to provide users with a clear path to the cloud and further synthesize its modules for WFM and HCM.

CERIDIAN

For the past several years, Ceridian, again the leading Leader in WFM Value Matrix, has been at the vanguard of efforts to marshal all of HCM onto a single application producing just one dataset governed by a single rules engine. This architecture makes the solution particularly effective and organized in running the elements of WFM (e.g., payroll, time and attendance, benefits administration, and core HR). Nucleus's analyses show that Dayforce delivers the definition of real-time data processing to facilitate employers' compliance with complex employment law (Nucleus Research *q17 – Ceridian gets high grades for compliance*, January 2016) and deliver an absence of delays and uncommon level of visibility into the workforce.

Since Ceridian’s acquisition of Dayforce, the vendor has executed on a flurry of innovations and upgrades. In most recent years, the cadence of updates to product roadmap grew increasingly swift. This pace has slowed, but for a good reason: WFM functionality is the most mature within the Dayforce solution. Improvements at this point have become iterative – mainly because the most difficult work has already been successfully completed. Now, most product updates relevant to WFM are granular and build on usability. Since the publishing of last year’s report, Ceridian has released several falling under the following categories:

- **Scheduling.** New options are available. Some pertain to streamlining workflow within the system as it relates to requests for time away from work (TAFW). Especially of use to employers in the retail and services industry, the ability is now available to autofill employee schedules to coincide with peaks in ordering that are based on KPIs. New functionality also filters updates to existing rules regarding capturing the time and attendance of employees who have a work contact, but no schedule, thus sparing the employer undue complications.
- **Analytics and reporting.** A new feature cross-links labor metrics to Dayforce Touch and HTML clocks. Another enables users to retain labor metrics details that are input at a timecard level in payroll results that are used in the payroll general ledger, calculations, configuration, and exports.
- **Global compliance.** Dayforce now supports users’ compliance with enhancements to Statutory Sick Pay requirements in regions of EMEA. Also, new functionality enables users to remain compliant with U.K. regulations regarding meals and breaks as they relate to an employee’s age. The ability to manage European Union–related work contracts and patterns is now available in HTML-based Web forms. As well, for compliance with certain EU regulations, Dayforce can now send alerts to employees whose schedules fall outside their established work patterns .

In addition to all this, a new Dayforce Touch clock, Dayforce TUFF, is now available. Designed to withstand conditions found in hard labor environments, it’s NEMA-class, short for National Electrical Manufacturers Association.

Nucleus’s analysis of user cases continues to unearth exceptional ROI for Dayforce (Nucleus Research *q143 – Ceridian Dayforce ROI case study – Global Brass and Copper*, August 2016). This is unsurprising. Ceridian’s progress with Dayforce has been impressive, reflected in the vendor’s perennial ability to defend its turf in the WFM Value Matrix.

ADP

ADP remains a Leader in the WFM Value Matrix. Following are the modern solutions for HCM that ADP offers (SaaS-delivered in a multitenant cloud):

- Vantage HCM. The upmarket suite for all clients employing more than 3,000 in staff is Vantage HCM. Some users may have global needs here and there, but Vantage HCM is not truly for global companies. Nucleus's analysis shows that the solution can be expensive compared to a number of competitors' offerings (Nucleus Research *q112 – Ultimate Software UltiPro ROI case study – Nebraska Furniture Mart*, June 2016).
- Workforce Now. Approximately 70,000 employers are on this product today employing on average 250 in staff, but the solution is intended for organizations employing anywhere from 50 to 3,000 in staff. Nucleus believes that this range is probably too low, on the lower end, for the product to be identified as a midmarket solution. Nucleus's random analysis of user cases has encountered employers deployed an older version and receiving little notification of the situation from ADP (Nucleus Research *q36 – FinancialForce HCM ROI case study – Ashoka*, March 2016). The vendor says 85 percent of Workforce Now users are on the current version of the solution, the 15 percent who aren't on the latest are aware of the situation, and all remaining stragglers are slated to migrate to the current version by summer of 2017.
- ADP RUN. Targeted for 1-50 employees, ADP RUN has an average client size of 7 employees, and approximately 450,000 employers are on this solution. For this market segment, users may only need payroll (Nucleus Research *r22 – Four HCM mistakes to avoid*, January 2017). Here, ADP additionally faces stiff competition from capable, affordable vendors. Some appear in this Value Matrix, and others do not (Nucleus Research *r36 – Zenefits evolves beyond Z2 to up HR productivity*, February 2017).

As last year's WFM Value Matrix noted, a percentage of ADP's installation base runs Kronos-based functionality for time and labor management rebranded as ADP's. Constituting a subset of Workforce Now users, these customers contend with particularly complex pay rules and compliance requirements (Nucleus Research *q90 – WFM Technology Value Matrix 2016*, May 2016). ADP indicates that the percentage of customers operating under these circumstances is small. In randomly contacting users, Nucleus's independent investigation has encountered many. Meanwhile, our analysis appears to corroborate ADP's claim that fully native WFM-related deployments of the vendor's installation base are preponderant down market. Most notably, Nucleus's analysis has found that at least some users of Workforce Now

eschew the Kronos integration in favor of mile-deep functionality in scheduling from vendors they prefer. Nucleus has identified such vendors whose capabilities are superior to that of Kronos and believes ADP would be wise to explore them (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

It is worth noting that functionality for time and attendance is the most used on ADP's mobile application. Available for download from the iTunes Store and Google Play, the application tends to draw positive reviews. Additionally, perhaps in an effort to draw down the need for Kronos functionality in certain deployments of Workforce Now, this past year saw an array of improvements made to MyADP for Time and Attendance. Again, Nucleus believes the need to pipe in extra-capable functionality for extra complex scheduling needs in WFM deployments is fine. ADP and other vendors have options here superior to Kronos.

Following is a handful of additional developments that have surfaced at ADP since the publishing of last year's report:

- **ADP Marketplace.** Launched in April 2015, the ADP Marketplace grew by well more than 200 percent over the course of 2016 through the date of this report's publishing. Vendors interested in developing applications that complement ADP's may do so in the ADP Marketplace, a cloud-based environment similar to platform-as-a-service (PaaS) where developers have access to necessary APIs.
- **IRS Form W-2.** In late Q4 of 2016, the vendor announced that it would continue to collaborate with the IRS on a program designed to reduce the rate of income tax-related theft and fraud. For an ultimately successful pilot program, in 2015, ADP issued verification codes on selected clients' Forms W-2.
- **Analytics.** In the ADP DataCloud, launched in early Q2 of 2015, the vendor has expanded capabilities. Users may now pull data from the entire ADP ecosystem as it relates to employer location and combine it with information on time and attendance. This enables employers to benchmark goings on in their own workforce against the meta data reflecting activity among all employers operating within the ADP ecosystem.

In Nucleus's analysis of deals involving cloud-based solutions from ADP versus other vendors, users have repeatedly noted that ADP continues to run payroll apart from the rest of the solution, on a mainframe. The vendor says this is a mainframe multitenant application hosted and accessed via the Internet the same way a bank or financial institution is a cloud based application also running on a mainframe. Moreover, the vendor points out that the IBM system Z mainframe used by ADP for payroll calculations is the same technology used by 96 of the world's top 100 banks

and 23 of the 25 top U.S. retailers. Even so, especially given HCM's general flight to the real cloud, Nucleus believes the approach can create poor optics and cognitive dissonance for the vendor's business development team's efforts to present ADP's cloud-based solutions as modern technology for HCM (Nucleus Research *p62 – HCM Technology Value Matrix 2015*, April 2015). Combine these challenges with the difficulties with fussy automation and manual workarounds that users of ADP have reported in Nucleus's analyses. Nucleus believes ADP faces an array of obstacles.

EXPERTS

Experts in the Value Matrix include Paycom and Epicor HCM.

PAYCOM

Paycom was founded in 1998 as a payroll application and remains an excellent option for SMBs seeking a straightforward SaaS solution for time and attendance and payroll. Paycom runs in the cloud atop the architecture of a single database based on the employer's payroll roots. This structure makes the application appealing to employers since the application is based on the payroll database with significant security protections and delivered as a single application. The vendor continues to fortify its offerings in WFM, which at Paycom comprises time and attendance, payroll processing and benefits-related compliance. In addition to this, the vendor provides a broad cross-section of functionality for HCM, including candidate tracking, applicant tracking, background checks, E-Verify, performance management, compensation planning, and learning (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2017).

A SaaS model provides automatic monthly product enhancements and GL mapping, reducing potential for errors caused by manual data entry. Nucleus's analysis of Paycom users found consistent responses. Drawbacks they noted were some limitations in functionality and reporting. Positives included ease of use, dedicated account manager, frequent automatic updates, and competitive pricing.

With a focus on security and compliance, in the past year Paycom has invested in the core applications:

- **Affordable Care Act.** The ACA dashboard provides employers with a view into their employees' eligibility and forms processing for ACA-mandated employer-subsidized healthcare insurance. Additionally, employers receive system-originating insights into changes in ACA that affect their compliance. Nucleus believes Paycom is well-poised to shift direction when and if future changes to this law, or its elimination, occur.

- Fair Labor Standards Act. An Overtime Expansion Calculator has been added to assist employers in determining the cost of proposed overtime changes to the salary threshold. This is another area where the current regulatory environment is in flux, and Nucleus believes Paycom is well-prepared to evolve this tool.

Paycom has carved out a successful business model in a niche market for SMBs and extended its offerings into the HCM space to complement its WFM core business modules. All this supports its appearance, again, in the Expert quadrant. Financial information available publicly indicates healthy year-over-year revenue growth. Significantly, the company had a consistent revenue retention rate of 91 percent annually, indicative of the customer satisfaction corroborated by Nucleus's independent analysis of users. Nucleus expects Paycom to build on its success in the SMB market and anticipates additional forays into full-service HCM offerings.

EPICOR HCM

Remaining in the Expert quadrant is Epicor, which offers a cloud-based WFM solution as a part of an HCM suite that integrates with the vendor's other solutions. This enables users to link WFM and HCM to other Epicor applications. Intended primarily for the manufacturing, distribution, retail, and services industries, functionality for WFM spans payroll, benefits administration, time and attendance, absence management, and scheduling. Through these modules, users can manage their compliance with employment law. Predictive and other analytics help to identify staffing needs and provide insight into trends, demand, and crisis staffing.

The time and attendance piece of the Epicor HCM suite can feed necessary information into another payroll application, if the employer uses something else. ESS and manager self-service (MSS) save managers and employees time by providing them with means to see their information, improving communication. Several users have noted that a mobile offering would be a valuable addition to their Epicor HCM solution.

In September 2016, Epicor announced that it was purchased by KKR, an international investment firm, as part of a plan to expand global growth and continue to build on opportunities for delivering leading cloud-ready technologies. KKR, formerly known for its leveraged buy-outs, is now considered a multinational private equity investment firm. Additionally, since the publication of last year's report, Epicor HCM has developed integration with the latest release of Epicor ERP, featuring ERP time and attendance integration among other new features.

CORE PROVIDERS

Core Providers in the Value Matrix include Paylocity and Paycor.

PAYLOCITY

Paylocity is a publicly traded company for both medium- and enterprise-size companies. Its SaaS-delivered, cloud-based solution for WFM features payroll, core HR, time and labor, and benefits administration. Aspects of talent management are available, too. As a registered reporting agent for the IRS, Paylocity also offers a complete tax filing service. Payroll data integration helps to ensure ACA compliance, even as regulations continue to evolve.

An efficient portal for MSS and ESS gives employees and their managers access to personal information in a centralized location, decreasing a time-consuming burden for HR staff and improving overall productivity with shortened response times and more complete information. Archiving of compliance-related and other pertinent data is permanent, thus mitigating the risk of lost information. More than 100 standardized reports with associated insight charts are available. Template forms provide consistency for new hire onboarding. Simplification of repetitive tasks and forms during the onboarding process reduces the time needed for new hires to achieve optimal proficiency.

Announcements since publication of last year's report include automatic expense report management and enhanced data analytics. Follow are details:

- Web expense is an add-on management solution that delivers an automated management process to streamline and expedite activity around expense filing, reporting, and reimbursement. This level of automation speeds the approval process and automatically produces GL entries, reducing the costs and errors associated with a manual entry system. This solution for expense management will allow clients and employees to track the progress of an expense submission as it passes through the process.
- A year-end dashboard provides a centralized location for HR to prepare for annual, perennial processes by identifying and correcting errors, previewing tax reporting and W-2's, and detecting outstanding tasks.

Paylocity's integrated online tools, increased functionality, usability, and mobile application provide a core level of capabilities in WFM and support its position in the Core Provider quadrant. Nucleus expects the vendor to continue to invest in its technology throughout 2017.

PAYCOR

Founded in 1990, Paycor is a cloud-based suite that spans much of HCM. For WFM, the solution comprises payroll processing, core HR, time and attendance, reporting, benefits administration, and compliance reporting. Last year Paycor expanded its suite's mobile enablement. Nucleus has also noted 401K-related automation and integration, as well as new functionality for compliance and benefits administration.

Most notably since the publishing of last year's report, Paycor has further improved its capabilities in mobile by launching a new mobile application. The new functionality provides administrators and employees alike with ready mobile access to important information and data found in the system. Usability has thus improved for processes part-and-parcel of WFM. Specifically, through mobile-enabled devices, employees can now punch in and out of shifts, gain real-time access to their work schedules, view their vacation balance and request paid time off, and see their current paycheck and up to three years of pay history. All new mobile functionality is available in Spanish, too.

Following are additional highlights of the Paycor solution:

- Time and attendance functionality from Paycor is maturing. The time off module facilitates and approves requests reflected in accrual balances. Notably, even employers that use Paycor just for payroll have access to this time off-related functionality.
- Available later this year, a labor costing solution is under development. The functionality will help Paycor further improve its solutions, which enjoy good infiltration in the nonprofit and charity sectors. Users will be able to import labor codes via APIs. Employers will be able to report employees' hours against these codes and export the final to whatever payroll system is in place – i.e., Paycor's or another vendor's. Additionally, a dashboard for overtime analytics will become a complement to forthcoming labor costing.

Additionally, a diversity dashboard will be available soon to help employers who must comply with Equal Employment Opportunity Commission (EEOC)-related rules. Beyond WFM, the vendor provides functionality for recruiting, onboarding, and other talent acquisition-related needs. Functionality for performance management is in the works.

A majority contingent of Paycor's existing installation base is employers of 50 or fewer in staff. This places the vendor in competition with the likes of Namely,

Zenefits and others targeting this demographic. At the same time, net-new customers tend to be users with approximately 100 employees.

To feed its healthy growth, Paycor benefits from a strong network in the banking industry yielding a steady stream of referrals. Because of the vendor's strength in handling users' tax-related needs, a second large referral network exists among certified public accountants (CPAs). Considering the system's ability to handle benefits administration–related compliance, health insurance brokers are an emerging source of referrals, too.

Paycor is particularly well-suited to several niches and industry verticals. One the vendor has infiltrated is Catholic Church–related charities. As mentioned, others are nonprofits and healthcare-related organizations. Nucleus's analysis has found, as well, that franchisees choose Paycor because of its ability to integrate at once with their parent organizations and across locations – mainly because the system is not a one-size-fits-all enterprise-style solution.

Near-future investments include those to further improve payroll-related flexibility and accuracy in multi-state taxation. Additionally, more analytics, as they relate to WFM, are on the horizon to give users deeper yet insight into information such as head count and overtime. As Paycor continues to build on its WFM capabilities, the vendor's trajectory, shown in the quadrants, will remain strong. Nucleus sees Paycor, a Core Provider currently, on a solid trajectory to enter the Facilitator quadrant. Additionally, given the vendor's coverage of a broader cross-section of HCM, Nucleus expects to include Paycor in this year's HCM Value Matrix, as well.

FACILITATORS

Facilitators in the Value Matrix include Paychex, Namely, and JDA.

PAYCHEX

Having moved from the Core Provider quadrant to become a Facilitator, Paychex offers a full-service HCM platform for SMBs. The suite includes a robust WFM module, Paychex Flex, a modular cloud-based solution that delivers all aspects of WFM. That Paychex provides functionality for payroll is a perfunctory statement. Through Paychex Flex, users have 24-7 dedicated support specialists and integration for the GL, benefits administration, time and attendance, compliance, and core HR.

Nucleus's analysis indicates that, in deals, Paychex most often encounters ADP RUN. The Flex platform differentiates Paychex from ADP RUN. With the latter, as an organization grows to a size necessitating Vantage HCM or Workforce Now, ADP's

other two SaaS-delivered solutions, the employer must undergo a full rip-and-replace platform switch to get there – unnecessary with Paychex.

Paychex's functionality for time and attendance comes in the form of three different products. The most robust of these, Flex Time, can handle time and attendance for organizations employing up to 7,700 in staff. An evolutionary outgrowth of nettime solutions, which Paychex acquired in mid-2014, Flex Time can capture granular details critical to ACA compliance. Paychex has added advanced scheduling and budgeting to Flex Time and applies analytics against budgeting to help a user anticipate whether any given employee is approaching a threshold for hours.

Mobile usability is sound, as is ESS. The UI is intuitive. Tiles drive always-available administrative information to users – who may click on a side-sliding drawer for more details at any time. That might be information on an employee's paycheck or the employee roster, for instance. A user also may launch an Excel or PDF file from this slide-out drawer. Onboarding is launchable from within this view, as is open enrollment. Moreover, a user can start a process in the desktop and then finish it later, in the mobile application.

From a budgeting perspective, employees punch in and out, and in real time the system updates the payroll and grid. This flows to the Paychex-native GL system. By putting this information into time and attendance, Paychex makes it context-specific and, then, feedable into most ERP Financial suites. This helps with ACA compliance. A user can project whether to drive more part-time workers into the schedule, for instance; an alert informs scheduling managers of the opportunity.

In terms of ACA compliance, Paychex acts, in fact, as a broker or agency – one of the top 25 in the industry – with tight integration into payroll. An employee can select health-related benefits through the system, which immediately pipes the information into the payroll application, handling the situation as the broker. Again, the benefits administration module integrates with Flex Time; it is available, as well, as a standalone solution. Nucleus sees all this as a positive regardless of future changes to the ACA or elimination and replacement of law.

Through an acquisition, Paychex has been a professional employer organization (PEO) for many years. Paychex will establish a relationship with a business to reduce costs for various benefits, if the employer is a good risk. To reduce costs associated with workers' compensation claims, for instance, the vendor might group together businesses that are alike. A human resource generalist (HRG) is available for a one-on-one relationship as advisor and resource to the employer. The HRG verifies whether the employer is compliant with regulations in question. This HRG is available even to employers who do not use Paychex as their PEO.

Since publication of last year's report, Paychex has added to or improved its offerings. Some of the more significant announcements follow:

- In March 2017, in response to increased regulatory compliance requirements, Paychex released Fiduciary Investment Solutions for 401K, designed to provide advice to employees and answers to their queries. The solution is helpful for TPAs (third party administrators) in assisting clients with investment decisions.
- In September 2016, the vendor began offering same-day-as-payroll ACH (Automatic Clearing House), for direct deposits. Last-minute changes to payroll are now possible, while providing the employee access to pay immediately.
- In October 2016, Paychex introduced an enhanced ACA-related solution as a standalone product with new dashboard. At that time, the vendor also introduced enhanced analytics for Paychex Flex with descriptive and prescriptive analytics, interactive reports, and intelligent recommendations.

This profile is far from an exhaustive description of the functionality found in Paychex. Nucleus's analysis finds users noting positives including automated time and attendance tracking, usable dashboards, and a streamlined integration with key applications such as the GL. Some users note that turnover of support staff seemed frequent in early 2016, but that this has become essentially a non-issue in 2017. As usability and functionality continue to increase, Paychex has earned its newly found spot in the Facilitator quadrant. The vendor's solution is becoming an ever-smarter option for SMBs as they mature into needing their first solution covering payroll and other elements of WFM.

NAMELY

SaaS-delivered and based in a multitenant cloud, Namely is a new entrant to the WFM Value Matrix. Placing within the Facilitator quadrant, Namely can accommodate users who employ up to approximately 3,000 in staff. On average customers employing 200 in staff make up the company's installation base. Namely says it competes with Zenefits, Paycom, Paychex, Paylocity, TriNet, ADP, and Ultimate Software. The claim squares with Nucleus's analysis of user cases, which show each of these vendors having all or some of their presence down market within the range of company sizes that use Namely. Furthermore, roughly three-fifths of Namely's new business wins are employers retiring a solution from ADP or Paychex.

The Namely system is an application for WFM more than anything else, and the vendor primarily markets itself to employers as a solution for their needs in payroll, core HR, time and attendance, and benefits administration. The solution comprises

elements of talent management, as well. Performance management and goal tracking have been a part of the suite since the start, and in 2015 the vendor launched onboarding functionality. For recruiting, Namely partners with Greenhouse, iCIMS, Lever, Workable, Jobvite, and others.

Following is a handful of Namely-related highlights pertinent to this report:

- **ESS.** Through a capable, robust employee portal, users can manage their time off, manage payroll, go through open enrollment or a life event, punch in and out of their shift, and view historical pay stubs. From a dashboard, administrators can run payroll, view everyone in the company, and carry out an array of additional activities critical to their jobs.
- **Reporting and external spreadsheet compatibility.** The vendor offers enterprise-grade reporting to small business users. Administrative functionality is clean, and visibility is deep. For reporting, users have wide latitude in extracting information for subsequent exportation. More than 80 standard reports are available. A flexible writer enables users to create reports from scratch highly customized to the organization's needs. All this information can be exported into Excel, not just a PDF. In the other direction, information from these spreadsheets can be imported back into the Namely system on command.
- **Benefits administration.** An employee landing page for benefits administration is highly customizable, including links, video, logo, etc. Users can see the current scenario or potentiality for their benefits. Comparisons are viewable in a Benefits Wizard, where users can run the potentials to see exactly what the impact will be to their paycheck. Insurance providers' information pipes into this area in real time. Manager view for open enrollment has more specific, more granular menu options.
- **UI.** The employee homepage features a social media-style feed. Employees can tag coworkers in posts. The look and functionality are similar to Facebook and LinkedIn, in line with trends Nucleus has noted in the industry (Nucleus Research *p199 – The coming mass extinction in HCM*, November 2015). Users can put a logo in the upper-left corner of that homepage. Via one click from this page, any user can email everyone in his or her company.
- **Calendaring.** Employees see everything in a calendar view whose look resembles popular scheduling tools. The functionality features one-click synchronization with Microsoft Outlook and Google Calendar. The user can check off which things in the calendar he or she wants to synchronize. He or she must do so only once; after that, it's like subscribing to an RSS feed.

In late Q3 of 2016, the vendor released upgrades to Namely Connect, increasing the number of API fields available and growing the number of partners in the store from 5 to 30. Examples include functionality for recruiting (e.g., Workable) and employee recognition (e.g., Fond). The system gives users excellent visibility into knowing what they're using and the tools to manage these applications efficiently.

As mentioned, Nucleus sees Namely as a highly competitive, capable solution especially for employers that are just beginning to exit small-size status. Companies fitting this description are just at the cusp of figuring out that they indeed need something in place for HCM, and that need typically begins at the epicenter of HCM: the essential elements of employing people—payroll, core HR, time and attendance, and benefits administration (Nucleus Research *r22 – Four HCM mistakes to avoid*, January 2017). These constitute WFM, and as the Namely solution matures to accommodate needs further up market, Nucleus sees the solution potentially moving into the Leader quadrant, eventually.

JDA

Again in the Facilitator quadrant, JDA Software continues to increase in usability and functionality. The solution focuses solely on time and attendance, as well as scheduling. Functionality does not extend beyond this, but Nucleus's analyses continually show that the solution is perhaps the best for retail environments where floor associates' time on the job must hew as closely as possible to sales history, foot traffic, shipments, customer behavior, and activity in ecommerce and in the warehouse and elsewhere. JDA calls these tributaries, many from the supply chain, the omnichannel. As a Leader in Nucleus Value Matrices looking at supply chain management (SCM), JDA can readily pull real-time data from this omnichannel to inform employee scheduling in a way that makes it particularly accurate (Nucleus Research *q206 – Control Tower Value Matrix 2016*, November 2016).

JDA has secured several well-known retailers of late – new customers in the process of implementing JDA functionality for WFM. Central to the JDA solution as it pertains to WFM is a schedule optimizer, which especially helps with the following:

- Compliance. The optimizer takes in employee attributes, including professional certifications and more, to help ensure that the employer has the properly qualified people on the job at any given time for compliance's sake. It will disallow, as well, the scheduling of minors when they're not legally allowed to work. The employer sets configurations for what it needs.
- Predictive and lifestyle scheduling. Employers can set fixed shifts for employees who want it. This is especially useful in helping employers to avoid subjecting

anyone on their staff to clopening – closing the night before and then returning to open the next day. The system also finds the best work for that person to do during these fixed times. To assist in this and other synchronization with the rest of the employer’s HCM suite, APIs are available for tight integration.

- **Forecasting engine.** A forecasting engine consists of 17 algorithms to help users figure out the best possible schedule at any given time. It is the base for scheduling functionality in the system, as schedules are only as accurate as the forecasting underpinning them.
- **Long-range planning.** The forecasting engine informs long-range planning, too. Up to a year’s worth into the future is possible. The feature draws on real-time and historical data across the omnichannel to project scheduling needs. This facilitates retailers’ ability, for instance, to hire accurately for the holiday season.

JDA integrates with the employer’s existing payroll solution. ESS is strong; it gives employees the ability to swap shifts and managers the ability to broadcast available shifts to appropriate members of the workforce on short notice. Dashboards give users side-by-side comparisons of locations that have seen recent overstaffing and enable them to adjust these schedules as needed. Schedule auditing is supported, and limiting factors having to do with the ACA, FLSA, and additional employment law are set in the background, steering activity to be compliant.

Most critical to the solution, availability constraints are dynamically viewable. These display employees’ general availability and preferred availability, as well as fixed shifts. Cross-site varieties of these views give a retailer that operates in multiple locations insight into which employees work at more than one of them. With the JDA solution, managers know when employees are approaching overtime, too. PTO requests easily find their way to managers, and users can insert relevant comments.

Additionally, the system limits requested time off from the onset. This disallows employees from making requests falling outside parameters. The system will draw managers’ attention to tasks they must still complete. Labor forecasts automatically show on managers’ displays, where demand and other data that informed creation of the schedule appear side-by-side with hours. Filtering is available.

In implementing the solution, JDA can bring 62 weeks’ worth of historical data from the omnichannel and elsewhere into the process, from the onset. This jumpstarts the technology’s ability to coordinate WFM and the supply chain right away.

JDA originally obtained its current functionality in scheduling when it acquired RedPrairie, in Q4 of 2012. Since then innovation in the solution has been methodical

and significant. In early Q4 of 2016, notably, JDA finalized a recapitalization through a \$574 million equity investment. The recapitalization bodes well for innovation across the vendor's portfolio. WFM-impacting evolution in product development is most recently evident in Store Optimizer, now in development.

Store Optimizer automates and prioritizes in-store processes to minimize complexity while facilitating execution by store associates. Specifically, Store Optimizer helps to ensure that the right employee receives the right task at the right time and, moreover, assigns tasks to available staff with the appropriate skill sets based on the staffing schedule created. The JDA Workforce solution for scheduling can pipe into Store Optimizer, which can intake multiple types of data feeds – point-of-sale (POS) data is an example. In addition, JDA has partnered with Intel to integrate the latter's Responsive Retail Platform (RRP) into Store Optimizer. The RRP pulls information from an array of activities tracked by radio-frequency identification (RFID), such as out-of-stock and misplaced inventory alerts. When augmented with scheduling data, the result begins to solve one of retailers' most intractable problems. Nucleus believes this can lead to greater store profitability and a significantly improved customer experience.

Employers will continue to seek as much of WFM functionality (and the rest of HCM) as possible from just one provider (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). Some industries, however, will always need mile-deep functionality in scheduling and time and attendance. This level of capability is something that many players even in this Value Matrix's Leader quadrant cannot provide – and will never provide due to constraints related to cost or their solutions' very architecture. JDA isn't going into deals where scheduling isn't special. The typical employer looking for JDA has a pronounced pain point, a sophisticated need, in this area. Nucleus believes, therefore, that JDA will continue to grow as a must-have WFM point solution in retail.