



WFM TECHNOLOGY VALUE MATRIX 2018

ANALYSTS

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THE BOTTOM LINE

This year's Workforce Management (WFM) Value Matrix reveals that legacy players Kronos and ADP have little brand equity left to mask their users' mounting dissatisfaction. Against this backdrop, Ceridian has gone public with the best combination of functionality and usability found in this report, and SumTotal Systems and Infor have advanced farther into the Leader quadrant. As JDA, WorkForce Software, and new entrant Replicon prove specialization remains inescapable in WFM, Infor and new entrant Ramco Systems have identified the epicenter of human capital management (HCM) as the fulcrum to unify the enterprise.

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WFM is the epicenter of HCM, where functionality for the essentials of employing people resides: payroll, core HR, time and attendance, scheduling, and benefits administration (Nucleus Research *197 – Value in HCM ripples from the epicenter outward*, May 2017). This is arguably the most important area of the enterprise to get right. The consequences of choosing a suboptimal vendor here are potentially paralyzing. At the same time, the risk of doing so is great: Some of the most storied brands in this space are today far from the best bets for workable WFM technology.

BRAND EQUITY HITS THE WALL

This year, vendors with superior technology for WFM have finally put considerable distance behind themselves and the promises behind trailing legacy competitors' brand equity—such that it is. Presenting themselves as the go-to choices for WFM, ADP and Kronos have for years survived off the fruits of brand equity that has gone stale. These fruits have left these vendors with a now difficult-to-manage, sprawling

installation base deployed on an alphabet soup of products. Some of these users are on the new products, whereas others are on greenscreen or other ancient solutions.



It isn't entirely the vendors' fault. Inertia can set in for long-time users. Apathy, frustration, and resistance to change fester in the vacuum. Customers stay for all the wrong reasons: Rip-and-replace is hard. Lift-and-shift isn't possible. Their unions are afraid of making a change. However, the reality remains: Scores of Kronos and ADP customers are unhappy. What's more, Kronos and ADP lose net-new and incumbent deals alike to the competition left and right. Their newest products struggle to compete. Without moving quickly on major course corrections, their fate will be an ever-snowballing combination of these dynamics and the logical conclusion.

KRONOS AND ADP

These are the unfortunate realities that Nucleus’s analysis continues to unearth. The 2018 WFM Value Matrix is less a revelation of this developments than a confirmation of Nucleus’s analysis regarding Kronos and ADP over the past several years. Much as these two vendors would like their customers and prospects to think the competitive landscape is set in stone with them at the forefront among vendors of technology for WFM, it is not. Last year’s report delved deep into the shortcomings in product and approach that Nucleus’s analysis has unearthed regarding Kronos and ADP (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). Following is an elaboration on how each has fared since:

KRONOS

With the launch of Workforce Dimensions, Kronos has halted a freefall into the Expert quadrant to stabilize its position and remain in an increasingly competitive Leader quadrant. The vendor’s profile, in this report, provides additional details. As Nucleus has noted repeatedly, Kronos has been slow to produce a viable modern solution for WFM—multitenant cloud-based, delivered via software-as-a-service (SaaS), and unified. Nucleus’s analysis finds that deployments of Workforce Central, Kronos’s solution for larger employers, are not in a multitenant cloud. Meanwhile, our analysis finds Workforce Ready, Kronos’s solution for small- and medium-size businesses (SMBs), is workable only for the smallest of small businesses (Nucleus Research *p208 – Kronos Cloud versus modern HCM tech*, November 2015).

Moreover, Nucleus’s analysis of deals in the marketplace indicates Kronos has been losing to the competition in ways attributable, ultimately, to these drawbacks. Many of those competitors are in this WFM Value Matrix. They win against Kronos in the vendor’s core target markets. Some users point to these competitors’ superior flexibility (Nucleus Research *s1 – Infor versus Kronos*, January 2018). Others turn to the competition as a better integration with their suite for HCM (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

The question is whether Kronos brought Workforce Dimensions to market in time. The product deepens Kronos’s relationship with Google, whose capabilities as a cloud platform are what Kronos apparently deemed a requisite (Nucleus Research *q22 – Google settles for Kronos in SMB market*, February 2016). What is certain is that Kronos’s customers have needed something modern for a while (Nucleus Research *p92 – On-premise users road to the Kronos Cloud is long and winding*, June 2015).

ADP

Nucleus's analysis of users' experience and the vendor's product roadmap has ADP dropping out of the Leader quadrant. Central to this is users' dissatisfaction with ADP. Another factor is the vendor's slowness in developing cloud payroll. Key competitors that remain and thrive in the Leader quadrant have cloud payroll today. ADP would disagree and claims its mainframe-based payroll is highly sophisticated, indistinguishable from non-mainframe-based payroll in the cloud. Calculation is swift, notes ADP, whose platform regularly processes pay for millions of employees.

It doesn't matter. ADP's brand has long been synonymous with the most essential piece of technology for employing people, payroll, and the vendor has now developed an image and innovation-related problem in this very area. At the expense of being cliché, the mainframe is not the future of payroll. It wasn't until the latter third of 2017 that ADP announced it had instated a closely guarded program to bring cloud payroll to market. At the time, the vendor was under very heavy, very public scrutiny that claimed ADP was not innovating its product as it should. The announcement of this program to develop payroll functionality in the cloud appeared hastily arranged—the announcement was moved earlier by several months. At the time Nucleus was briefed, a go-live timeline for it did not yet exist, and just one alpha customer was on this cloud payroll solution (Nucleus Research *r193 – ADP races continental drift to cloud payroll*, November 2017).

ADP may reenter the Leader quadrant in coming years. To do so, however, it must execute a healthy go-live cadence for this still-in-development cloud payroll solution. Plus, this cloud payroll must live up to expectations in terms of an alluded-to market-leading level of functionality. These are tall orders, and Nucleus is not optimistic given ADP's overall track-record and what ADP has stated in this effort versus the apparent pace of progress. In the meantime, Nucleus's analysis of users' experience continues to encounter deeply dissatisfied customers (Nucleus Research *r86 – Ultimate Software UltiPro ROI case study – AmeriPride Services*, May 2017).

VENDORS OF NOTE

A cast of notable protagonists in this year's WFM Value Matrix, not just in the Leader quadrant, provide counterpoint to the old guard's struggles. These vendors of note offer functionality and usability that are well-suited to a variety of scenarios.

CERIDIAN

With Dayforce, Ceridian remains the leading Leader. For the fourth year straight, the vendor presents the best combination of usability and functionality. From a

product standpoint, this feat underscores the strength and logic of Ceridian's having successfully gone public shortly ahead of this report's printing. The solution continues to deliver robust return on investment (ROI) (Nucleus Research *r134 – Ceridian Dayforce ROI case study – Rubio's Coastal Grill, August 2017*).

INFOR

This vendor may well turn out to be the tortoise that beats the hare. Infor has executed on a highly methodical, years-long march into the cloud for all its enterprise suites. The last of its core applications will leave its on-premises roots by summer 2018. Already, Infor is making good on promises to offer targeted CloudSuites—18 in all, so far—that offer intuitive combinations of functionality for various industry verticals. For example, the Health CloudSuite combines functionality for WFM with supply chain management (SCM) and financials (Nucleus Research *s62 – Infor lays out latest for the enterprise, March 2018*).

Infor illustrates the idea that providers of enterprise-wide solutions can have advantages over vendors that focus solely on fewer areas of it, or just one—for example, WFM. In this regard, moreover, Infor is well ahead of both SAP and Oracle in capitalizing enterprise-wide on the cloud—the key ingredient to make this work (Nucleus Research *s20 – State of the HCM market 2018, January 2018*).

JDA, WORKFORCE SOFTWARE

WorkForce Software, with its mile-deep capabilities in time and attendance and complex scheduling, maintains its strong position in the Leader quadrant (Nucleus Research *s68 – WorkForce Software for complex scheduling, April 2018*). Nucleus's analysis shows JDA, in the Facilitator quadrant, to be the best option for retail for providing a similar cross-section of WFM.

SUMTOTAL SYSTEMS

SumTotal Systems moves farther to the right to solidify the position it established last year, in the Leader quadrant. Nucleus's analysis finds SumTotal's platform for WFM benefits greatly from the learning-related functionality that permeates it. Nucleus recommends SumTotal as a consideration, especially when an employer's workforce requires up-to-date credentialing (e.g., certifications, licensing). Nucleus's analysis of users finds them highly satisfied with their WFM deployments overall.

PAYCHEX

In the Facilitator quadrant, the vendor continues to build on a capable solution geared toward SMBs' needs. Nucleus's analysis finds that Paychex brings strong competition not just to other vendors with a similar name, but also ADP (Nucleus

Research *r162 – The logic behind a prefix in HCM*, September 2017). The vendor is encountering Ceridian more frequently, and developments at Paychex this year strongly suggest it is taking necessary early steps to become a contender in payroll and WFM for global employers.

NEW ENTRANTS

Two new vendors have entered the WFM Value Matrix. One is Ramco Systems, and the other is Replicon.

- **Ramco Systems.** Another vendor whose suite of applications spans more of the enterprise, beyond WFM or simply the rest of HCM, is Ramco Systems. Close integration between WFM and the General Ledger (GL), for example—functionality in both cases native to Ramco—affords users an ability to synchronize these areas of the enterprise. As Nucleus has noted, the best first place for HCM to integrate with the enterprise is by connecting WFM with the GL (Nucleus Research *s20 – State of the HCM market 2018*, January 2018).
- **Replicon.** Replicon leverages functionality in time tracking, time management and related areas as a currency threading through WFM and other areas of the enterprise. For example, the solution applies the concept of time capture and tracking beyond the scope of WFM to cover professional services management (PSM) and other areas of the business where there is time to be tracked and captured. All this data helps to calculate global gross payroll and feeds into the GL to result in more accurate financials and improved regulatory compliance.

The following pages provide more details and a profile for every vendor appearing in the 2018 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 Systems, Kronos, Infor, and Ceridian.

WORKFORCE SOFTWARE

Solidifying its position in the Leader Quadrant, WorkForce Software continues to build on a firm foundation of functionality and usability. WorkForce covers time and attendance, staff scheduling, absence and leave management, labor analytics, and fatigue management, providing all new deployments in a modern cloud-based,

SaaS-delivered platform. For payroll, WorkForce integrates readily with whatever the user has already deployed. Meanwhile, scheduling functionality from WorkForce is designed to handle exceptionally high levels of complexity, and for several years the vendor's go-to-market strategy has reflected this strength.

WorkForce has presently announced a new integration of its scheduling capabilities with time and attendance from Oracle. Nucleus's analysis suggests this is an apparent move by WorkForce to replicate a successful partnership with SAP. For several years WorkForce has perfected and marketed a tight integration with SAP. Both Oracle and SAP must outsource this level of bolt-on sophistication for deployments where the shared customer has complex needs in scheduling. (This is one of several rationales behind why neither Oracle HCM Cloud nor SAP SuccessFactors appears in the WFM Value Matrix.)

To promote and speed cooperation, WorkForce recently opened its platform to partners. Interestingly, both SAP and Oracle have announced similar integrations with Kronos (Nucleus Research *r77 – The curious case of me too Kronos integrations*, April 2017). Nucleus's analysis of these arrangements finds that in the case of SAP the go-to solution for these scenarios is WorkForce. Nucleus expects a similar outcome, in practice, for Oracle. Notably, WorkForce offers a comparable integration for customers of Workday. This is unsurprising. Nucleus's analysis has found that Workday has only basic functionality for time and attendance and no apparent ambitions to take on scheduling, where WorkForce shines (Nucleus Research *r146 – Separating the walk from the talk with Workday*, July 2017).

Following are additional developments of note:

- **Employment law.** The ability to comply with the Americans with Disabilities Act (ADA) is now built directly into the solution. This bolsters one of the vendor's strongest suits, its ability to support users' compliance with complicated regulatory framework.
- **Managed services.** The vendor has launched managed services for customers that would rather not have to deal directly with updating their system; instead, WorkForce will manage this and the system itself for them.
- **Training.** An improved native platform for learning-related functionality is now available within WorkForce. The rationale to coordinate training and scheduling is intuitive and pits WorkForce against the very few other vendors in this report that have similar capabilities in this area.

- Android OS Mobile UI for crew management. A new mobile solution for crew management is presently available. It builds an entire timeline for a crew—down to what job each team member has done and for how long, meal breaks, etc. The new offering is for industries such as agriculture, energy or utilities, financial services (e.g., insurance), and construction, where fluid groups of field workers need a way to manage time with and without an Internet connection.

Following are highlights from the near-term product roadmap: expanded global leave management; global, regional, and country-specific standard capabilities; localization for EMEA, Canada, Brazil, Germany, and Australia; additional third-party clock integrations; regulated leave in addition to ADA; additional payroll integrations; a standard integration platform; further enhancements in fair and predictive scheduling; and schedule auditing.

As Nucleus's analysis suggests elsewhere in this report, Kronos's decision to launch Workforce Dimensions and force users to migrate to it is prompting long-time customers of that vendor to consider their options. WorkForce is among these options and itself reports seeing an uptick in inquiries from Kronos users.

WorkForce continues to invest in developing a network of solution integrators (SIs). Nucleus detailed the program, designed to bring order to the process and promote knowledge-sharing, in last year's report (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). The vendor also continues to perfect the Xcelerate program for quick, standard cloud implementations (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

Nucleus's analysis of the experience of WorkForce users is well-documented (Nucleus Research *r203 – WorkForce Software ROI case study – ATS Automated Tooling*, January 2018). Flexibility in the system tends to eliminate inefficiencies, which translates to gains in productivity (Nucleus Research *s68 – WorkForce Software for complex scheduling*, April 2018).

SUMTOTAL SYSTEMS

Last year SumTotal Systems moved into the Leader quadrant. This year, the vendor has put some distance rightward between itself and the vertical axis. Moreover, as the axes' point of intersection continues to move steadily upward and to the right, SumTotal has outpaced this, too. In other words, the vendor's usability and functionality are improving faster than the average for the market (Nucleus Research *r59 – Understanding the Value Matrix*, April 2017).

Skillsoft and SumTotal have remained separate entities since late 2014, when the former acquired the latter. Nucleus's analysis shows SumTotal to be a wise choice for employers with complex needs in scheduling. Aside from the content found in Skillsoft, SumTotal has robust native capabilities in learning. These intertwine with WFM to support complex rules in scheduling. For example, a user may at once prompt an employee to renew his or her license to operate a forklift and disallow the scheduling of this employee till the system confirms renewal of this license. To Nucleus's knowledge, this ability is unique among vendors in this year's report.

Users of SumTotal may obtain the very latest version of the software SaaS-delivered via multitenant cloud, privately hosted by SumTotal, or on-premises. This is significant as it helps to minimize version sprawl by making it easy for users, no matter their circumstances, to ditch an old iteration should they wish. SumTotal encourages, but does not force, them to do so. Related, Nucleus encourages most employers to migrate to a multitenant cloud as soon as they can, as the financially quantifiable benefits of doing so are undeniable (Nucleus Research *r208 – Cloud now delivers 3.2 times more ROI*, December 2017).

This year SumTotal has introduced new dashboard widgets, several improvements to the user experience, and the ability for employees to trade on vacation and absences (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018). New functionality overall spans highlights such as the following:

- Schedule calendar, as well as worked calendar, for employees
- Ability to handle portability-of-data requests by employees for personal data collected, supporting General Data Protection Regulation (GDPR)
- New internal notifications for ESS
- Exportation and importation options for public holidays, payroll calendar, and rosters and shifts
- Processing of mass timesheet updates for absence and bonus codes
- Scheduling of advanced standard and ad-hoc reports
- Validation of training and certifications when creating or editing employee schedules

Users laud SumTotal's flexibility and nimbleness in handling complex scheduling and benefits management for wage employees. Nucleus's analysis of users' experience with SumTotal in fact finds the solution able to handle union rules that Kronos can't.

This is despite the latter's popularity, as Nucleus has noted elsewhere, as a legacy deployment that unions tend not to want to replace (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). In deals, moreover, users choose SumTotal over ADP citing the latter's lack of cohesion as a solution.

KRONOS

Kronos remains in the Leader quadrant. Last year, Nucleus's analysis of user cases and aspects of Kronos's premiere offerings, Workforce Central (for enterprise-class customers) and Workforce Ready (for SMBs), had the vendor in a freefall into areas below the horizontal axis. Facts on the ground suggested strongly that the vendor was faltering compared to the competition and as the center point of the Value Matrix moved ever farther upward and to the right (Nucleus Research *r59 – Understanding the Value Matrix*, April 2017).

This year, Kronos appears to have halted that descent. Nucleus credits the change in outlook to the vendor's launch of Workforce Dimensions, a bona fide SaaS-delivered solution for WFM residing on Google's multitenant cloud architecture. As Nucleus repeatedly noted before the new product's launch, Workforce Central deployments are not in a public, multitenant cloud (Nucleus Research *pg2 – On-premise users road to the Kronos Cloud is long and winding*, June 2015). Meanwhile, Workforce Ready has shown itself to be largely unworkable for anything but the smallest of small businesses (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017).

In other words, the new suite is welcome and a necessary step forward (Nucleus Research *r22 – Four HCM mistakes to avoid*, January 2017). Nucleus has questions about it. What are the plans for open standards? How does Kronos manage the middleware? Nucleus's understanding is that Workforce Dimensions is a lift-and-carry of functionality from the two heretofore available offerings. Nucleus understands why Kronos would want to migrate as many customers as possible, as soon as possible, to the new solution. Users have noted that the push is at times heavy-handed and compelling them to explore the competition.

Following are additional developments at Kronos pertinent to this report:

- WFM-to-WFM partnerships and integrations. In Q4 of last year, the vendor announced a continued commitment to innovation in its integration with SAP SuccessFactors for global deployments of technology for HCM. In some ways, the announcement appears to follow a pattern among Kronos's partnerships with others (Nucleus Research *r77 – The curious case of me too Kronos integrations*, April 2017). In other ways, however, the partnership makes sense. Nucleus has documented SAP SuccessFactors' challenges in developing

adequate native technology for time and attendance and, particularly, scheduling (Nucleus Research *q172 – HCM Technology Value Matrix 2016*, September 2016). As of late, that vendor has made notable strides in overcoming this deficiency (Nucleus Research *r160 – HCM Technology Value Matrix 2017*, August 2017). In the meantime, SAP SuccessFactors partners with others for the same functionality with great success (Nucleus Research *r62 – At VISION 2017 WorkForce Software shares latest*, April 2017).

- **Advanced scheduling partnerships.** In the area of clinical scheduling, Kronos announced in Q1 of 2018 that it has entered a partnership with Spiral Software, home to AMiON physician scheduling software. This partnership also makes sense. Scheduling for some professions and roles is a highly specialized field. The very best scheduling-focused providers in the WFM Value Matrix must be able to integrate with solutions from vendors that focus exclusively on these needs (Nucleus Research *s68 – WorkForce Software for complex scheduling*, April 2018). Kronos's partnership here will make the vendor's offering more inviting to prospects in the healthcare industry.

In addition, over the past 12 months Kronos has announced a major upgrade to mobile functionality, as well as enhancements to the vendor's ability to provide users with analytics. Both these moves appear to mirror similar announcements by competitors, where analytics are becoming ever more sophisticated (Nucleus Research *s62 – Infor lays out latest for the enterprise*, March 2018). Modern analytics depend on cloud architecture to deliver on their promise. Therefore, Kronos's ability to keep pace in providing analytics on par with its competitors' offerings should benefit from the launch of Workforce Dimensions.

INFOR

For WFM, Infor covers core HR, labor cost controls, enhanced operating efficiencies and agility, time and attendance, scheduling, absence management, task management, and Infor Human Resource Management (HRM) Benefits Administration. SaaS-delivered payroll facilitates regulatory reporting, compliance with employee law, and the processing of payroll taxes.

A perennial Leader in the Value Matrix, this year Infor maintains its position, in the center of this quadrant, on the strength of a growing collection of cloud solutions tailored to industry verticals. To date, 18 of these CloudSuites are available, each designed specifically for a different industry. WFM is available with each. For example, for health-focused organizations the Health CloudSuite combines functionality for WFM with supply chain management (SCM) and financials. Here, SCM finds a close sister in Infor's suite for enterprise asset management (EAM).

The CloudSuite strategy at Infor underscores the vendor's ability to meet users' needs across the enterprise, not just in WFM or HCM. Only a handful of vendors in HCM offer a suite for more of the enterprise.

Whereas many years ago a few companies tried to execute on the idea that one vendor could provide in-sync applications for the entire enterprise, the limitations of on-premises technology and these solutions' data models scuttled the quest. Earlier this year, however, Nucleus noted that the state of technology today breathes new life into this old aspiration. The possibility hinges on two factors: being fully in the cloud and having a workable data model that produces holistic, enterprise-wide insight for users, in the form of predictive and prescriptive analytics (Nucleus Research *s20 – State of the HCM market 2018*, January 2018).

Infor appears closest to achieving these goals. By summer 2018, Infor CRM will have migrated completely to the cloud. CRM is the final application in the Infor suite to do so. Meanwhile, the vendor has thrown the gauntlet in analytics. Artificial intelligence (AI)-inspired functionality dubbed Coleman draws on natural language processing (NLP), image recognition, and machine learning to work in concert with the cloud-based analytics platform the vendor acquired in 2017, Birst. What Infor dubs Reveal then presents predictive and prescriptive analytics for users. These predictions and recommendations reflect data not only in WFM, but elsewhere across the Infor enterprise applications and from outside the system, too (Nucleus Research *s62 – Infor lays out latest for the enterprise*, March 2018).

In terms of revenue, WFM is the second best-performing area of the Infor cloud enterprise and thus receives healthy investment dollars from the company. Push notifications instruct managers when to send word of open shifts with urgent need to staff. Geofencing for mobile clock-in and clock-out is in the near-term product roadmap. Offline clocking is available, as are enhancements to time-off requests (i.e., in ESS and MSS). Employees may post their own shifts.

Nucleus's analysis of Infor's customers in WFM unearths several positive aspects of their experience, all underpinning the vendor's placement in the Leader quadrant. For one, users see marked increase in productivity. A large U.S. bank redeployed 70 scheduling-related staff and thus saved more than 145,000 hours' worth of time per year after deploying Infor. Another user noted Infor's enterprise-wide suite brought consistency. Others express satisfaction with the scheduling solution, functionality for ESS and MSS, the mobile-friendliness, and processing for E-Verify and I-9 forms. It is notable that much of Infor's new business in WFM comes from disaffected former Kronos users (Nucleus Research *s1 – Infor versus Kronos*, January 2018).

CERIDIAN

With Dayforce, Ceridian provides full-breadth WFM on a single application producing a single dataset governed by a single rules engine. This is no small feat, and results in a solution that is just plain better than others for many, many user scenarios. It is this rationale that has led Nucleus to position Ceridian as the leading Leader in the past several years' WFM Value Matrices, and this year is no different.

WFM is the epicenter of HCM. This is where the essentials of employing people reside. The vendor continues to reinforce and innovate functionality. In WFM, however, Dayforce is particularly mature. Last year Nucleus noted that, because of this, new features are iterative rather than sweeping in nature (Nucleus Research *r66 – WFM Technology Value Matrix 2017, April 2017*):

- Global payroll. Ceridian's efforts to expand the number of countries it directly supports for payroll have yielded much fruit. Only Ramco and SAP are on a similar footing in approaching the breadth of ADP in this regard, and their status—especially in the case of SAP—loses its luster against the nature of the rest of their solutions for WFM, compared to Dayforce.
- Global compliance. The vendor continues to transform itself into a global player in WFM in other ways, too. In the most recent 18 months, Dayforce has added notable functionality designed specifically to facilitate compliance with the regulatory framework for employment in EMEA and Europe.
- Mobile, clocks. Last year Ceridian released a new Dayforce Touch clock, Dayforce TUFF, for hard labor environments. It's NEMA-class, short for National Electrical Manufacturers Association.

Nucleus has analyzed the ROI of numerous Dayforce deployments and finds robust results most recently in the grocery and restaurant industries. Users here and from other deployments of Dayforce express satisfaction with the intuitiveness of core HR records and report productivity gains attributable to the ease of use and mobility of ESS and MSS. The latter bolsters recent findings by Nucleus in this area (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity, April 2018*).

Shortly ahead of this report's publishing, Ceridian became a public company on the heels of a successful initial public offering (IPO). Nucleus finds this unsurprising, judging from the speed with which Ceridian expanded Dayforce post-acquisition into a full suite for HCM.

EXPERTS

Experts in the Value Matrix include Paycom, Epicor HCM, and ADP.

PAYCOM

An option for SMBs, Paycom began as a payroll application and for WFM has since expanded into SaaS-delivered time and labor management, core HR, and benefits-related compliance. Analytics help with compliance. The Paycom architecture is a single application producing a single database rooted in the employer's origins in payroll. Security protections are robust. Additionally, Paycom provides most functionality for HCM and appears in the related Value Matrix (Nucleus Research *q172 – HCM Technology Value Matrix 2017*, August 2017).

Since last year's WFM Value Matrix published, innovation in the suite has been mostly outside WFM. This explains the lack of an arrow in its positioning within the Expert quadrant. One exception is the vendor's launch, in early May 2018, of revamped functionality for ESS. Improvements span both the desktop and mobile domains of Paycom's application. The UI has been redesigned, and new functionality centers on providing more immediacy to employees (e.g., shift clock-in and clock-out, expense report management, timesheet manipulation, etc.). As Nucleus's analysis has shown in general, a workable, modern portal for ESS translates to gains in productivity (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018).

Paycom remains a strong option for SMBs. While lacking the depth that some of the enterprise-grade WFM vendors in the Leader quadrant have, Paycom offers a competitive solution that meets the typical SMB's fundamental business needs. Paycom users continue to report limitations in functionality and reporting, but positives include ease of use, dedicated account managers, frequent automatic updates, and competitive pricing.

EPICOR HCM

Epicor HCM remains in the Expert quadrant. Cloud-based WFM functionality is available as part of a suite that integrates with the vendor's other solutions. WFM functionality covers payroll, benefits administration, time and attendance, absence management, and scheduling. The vendor also offers predictive analytics to identify staffing needs and provide insight into things like staffing demand and trends.

Known mainly as an ERP vendor, Epicor has an WFM solution that is part of Epicor HCM, whose installation base is primarily in the manufacturing, distribution, retail, and services industries. Users may link WFM or HCM with their other Epicor

applications. They may also use Epicor HCM to manage their compliance with employment law. The solution offers both ESS and MSS, which allow both to view their information and save time and HR labor (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018).

Last year, Nucleus noted several users saying a full mobile offering would be a valuable addition (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). As also noted last year, Epicor has since developed new capabilities pertinent to mobile candidates and government compliance.

In last year's report, as well, Nucleus noted users critical of the previous UI and a lack of predictive analytics (Nucleus Research *r184 – Talent Management Technology Value Matrix 2017*, October 2017). Countering this trend, a rollout of a new UI, in August 2017, is now in full swing, and Nucleus's analysis indicates users are positive about new features and functionality in these areas. Users also note that the vendor's scheduling system, while fine for straightforward scheduling scenarios, struggles when faced with more complex needs. As is the usual in multivendor deployments, the time and attendance component of the Epicor HCM suite will feed information into another payroll application, if the employer uses something else.

ADP

This year ADP has dropped just below the horizontal axis to enter the Expert quadrant. Complaints from users current and former have become loud enough to outweigh any favor the vendor may have earned through sheer years' worth of being the first name that comes to mind when those in the industry think of payroll.

It's not that ADP is unworkable as a solution, and it's not that the vendor's suite lacks wide breadth of functionality. But Nucleus's analysis finds many ADP customers wishing they had something different in place. The dissatisfaction appears to be a general frustration attributable to no one thing. This explains the bulk of the rationale behind ADP's descent down the vertical axis this year. Several alternatives exhibit far better usability. Some of these options are in the Facilitator and Leader quadrants of this report.

One challenge the vendor faces is that a large contingent of its existing installation base is on an older solution from ADP. Furthermore, in deals where ADP reaches these customers to present them with one of its new solutions for midsize or enterprise-grade employers—Workforce Now or Vantage HCM—users often choose the competition for reasons such as price and flexibility in the deployment. (ADP RUN is more competitive; the target demographic tends to have less complicated needs.)

Another factor in ADP's drop out of the Leader quadrant is an issue having to do with perception: ADP still uses a mainframe for payroll. This mainframe for payroll is highly sophisticated. ADP's payroll calculation engine processes payroll for an exceedingly large number of American workers via this IBM system Z mainframe. A multitenant application, it hosts and provides access to employers via the internet the same way a bank or financial institution also runs on a mainframe, yet acts like a cloud-based application. The differences between the two are highly technical, but mainframe-based payroll of this kind is an anachronism when multitenant cloud-based payroll not on a mainframe is the destination for most employers wishing to modernize their HCM.

Tellingly, ADP announced efforts, last fall, to build multitenant cloud-based payroll presumably not mainframe-based. This is a positive development. ADP is suggesting that this cloud payroll technology will be industry-leading—once it launches. Nucleus's analysis indicates the vendor does not have a solid timeline for this, and the announcement appears to have been rushed. Just one customer, what ADP calls an alpha user, is in extensive pre-beta-testing. In a related report, Nucleus erroneously noted this beta user has mostly salaried employees. (Nucleus Research *r193 – ADP races continental drift to cloud payroll*, November 2017).

One area where ADP excels is in the functionality and usability of its mobile application, which sits atop proprietary assets of Kronos and ADP. Also, as noted last year, ADP is among the very best choices for global payroll. If ADP can make good not only on launching cloud payroll, but also in deploying it across a wide berth of its installation base, the vendor will have cleared one important hurdle to reenter the Leader quadrant of the WFM Value Matrix. Another will be the emergence of a sizeable contingent of customers who consistently express satisfaction with Workforce Now and Vantage HCM.

CORE PROVIDERS

Core Providers in the Value Matrix include Replicon, Paylocity, and Paycor.

REPLICON

A new entrant this year, Replicon lands in the Core Provider quadrant. For this report, the scope of WFM spans full payroll, core HR, time and attendance, scheduling, and benefits administration. Replicon's position in the quadrants reflects its focus on time tracking and management and gross global payroll calculation. The focus is deep, and Replicon's product roadmap shows the vendor is playing a long game in applying the WFM-centric idea of time management across the enterprise—professional services management (PSM) is one example. Much of this permeation

falls outside the purview of this report, yet illustrates the scope of WFM's influence. In ways, Replicon is in company similar to Ramco Systems and Infor, vendors in this WFM Value Matrix who offer enterprise-wide suites featuring strong WFM.

The vendor's solutions comprise cloud-based functionality and applications for automating time tracking related to employees, projects, expenses, and resource scheduling. With all this, the idea is to track contractors' billable hours or employees' time, for example, against project costs and the like. Tight integration with the GL is, therefore, part-and-parcel of Replicon's solution. This helps ensure that all time-related data is accurate for accounts payable. For example, in Q4 of last year the vendor launched Time Intelligence, a system of record that funnels all trackable time from all areas of the enterprise through one tributary feeding the GL in real time. The accuracy of time tracking functionality found in Replicon also facilitates compliance and informs complex scheduling, as well as predictive and prescriptive analytics, pay rules, and time off management.

Aside from the conventional silos of the enterprise, Time Intelligence is about automatically capturing and analyzing sources of time in employees' mobile devices or across the global organization. Additional, potential sources of time-related data that fall within the scope of Time Intelligence are the Internet of Things (IoT) and systems for AI, machine learning, and deep learning. In the realm of providing an AI-inspired source of data for Time Intelligence, Replicon added functionality for face recognition and chatbots in February 2018.

Alongside the launch of Time Intelligence, Replicon introduced functionality to automate global time tracking and the calculation of gross pay, helping users with compliance via a mechanism to manage all time centrally. In the same timeframe, Replicon made available new interfacing to facilitate users' ability to integrate with legacy on-premises ERP systems from SAP, Oracle, JD Edwards, and PeopleSoft.

Nucleus's analysis of users' experience finds them satisfied with a system they describe as very straightforward. They report easy, reliable integration with popular payroll systems. A Global Payroll Workbench pushes gross pay data to whatever payroll vendor the user has for net calculations. Of note, Replicon is winning in deals against Kronos. One reason is that Kronos's functionality is insufficiently flexible for handling union rules—ironically, a core stronghold of Kronos's sprawling installation base. It appears that there is room for improvement in mobile functionality, where Replicon struggles to facilitate some subtleties of time management. It's worth noting, however, that basics such as submitting and approving timesheets are smooth in the mobile application. Users report that Replicon reporting necessitates

a bit of a learning curve, but once mastered, is straightforward and customizable. The vendor is reportedly receptive and responsive to user feedback.

As Nucleus noted last year, it makes more sense for employers to consolidate all their HCM-related needs with as few vendors as they can—just one, if possible (Nucleus Research *r160 – HCM Technology Value Matrix 2017*, August 2017). Having the entire suite for HCM with one vendor minimizes hassles and simplifies data management. However, there is much room far into the future in areas of HCM, notably talent acquisition and the scheduling and time and attendance aspects of WFM, for enhanced bolt-on functionality (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). Replicon falls under these auspices, and Nucleus expects the vendor to exit the Core Provider quadrant in coming years.

PAYLOCITY

In the cloud and SaaS-delivered, Paylocity is mostly for medium- and enterprise-sized users. WFM includes payroll, core HR, benefits administration, and time and labor. Payroll has data integration, which helps ensure regulatory compliance. Additionally, Paylocity is a registered reporting agent for the IRS and can provide users with a complete tax filing services.

Paylocity offers MSS and ESS, reducing a time-consuming burden for HR staff and improving overall productivity with shortened response times and more complete information (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018). Paylocity offers more than 100 standardized reports with associated insight charts, as well as simplification for the onboarding process to reduce time associated with new hires (Nucleus Research *s33 – Running the full gamut in onboarding productivity*, February 2018). Paylocity also provides a year-end dashboard for HR to engage in tax reporting or prepare W-2s. There is extensive automation in Paylocity of activities around expense filing, reporting, and reimbursement, saving both time and reducing errors related to manual entry.

Since the previous report published, Paylocity announced the acquisition of BeneFLEX HR Resources, Inc., a third-party benefits administrator, to help with employee benefit plans such as flexible spending accounts (FSAs), health savings accounts (HSAs), health reimbursement accounts (HRAs), and COBRA.

PAYCOR

Again in the Core Provider quadrant, Paycor is a cloud-based suite for WFM that covers payroll processing, core HR, time and attendance, reporting, benefits administration, and compliance reporting. Since Q4 of 2017 the vendor has entered into two partnerships to enhance its abilities where benefits administration and

payroll processing intersect—one with Employee Navigator, the other with Web Benefits Design. Paycor is also available in Spanish.

Last year, Nucleus went into detail on how and where Paycor sits in the marketplace—the vendor’s logical competition and typical customer size. Most employ approximately 50 in staff, and many of Paycor’s customers are SMBs implementing their first-ever technology for WFM (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017). Notably, the vendor is also replacing competitors’ solutions. Nucleus’s analysis suggests ADP RUN, Zenefits, Namely, and others are among these competitors whether Paycor is facing or replacing them.

Paycor has 401K-related automation and integration, too, as well as new functionality for compliance and benefits administration. The vendor’s mobile functionality helps employees with actions such as clocking in and out of their shifts, looking up their work schedules, viewing action balances, requesting time off, and viewing their paychecks and pay history. Recently, Paycor released capabilities in mobile to help users more easily navigate and understand their organizational structure. These are all hallmarks of modern ESS (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018). A Turnover Dashboard, announced in November 2017, aggregates and crunches numbers found in the Paycor ecosystem to produce insight for users into employee flight risks (Nucleus Research *s56 – The ROI of reducing employee turnover*, March 2018).

Paycor is particularly well-suited to several niches and industry verticals, especially nonprofits and small healthcare-related organizations. As Nucleus has noted previously, Paycor is a popular choice among smaller franchisees.

FACILITATORS

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

RAMCO SYSTEMS

Ramco Systems is a cloud-based, SaaS-delivered solution for HCM, EAM, and ERP. The vendor also provides software for logistics management and for the aviation industry. WFM-related components found in the solution are core HR, global payroll, and time and attendance. ESS and MSS thread throughout the suite. As Nucleus’s analysis shows, robust functionality in this area yields large-breadth gains in productivity (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018).

New to the WFM Value Matrix, Ramco debuts in the Facilitator quadrant. As do a handful of other vendors that provide technology to encompass more of the enterprise than just HCM, Ramco is at an advantage. With ERP, the suite includes the GL, which receives information from the rest of the system—including, most critically, WFM-related activities. As Nucleus has repeatedly noted, the best first place to integrate HCM with the rest of the enterprise is with ERP financials (Nucleus Research *s20 – State of the HCM market 2018*, January 2018). Ramco, in fact, introduces several interesting variables to the competitive landscape:

- With EAM and ERP in Ramco's tow, for example, the vendor is a theoretical competitor to Infor, Oracle, and SAP (with or without SuccessFactors) in deals where prospects want an enterprise-spanning suite that includes WFM (Nucleus Research *s62 – Infor lays out latest for the enterprise*, March 2018).
- The vendor provides global payroll in 43 countries, which puts Ramco on similar footing with ADP and SAP in global payroll coverage. It is important to note that, despite this, Ramco works with Ceridian, Paylocity, and Paychex et al. to provide payroll in the United States and United Kingdom.
- Ramco brings credible competition to Workday with core HR and integration with the GL. Workday has been on a tear to become the most pervasive global system of record for HR, but notably, its functionality in payroll and time and attendance is weak (Nucleus Research *r146 – Separating the walk from the talk with Workday*, July 2017).

Keeping pace otherwise with competitors such as those mentioned above, the vendor provides analytics in the form of Ramco Insights. Much of the functionality here centers on predictive capabilities around employee attrition, though customers whose experience Nucleus has analyzed point to the vendor's powerful analytics as the decisive factor in persuading them to choose Ramco. As for mobile, the native application is available for Android, iOS, and Windows.

Nucleus's analysis of users' experience finds them satisfied with the solution overall. As for areas for improvement, users say it is difficult to manipulate data to fit Microsoft Excel—a capability that others in the WFM space have worked hard to perfect (Nucleus Research *r78 – Global HCM starts with payroll and compliance*, April 2017). Some users report data-formatting issues apparently originating in Ramco's international roots, but this annoyance is a relatively mild issue and easy to fix. Another criticism is the UI, which can be clunky, users say.

It is notable that none of these criticisms swayed users with whom Nucleus spoke to seek alternatives to Ramco. In fact, users noted in one way or other that Ramco is

powerful software. Nucleus sees in Ramco a vendor committed to innovation in the product. An aggressive global go-to-market strategy necessitates this innovation. The attendant, apparent dedication to expanding into the U.S. and U.K. markets with fully compliant native payroll means Ramco is on track to become a full-throated, end-to-end option in WFM (and HCM) for global employers in the next few years. Ramco's position in the WFM Value Matrix is likely to move commensurately.

PAYCHEX

Paychex remains in the Facilitator quadrant, but is moving close to becoming a Leader. The vendor offers a cloud-based, SaaS-delivered suite for SMBs, Paychex Flex, that spans the entirety of WFM and, outside this, intuitive elements of HCM (Nucleus Research *r153 – Where talent is most important*, August 2017).

For WFM itself, Paychex Flex encompasses benefits administration, time and attendance, compliance, core HR and, of course, payroll. Every user has a dedicated support specialist who is available 24 hours per day every day of the year, including weekends and all holidays. Nucleus's analysis finds users noting usable dashboards and a streamlined integration with key applications, notably the GL. Paychex can handle time and attendance for organizations employing up to 10,000 in staff. This capability includes compliance with employment law. Advanced scheduling and budgeting, as well as analytics, are available too. Paychex has also launched an iris-scanning time clock to help employers eliminate buddy-punching.

Paychex continues to encounter ADP in deals. Paycor, Paycom and Paylocity are frequent competitors, too (Nucleus Research *r162 – The logic behind a prefix in HCM*, September 2017). The vendor reports encountering Ceridian Dayforce with increasing frequency, which makes sense against the backdrop of Nucleus's analysis.

Paychex has an intuitive UI for mobile, where ESS enables users to see and manage essentials of employment such as pay and rosters. In real time the system records employees punching in and out of their shifts. Additionally, users can select health-related benefits. The payroll application receives this information immediately. This benefits administration module integrates with Flex Time and is available standalone, as well.

Paychex acts as a broker or agency, one of the top 25 in the industry. Moreover, the vendor has been a professional employer organization (PEO) for years. Paychex will engage with good-risk businesses to help reduce costs for various benefits. Human resource generalists (HRGs) form one-on-one relationships, as advisors, and verify whether employers are compliant with regulations. Paychex employs approximately 500 HRGs across the United States. Their average tenure is seven years. In a related

move, last summer the vendor acquired HR Outsourcing, Inc. (HROI), an SMB-focused PEO operating in more than 35 states.

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

- A tax credit service was introduced in Q1 of 2018. As a customer's new hires come on board, Paychex immediately cross-references the pertinent information to see whether any tax credits are available to the hiring organization. Occasionally, these tax savings can be significant.
- In Q4 of 2017, the vendor announced that the Paychex General Ledger Service (GLS) now integrates with Sage Intacct. The development synchronizes payroll and accounting data, and users may post payroll entries to Sage Intacct.
- A possible indication that the vendor aims to expand globally, Paychex acquired the Denmark-based Lessor Group, vendor of technology for payroll and other aspects of HCM for users in Northern Europe.

In early 2018, Paychex announced that it had entered into a partnership with Netspend to offer the latter's capabilities in helping restaurants manage and distribute tips to employees such as waitstaff.

NAMELY

SaaS-delivered and based in a multitenant cloud, Namely remains in the Facilitator quadrant. The vendor's solution can handle users who employ up to approximately 3,000 in staff; employers in its installation base average 200 in staff, and the vendor says the solution's optimal customers employ anywhere from 20 to 2,000 in staff. Nucleus's analysis finds that the majority of Namely's new business wins are employers retiring a solution from ADP or Paychex, both of which are competitors for net new deals. Recent announcements from Namely include:

- In Q4 of last year, the vendor announced that it now offers a managed version of its HR technology platform called Managed Services. This includes core functions such as payroll, benefits administration, and compliance, along with features such as time keeping. Customers will have dedicated account managers who can do everything from run payroll to track benefits.
- Also in Q4 of last year, the vendor announced a new analytics tool providing HR teams with the data. Namely Analytics includes detailed reports such as salaries, job changes, and attrition.

For WFM, the Namely suite encompasses payroll, core HR, time and attendance, and benefits administration. Last year the vendor introduced time management and, recently, expanded this to mobile for employees and managers. Updates to the iPhone application continue, and the solution is now iPhone X-compatible.

Through ESS, 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 (Nucleus Research *s69 – Modern tech for ESS and MSS boosts productivity*, April 2018). Administrators can run payroll and other activities from a dashboard. Nucleus’s analysis of user feedback finds them saying the user interface, and particularly the ESS, are intuitive, easy to operate, and require little or no training for employees. This frees management’s time.

Users also noted the modern look and feel of the UI, which offers a newsfeed resembling those found in consumer-grade social media. Additionally, employees can see everything in a calendar view whose look resembles popular scheduling tools and synchronizes with Microsoft Outlook and Google Calendar. The 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 as well as what impact this would have on their paycheck. Insurance providers’ information pipes into this area in real time. Manager view for open enrollment has more specific, more granular menu options.

For reporting, the vendor offers enterprise-grade reporting to small business users, with more than 80 standard reports available for use. Users are also able to create highly customized reports from scratch to meet 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.

JDA

The JDA solution is tailored for the needs of retailers by focusing tightly on their complex needs in scheduling and associated time and attendance. JDA’s position, in the Facilitator quadrant, reflects this. The vendor’s ascent along the vertical axis especially, for the vendor’s usability, makes sense. Nucleus’s analysis continues to find that users in retail experience a transformation in their ability to predict, anticipate, and meet labor needs in a way that approaches precision.

The solution is likely the best for retail environments, where Nucleus’s analysis finds JDA winning in head-to-head deals against Kronos and even Ceridian Dayforce and WorkForce Software when employees’ time on the floor or elsewhere on the job must reflect the constantly changing variables in the omnichannel—e.g., sales

history, foot traffic, shipments, customer behavior, and activity in ecommerce and in the warehouse and elsewhere. As a perennial Leader in Nucleus's various Value Matrices looking at SCM and related areas of the enterprise, JDA has the data in this regard to inform WFM activities (Nucleus Research *s43 – IO Technology Value Matrix 2018*, February 2018).

The system enables employers to set fixed shifts for employees who want it and finds the best work for that person to do during these fixed times. A forecasting engine consisting of 17 algorithms helps users figure out the best possible schedule at any given time and serves as the base for scheduling functionality in the system. Functionality can also be used for long-range planning, taking historical and real-time data into account. In implementing the solution, JDA can bring 62 weeks' worth of historical data from the omnichannel and elsewhere into the process. Scheduling also has an optimizer which accounts for employee attributes, including professional certifications and more, to help ensure that the employer has the properly qualified people on the job and to disallow the scheduling of minors when they may not work according to employment law.

For payroll, JDA will integrate with an employer's existing solution. ESS, a mobile-based feature, enables employees to swap shifts and managers to communicate 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. Availability constraints are viewable in many ways to show employees' general and preferred availability, as well as fixed shifts. Retailers that operate in multiple locations can see which employees work at more than one of them and what these workers' availability constraints are. Managers know when employees are approaching overtime and have ready access to PTO requests, where users can insert comments.

The system limits requested time off from the outset. This keeps 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 addition to all this, the Store Optimizer found in JDA's solution 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. Last year's report goes into further detail (Nucleus Research *r66 – WFM Technology Value Matrix 2017*, April 2017).

JDA acquired RedPrairie, original source of the vendor's WFM functionality, in Q4 of 2012. Since then innovation has been significant. In analyzing customers, Nucleus has spoken with several users. Some have been with the solution long before the JDA acquisition. One takeaway is that JDA encounters no difficulty pulling data from an omnichannel where JDA is not the SCM provider. One user operating under these circumstances learned that its team was wasting time by staying open longer on Black Friday and Thanksgiving night, for example. Doing so merely spread out the same volume of sales for those days, and the employer adjusted accordingly.

Elsewhere, users say the UI is intuitive for store workers to put in a time off request and check their schedules on mobile devices. In comparison to seven of its biggest competitors that don't use JDA, one high-end retailer reported its rate of employee turnover was considerably lower and attributed this to the solution. This corroborates research Nucleus has recently published looking at the ROI of improving employee attrition (Nucleus Research *s56 – The ROI of reducing employee turnover*, March 2018).

A handful of WFM-only or HCM-only providers stand out as better than their peers. On the WFM side, they're well above the horizontal axis, in this report's Leader quadrant. However, any vendor that can bring deep scheduling informed by a broader view of the enterprise—namely in the omnichannel (i.e., digital marketplace)—is by design best positioned to deliver in retail. In Nucleus's estimation, that vendor is JDA.