Team Topic and Number: The Autonomous Workplace Team Number 9

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Introduction

In the world of workplace, the ongoing COVID pandemic has been a remarkable accelerant. Our current work-from-home experiment, rolled out at mass scale, has converted many of the remaining traditionalists and illuminated new possibilities for the future. Some interim changes, such as geographically distributed teams, are primed for permanence. Others, like mandated distancing protocols, may be fleeting in a post-vaccine world. Regardless, the crisis has thrown into sharp view the importance of adaptability in our workspaces.

Enter the **Autonomous Workplace** – an ecosystem focused on empowering workers through responsive control and streamlined functionality. This approach is a win-win for organizations and employees alike. Byproducts include enhanced efficiency and productivity, on behalf of the firm, as well as increased agency and satisfaction among employees. Through automation and adaptive learning, the end goals of

the autonomous workplace are to minimize disruption, champion employee wellbeing, and create lasting value.

The model consists of three equal parts: people, place, and technology, all working in concert to deliver a more resilient future. Central to the equation, the autonomous worker is able to execute tasks from a number of different settings on or off-site. In addition to meeting the functional needs of the employee, the workplace emphasizes holistic wellbeing, satisfying not just physical and mental criteria but also instilling a sense of mission and purpose. Spatially, autonomy equates to settings that evolve, learning and adapting in a fluid way that is responsive to user preferences.

The autonomous workplace is guided by data-driven decision making, improving choices over time. A robust technological infrastructure of artificial intelligence, machine learning, user experience design, and the Internet of Things (IoT) helps fuel outcomes and drives progressive evolution towards continuous optimization.

Traits of autonomous workplace

The autonomous workplace is marked by several key characteristics that when taken together help to paint a picture of a "new normal" working environment that will support and empower employees in a more comprehensive manner than the workplace of the past. These traits describe the employee experience, the processes that make-up their daily activities, as well as the design of the physical working environment.

Data Driven – Leveraging data through activities such as temperature checks and contact tracing, electronic information on employee whereabouts for monitoring the overall safety of the workforce are imperatives.

Automation - The digitizing of workflows as well as leverage for data available from devices and systems, allows for an ecosystem with fewer manual interventions and more automated business processes. Overall hygiene of the workplace will also be paramount in the new normal with concepts such as UV and infrared lighting for cleaning, non-contact cleaning, and reporting visible to occupants on sterilization. For those actions in the workplace that have traditionally been initiated by human touch, there is a new imperative requiring sensors or automation to interact.

Connectedness– With the increased focus on work from home model, the importance of connectedness among the workforce is paramount as employees leverage collaboration tools to work.

Empowerment – The increased work from home paradigm will require a new level of autonomy and agility for employees and employers as resources are being asked to deliver their work while balancing home commitments that may include childcare for a period of time.

Health & Well-Being – Given the global pandemic, autonomous workplace needs to support an increased focus on health, welfare of the workforce. This may include concepts like temperature checks, as well as a scorecard with non-visible elements of autonomous building health to understand what types of interventions are in place to make a healthier environment with KPIs such as air flow, filtration rates, etc.

Recommendations and considerations

Companies must elevate and empower cross functional strategies that include facilities, IT, HR, CSO (chief security officer) and CRE (corporate real estate), with authority and influence to execute a rigorous framework for an effective autonomous workplace. Autonomous Workplace is a journey, defined by the starting point for each company.

Policy and procedures, existing infrastructure, functional departmental planning, all need to be considered to plot an effective path forward. Each company will have their own wholly unique

constraints and objectives. We can therefore offer insights into what *could be* deployed and utilized to support Covid-19 back to work execution.

Touchless technologies for all points HID (Human Interface Devices).

Consider the need to interact with systems in the office today - the photocopier, elevator, conference room controls, as examples. Most have touch screens that have been optimized for easy navigation and data entry. Reducing these points of contact can decrease pathogen transmission. Consider supplementing these systems with the occupant's personal devices, or voice control systems.

Contact Tracing / Proximity Notification

Consider the benefit of being able to easily address notification of potential exposure to pathogen(s). In the event of a symptomatic employee, companies can quickly locate other exposed team members who are at risk. Some companies will have the ability to generate this data by re-purposing existing Wi-Fi data, others may consider deploying personal wearables sensors.

There are newer apps for traditional wearables (Smartwatches) that can provide haptic notification if two wearable devices are within 6 feet of each other - thus providing notification that distancing is needed.

Autonomous Spaces

Utilize Autonomous Workplace to support reconfigurable work zones. These zones can be automated to "set the stage" for the types of work that is needed in that specific time. Consider spaces that are ad-hoc collaboration spaces as potential "wellness zones". These areas can be supported with digital biophilic elements such as moodscaping, circadian rhythm lighting and displays that support nature visuals.

Risk Mitigation and Occupant Satisfaction with Safety/Health

Consider items and processes that can have an immediate impact to reduction of risk:

- Questionnaire for work eligibility - produces QR code for space assignment
- Fastest route while avoiding occupant contact with near real-time wayfinding
- Spatial forensics to generate insights into how spaces have been used – reports cleaning complete
- Occupant notification and communication – custom app deployment for consistent near real time communication with occupants
- Health tracking, monitoring and visible insightful dashboards to support occupant communication

Policy and Moral Imperative

Despite the inarguable gains afforded by data-driven spaces and design, inevitable trade-offs exist longer-term. As technology continues to advance, the empowerment it affords must be weighed against the risk of worker obsolescence and dehumanization. Ironically, a continually redefined workplace may ultimately lose its core sense of place, and as a downstream consequence, purpose of functionality. Can the autonomous workplace provide for mass customization – affording everyone targeted space and resources suited to everyone's tasks – while also remaining a destination for community and shared growth?

The elephant in the room is, of course, data privacy. For the workplace to be highly responsive to users, it must have access to occupant tastes, preferences, location, health, etc. By surrendering this information, however, we yield our right to privacy. Where is the tipping point? Would employees voluntarily wear a data gathering device, to enjoy an office that responded to changing biometrics, for instance?

Another concern associated with extreme data harvesting and artificial intelligence is the removal of the human element. Were the autonomous workplace to evolve to a point of pure automation and robotic control, the human occupant would be disenfranchised.

Autonomous workplace – thinking beyond the now

While we look to focus on creating autonomous workplaces in the CRE industry due to the potential impacts of the current pandemic and how occupiers' space expectations may change due to the new behavior(s) of their workforce, there is another paradox that began before the pandemic and will continue to accelerate at a faster rate that needs to be considered in space decision making by occupiers, the digital workforce.

Robotic Process Automation (RPA), referring to software robotics that emulate actions of humans as they interact within digital systems to execute desktop business processes, was already predicted to replace 1 million knowledge-work jobs in the US 2020. Given the current environment, RPA implementation will be accelerated as companies look to business continuity options.

Systems used to enable autonomous workplace to support our back to work efforts, can have useful value well into the future. Consider the data generated by these systems and the ability this data has to inform future process automation, perhaps in ways we have yet to consider. Intelligent Automation is the function of planning a set of rules to control systems in a way that appears as if the workplace is anticipating your current needs.

Closing

Acceleration of the data-driven, human-centric autonomous workplace has intersected with the seminal moment of COVID-19 to project work environments into an unknown future state. While we offer insights into possibilities to support Covid-19 back to work execution, it can be said with confidence that the next normal will include many new processes that make-up daily activity and an altered physical environment. Stakeholders will execute a rigorous framework to achieve the Autonomous workplace, the characteristics of which have been outlined in our team's approach. Now more than ever our workplace must deliver on mission and purpose, and central to that is a concert of connection; the key to autonomy.