Deloitte.

Accelerating the Future of Work

Future of Work Roadmap

How to use this document

The **purpose** of this document is to**:**

Provide a **comprehensive regional Future of Work Strategy** for the Greater Wichita region, which includes the stakeholder-aligned **Future of Work Ambition**, **Strategic Pillars**, and **a Collaborative Strategic Roadmap** that is comprised of the **Prioritized Commitments** that will accelerate progress towards realizing the regional ambition.

This document also outlines the key next steps to refine and activate the **prioritized commitments** outlined in this document.

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Executive Summary | Section I

The opportunity

Over the last 3 years, the Greater Wichita region **experienced several events or disruptors** that have had a significant impact on its workforce and **highlighted the need for the region to understand and prepare for the Future of Work**.

Key stakeholders across the **Greater Wichita Community** sought to establish a **holistic** and **action-oriented Future of Work Strategy** – that would position the region to **compete for, retain, and develop top talent in innovative ways**.

By broadening perspectives and generating a deeper conversation around the **future talent landscape**, stakeholders aim to foster collaboration among **business**, **education**, and **community leaders** in the Greater Wichita region to **unleash untapped value** within the region's workforce.

- **Defining** the universal ambition and strategic direction for the Future of Work in the Greater Wichita Region
- **Reframing** the conversation beyond just skills and looking at the broader implications of the work, workforce, and workplace for creating, attracting, and retaining the top talent of the future
- **Accelerating** action by identifying gaps and creating a roadmap of prioritized initiatives to cultivate the workforce of the future

Several disruptors have emerged, impacting the Future of Work...

KEY DISRUPTORS

- EMERGING TECHNOLOGIES
- COVID-19 PANDEMIC
- NEW TALENT REQUIRMENTS
- SUPPLY CHAIN DISRUPTIONS
- DIVERSITY AND GENERATIONAL CHANGES
- AUTOMATION AND ROBOTICS

These disruptors have led to **several trends** that need to be taken into consideration when **examining the needs of the current and future workforce**

- **Increased desire for the future workforce to develop new skills**
- **Recent decline of interest for popular industries or career paths found in the region**
- **Inability to offer market salaries in comparison to competitors**
- **Hiring difficulty across multiple industries**
- **Large numbers of talent migration and relocation**

A paradigm shift is necessary to enable the Future of Work

To enable the Future of Work in Wichita, we must understand the levers that affect its three key components – work, workforce, and workplace – and how education, business, and community stakeholders can collaborate to prepare Wichita to excel in the Future of Work

What is being done?

WORK

The experience and value of work performed by humans and technology

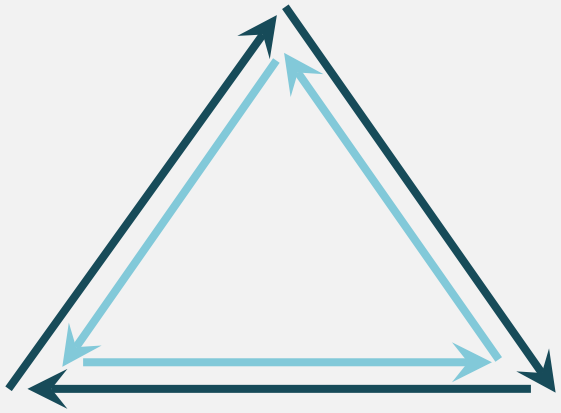
Value of Work | Outcomes of Work | Tasks/Process | Technology

Who is doing the work?

WORKFORCE

The composition of jobs, skills, and workers to deliver business value

Skills | Human Capabilities | Talent Options | Jobs



Where is the work being done?

WORKPLACE

The context and environment in which work is done including physical design and technologies, collaboration, culture, and workforce preferences

Geographic Location | Physical Design | Culture | Collaboration

Our journey to reimagining the Future of Work in Wichita

In early November, The Greater Wichita Partnership partnered with Deloitte to evaluate the region's current approach to preparing for the Future of Work and establish a regional Future of Work Ambition and Strategy that enables the attraction, development and retention of skilled talent across industries

WHAT

LISTEN

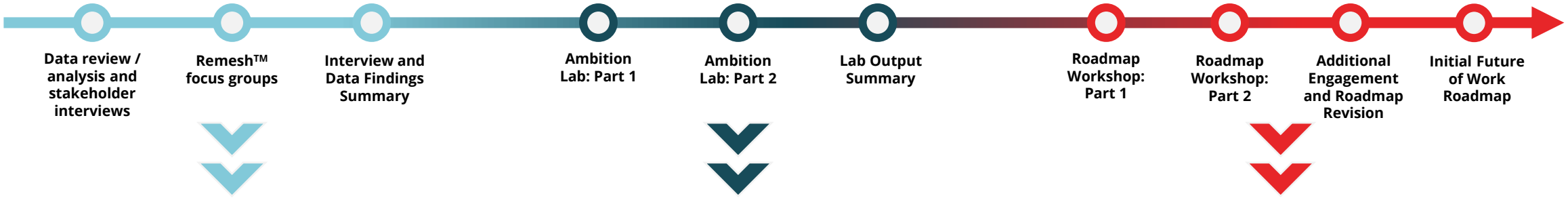
Generate a rich framing of business and community needs and preferences as foundational input for the Future of Work Strategy

IMAGINE

Engage key Greater Wichita Partnership stakeholders to expand thinking and create alignment

ACTIVATE

Identify in-flight or planned initiatives that address the Strategic Ambition and identify immediate actions to mobilize the strategy



WHY

*To capture **human and experience-centric feedback** from the Greater Wichita Region as critical starting input for strategy building*

*To engage key stakeholders in **active learning and collaboration** through **Deloitte's tested lab-based** approach to expand thinking and create alignment on the opportunity set*

*To gain **alignment on Future of Work Strategic Ambition and Roadmap**, including considerations for short-term mobilization and engagement*

Key themes were highlighted through our activities...

Deloitte reviewed existing data / studies, conducted stakeholder interviews and RemeshTM focus groups to identify the below bright spots and opportunity areas for FOW in the Greater Wichita region. The ambition, strategic pillars, and commitments outlined in the roadmap are derived from this assessment

BRIGHT SPOTS

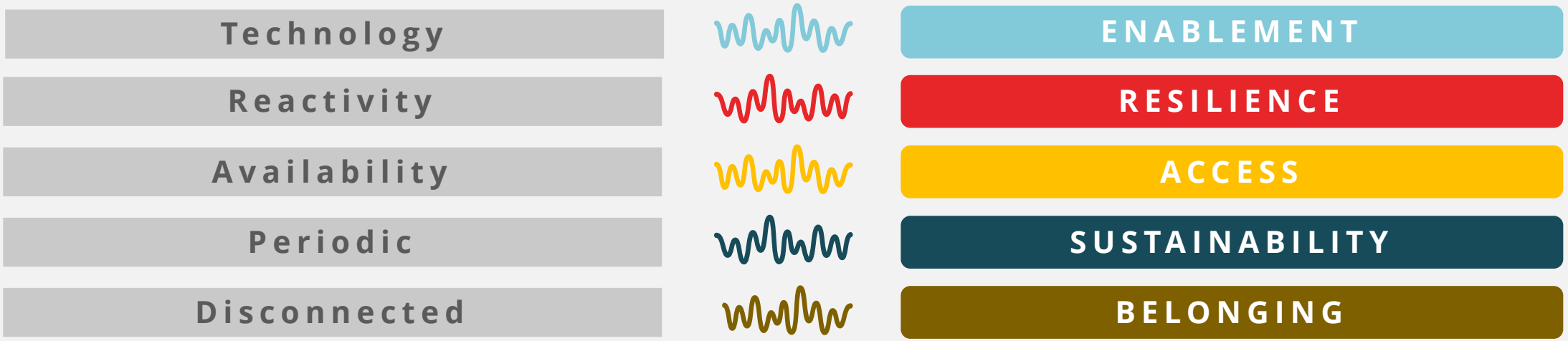
- ***Automation as an enabler, not eliminator of jobs***
- ***Flexibility & work / life balance as a priority***
- ***Wide selection of education & training opportunities available***
- ***Strong family ties & low cost of living***
- ***Positive reception of the efforts of dedicated community partners***

OPPORTUNITY AREAS

- ***Increasing awareness & accessibility of professional opportunities***
- ***Providing more competitive pay***
- ***Establishing diversity, equity & inclusion (DEI) as an imperative***
- ***Diversifying options for entertainment venues & cultural activities***
- ***Building further resilience into Wichita's industrial landscape***
- ***Sustaining workforce of the future through investment in diverse career pathways***

As we differentiate the journey ahead, efforts will need to evolve beyond what's been done to date...

*The Greater Wichita region has invested significant time and effort to **understand opportunities and barriers to attracting and retaining talent**. To amplify the region's ability to enable the Future of Work, build the workforce of the future, and compete for top talent, it is **imperative to build on that foundation** and **think differently** given the current moment of opportunity*



*In order to **prepare The Greater Wichita region's workforce** for skills and jobs of the future, it will be imperative for key stakeholders in the region to enable the greater **ecosystem that will support integration of education, business, community priorities** to accelerate progress*

The Future of Work Strategy for The Greater Wichita Region | Section II

Future of Work Ambition Statement

After reviewing the key concepts found throughout data findings during the two-day Ambition labs, participants were able to refine and create the ambition statement below, which will serve as a long-term, aspirational anchor for Wichita's Future of Work strategy and goals

Understand the nuanced needs within our community and invest in areas that drive access and inclusion to achieve our goal of belonging for all

Create diverse career pathways and opportunities within our community by providing the tools needed to fuel innovative thinking, solutions, and collaboration

We are a vibrant, global community of possibility that invests boldly, takes risks, and defies expectations

Empower our community with the resources it needs to think beyond what is "safe" through employer commitment, hard dollar investment, and leadership buy-in

Move beyond our culture of comfort to allow our community to take risks and try new things that will drive progress for our region

Build upon our history of innovation to challenge the status quo and establish Wichita has a hub for skilled talent and ground-breaking innovation

CULTIVATING A VIBRANT, GLOBAL COMMUNITY + CREATING POSSIBILITIES + INVESTING BOLDLY + INCREASING APPETITE FOR RISK = DEFYING EXPECTATIONS

THE GREATER WICHITA REGION'S FUTURE OF WORK COMMITMENTS

CULTIVATING, A VIBRANT GLOBAL COMMUNITY	CREATING POSSIBILITIES	INVESTING BOLDLY	INCREASING APPETITE FOR RISK
VG1: FOCUSED COMMITMENT Form a coalition that regularly connects public, private, and community stakeholders **to drive inclusion** by bringing diverse voices to the table with the goal of **identifying and addressing the priorities, needs, and barriers faced by various populations across the region** WORKFORCE	**CP1: FOCUSED COMMITMENT** Establish formalized, tightly integrated feedback loop between business and education stakeholders on skills demand/supply **to enable agile and responsive workforce planning** WORKFORCE	**IB1: FOCUSED COMMITMENT** Invest in embedding future-forward skills (e.g., coding, technology, data analytics, etc.) through industry-serving, university-based innovation centers **to enable talent to take on the jobs of the future** WORKPLACE	**AR1:** ENABLING COMMITMENT Support the establishment of incubators that advance new technology development to **establish Wichita as a hub for innovation** WORK
VG2: FOUNDATIONAL COMMITMENT Activate gathering spots around the region with new activities and celebrations **that draw and engage diverse and multicultural audiences** WORKPLACE	**CP2: FOCUSED COMMITMENT** Develop strategic model for engagement with private employers to incentivize **creation of professional development and training pathways that connect talent to employers in creative ways** WORK	**IB2:** FOUNDATIONAL COMMITMENT Create sustainable funding mechanisms to **drive long-term investment and ridership in public transit and next-generation transportation solutions** (e.g., employer-sponsored shuttles to and from workplace, childcare centers) **that will expand access to opportunities for talent in the region** WORKPLACE	**AR2:** ENABLING COMMITMENT Implement a highly focused, relationship-based campaign to **encourage venture capital investment in the state's target sectors** WORK
VG3: ENABLING COMMITMENT Expand air and rail connectivity to Wichita domestically and internationally to enable ease of access for future talent and business WORKPLACE	**CP3**: FOUNDATIONAL COMMITMENT Expand access to employment opportunities by **increasing supporting services for underserved communities in Wichita** WORKFORCE	**IB3:** FOUNDATIONAL COMMITMENT Invest in developing compelling places (i.e., Riverfront Legacy Master Plan, project Downtown, Main Street Revitalization) across diverse areas of the city **to highlight the rich history and diversity of Wichita and attract talent to the region** WORK	**AR3:** ENABLING COMMITMENT Challenge the status quo on on public investment priorities with cost/benefit analyses that include **lost opportunity cost and benefits manifested multi-generationally**, and could measure success in new ways (e.g., $$ available/appropriated, speed to access of investment $$, # and types of investors) WORKPLACE
VG4: ENABLING COMMITMENT Accelerating existing **internal and external marketing campaigns** that embraces Wichita's history and **generate buzz around new vision for the region** WORKPLACE			

Unpacking the Future of Work Roadmap

Stakeholders from across the region aligned on a set of commitments that they believe will drive the most impact in helping the region achieve its Future of Work Ambition. Through continued efforts 4 commitments rose to the top as needing immediate focus, while the commitments serve to lay the foundation and enable continued success

FOCUSED COMMITMENTS

The immediate priority areas that will bring together a diverse set of stakeholders to drive buy-in and engagement across the region

FOUNDATIONAL COMMITMENTS

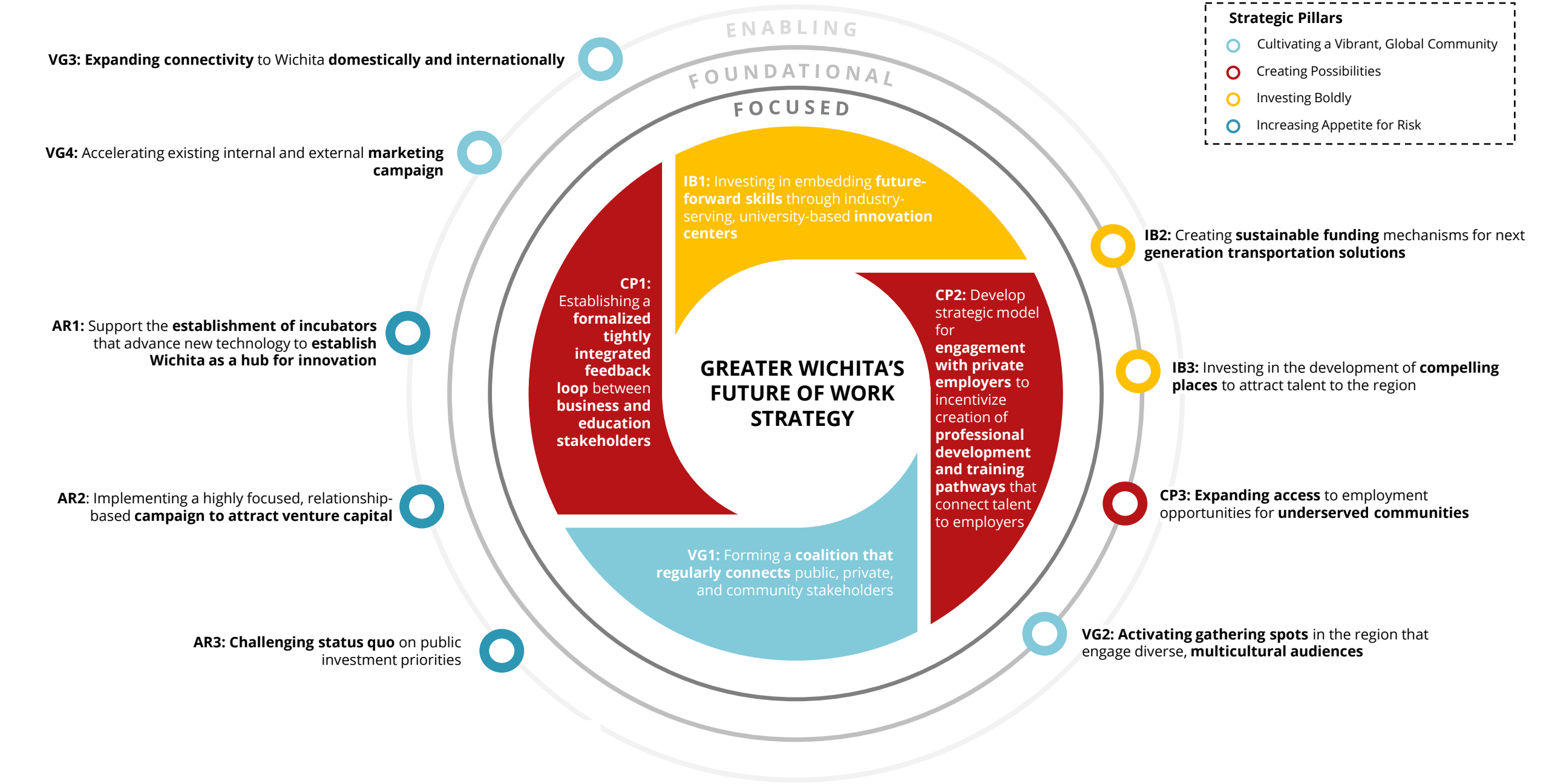
The commitments that will establish the infrastructure needed to address barriers faced by the current and future workforce

ENABLING COMMITMENTS

The commitments that will drive the region to defy expectations and deliver on their more ambitious goals

The Future of Work Roadmap depicts the ecosystem of commitments needed to drive success for the region – with the **focused** commitments in the center, and the **foundational** and **enabling** commitments surrounding them to show the interconnected nature of the efforts

THE GREATER WICHITA REGION'S FUTURE OF WORK ROADMAP: ECOSYSTEM OF COMMITMENTS



VG3: Expanding connectivity to Wichita **domestically and internationally**

VG4: Accelerating existing internal and external **marketing campaign**

AR1: Support the **establishment of incubators** that advance new technology to **establish Wichita as a hub for innovation**

AR2: Implementing a highly focused, relationship-based **campaign to attract venture capital**

AR3: Challenging status quo on public investment priorities

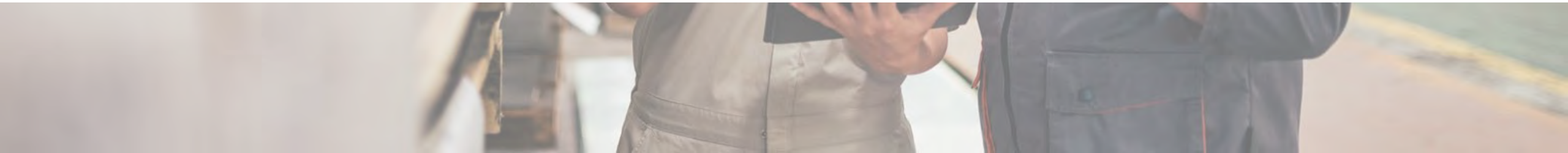
IB2: Creating **sustainable funding** mechanisms for next **generation transportation solutions**

IB3: Investing in the development of **compelling places** to attract talent to the region

CP3: Expanding access to employment opportunities for **underserved communities**

VG2: Activating gathering spots in the region that engage diverse, **multicultural audiences**

Activating the Future of Work: Commitments Deep Dive | Section III



Overview of components and considerations

Outlined below is an overview of elements included in the Commitment Deep Dives, as well as key considerations for the Greater Wichita region as progress continues towards achieving their Future of Work Ambition Strategy

Components of Commitment Deep Dives

Impact:
- The anticipated benefits of implementing the commitment

Stakeholders (Commitment Owners & Partners):
- **Owners:** Experienced individuals selected to be accountable to drive progress towards tactical actions associated with each commitment
- **Partners:** Individuals that Owners should engage as collaborators to help develop tactical actions for each commitment

In-Flight Initiatives:
- Existing efforts or plans that may require alignment or integration with the commitment

Illustrative Examples:
- Examples of programs/solutions that other regions have implemented associated with the commitment *(as applicable)*

Key Steps:
- A high-level outline of the actions that need to be taken in order to implement the commitment

Level of Effort, Impact, and Urgency:
- Indicators to aid in prioritizing the commitments taking into consideration, the level of effort needed to implement the commitment, the resulting effects on the region from implementation and the level of importance to implement commitment based on the current and future needs of the region

Key Considerations

Need for ongoing, collaborative refinement

The Roadmap is meant to function as a living document, and commitments outlined to serve as preliminary initiatives that will need continued refinement into tactical plans for implementation by commitment Owners

Prioritization of foundational, enabling and focused commitments

The Roadmap outlined does not follow a linear timeline structure. The outline identifies **four commitments that serve as the foundation** to establish the infrastructure needed to face current and future workforce barriers**, five commitments that serve as enablers** driving acceleration to defy expectations and achieve ambitious goals and **4 focused commitments that serve as high-priority initiatives** that are key for stakeholders to focus on in the near term.

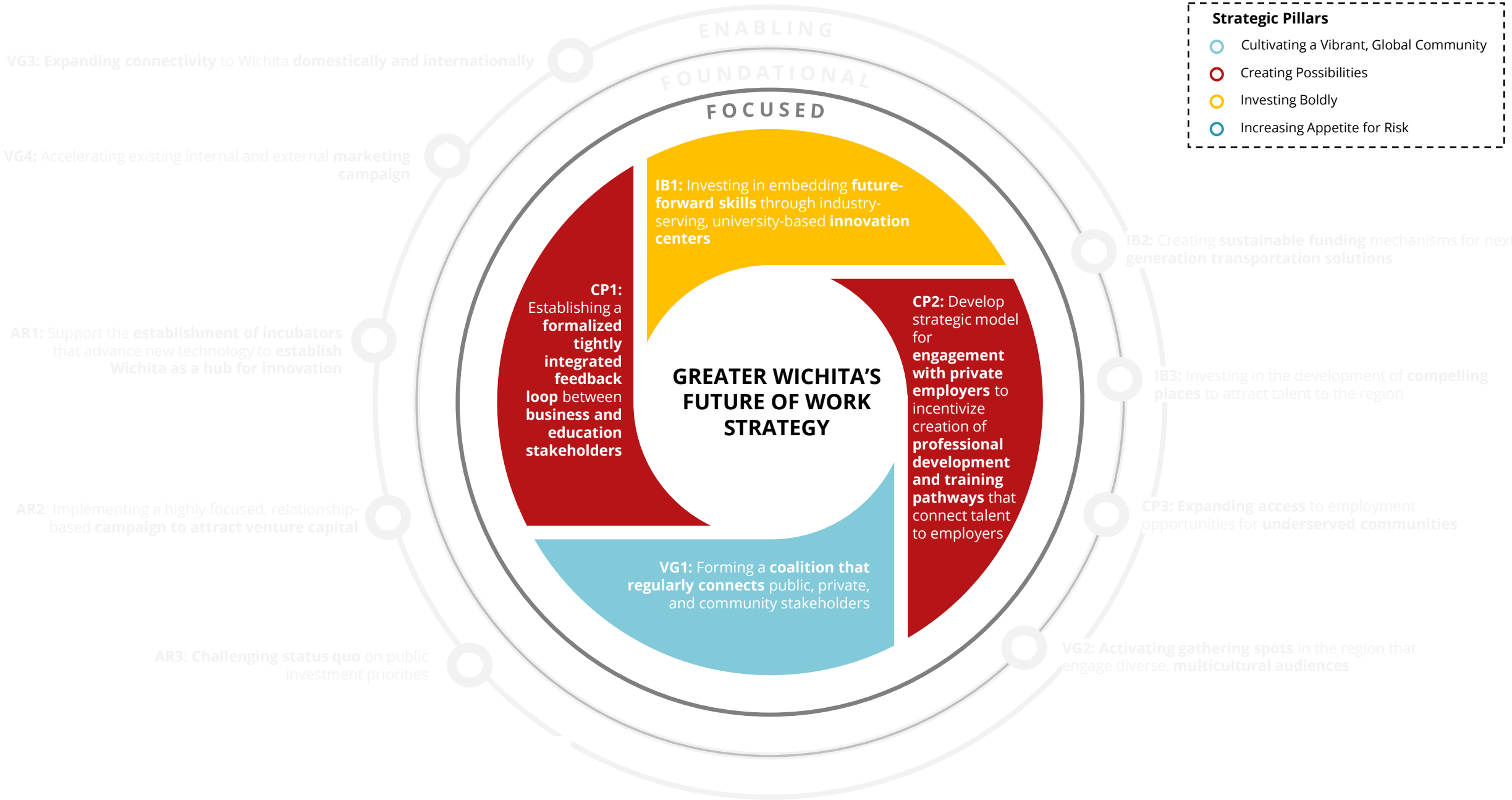
Stakeholder buy-in as key to sustained change

Strong socialization efforts from Owners, Partners and key stakeholders will be critical in gaining alignment and support for implementation of commitments from stakeholders across business, education, and community sectors

Chapter I: Focused Commitments

FOCUSED COMMITMENTS:

The immediate priority areas that will bring together a diverse set of stakeholders to drive buy-in and engagement across the region



Strategic Pillars

- Cultivating a Vibrant, Global Community
- Creating Possibilities
- Investing Boldly
- Increasing Appetite for Risk

WORKFORCE

VG1: *Form a coalition that regularly connects public, private, and community stakeholders* ***to drive inclusion*** *by bringing diverse voices to the table with the goal of* ***identifying and addressing the priorities, needs, and barriers faced by various populations across the region***

KEY CONSIDERATIONS

IMPACT

1. Identification of nuanced priorities, needs and barriers faced by populations in the Greater Wichita region
2. Formulation of targeted integrated strategies that address the nuanced needs of various populations

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from public, private, community, education sectors and unions

IN-FLIGHT INITIATIVES

Project Wichita: Establish a task force of diverse voices to develop a community-driven assessment toolkit and engage communities on it's use

Framework for Growth: Regularly convene stakeholders from target sectors and economic regions to evaluate state regulations and policies, and their impact on our economic regions and target sectors

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Determine the scope, responsibilities, time commitment and resources needed for the coalition to be successful
2. Identify and nominate potential coalition members from the public, private and community sectors
3. Gain nominated members' buy-in for participation and invite them to attend a kick-off meeting
4. Conduct kick-off meeting to provide clarity on roles and responsibilities, network and resources available
5. Launch and socialize the newly formed coalition to stakeholders across the region
6. *Ongoing:* Hold regular coalition network meetings to answer questions, provide direction, and seek feedback for improvements as applicable

What we heard from the Ambition Labs and Roadmap Workshops:

- There is a need to put measures in place to understand the barriers faced across various populations in order to unlock access to programs / opportunities across industries
- There is a need for an integrated approach when planning efforts that impact multiple sectors and the Future of Work for the Greater Wichita region

Level of Effort

Level of Impact

Level of Urgency

Coalition roles and responsibilities

Comprised of representatives from across the Wichita region, the Future of Work Coalition will serve as the "boots on the ground" tactically driving the Greater Wichita region's Future of Work Ambition Strategy

COALITION ROLE

The Future of Work Coalition is an established connection between public, private, and community stakeholders **to drive inclusion** by bringing diverse voices to the table with the goal of **identifying and addressing the priorities, needs, and barriers faced by various populations across the Greater Wichita region**

COALITION RESPONSIBILITIES

- Understand the Strategic Pillars of the Greater Wichita region's Future of Work Ambition Strategy
- Demonstrate inclusivity by seeking and leveraging perspectives from stakeholders across the varying sectors to understand the barriers and needs faced across the region and inform priorities
- Drive effective and efficient planning strategies including, potentially unifying areas where duplication of efforts may be present
- Champion and socialize region-wide commitments to drive stakeholder buy-in and address any questions and concerns stakeholders may have
- Enhance collaboration with diverse stakeholders across the region to expand resources and strengthen the Coalitions network
- Continuously identify and solicit feedback from diverse stakeholders and implement updates as applicable

Coalition impact and outcomes

The Future Of Work Coalition will act in service of the ambition and strategy of The Greater Wichita region's Future of Work Ambition Strategy by:

CASCADING THE STRATEGY

Coalition members will be responsible for envisioning, planning, and executing tactical initiatives to help drive the Ambition strategy

ESTABLISHING FEEDBACK LOOPS

Coalition members will serve as the "ears on the ground" for the Greater Wichita Region by routinely collecting feedback on initiatives /programs launched in the community and proactively addressing gaps and needs shared by stakeholders

GAINING BUY-IN

Coalition members will be looked upon to champion the initiatives driven by the Future of Work Ambition Strategy and serve as ambassadors to engage and encourage stakeholders across the region to do the same

Membership selection criteria

Coalition members should be individuals whose qualities will enable them to tactically drive the Greater Wichita region's Future of Work Ambition strategy, embody inclusive behaviors, and are representative of the community, public, private, education sectors and unions across the region

LEADERSHIP

- **Highly motivated** and able to motivate others
- An **active listener** with attention to detail
- Strongly **connected to an informal network** of peers and able to influence them
- Embodies **values** of **inclusion** and **equity** and **foster belonging** among coalition members
- Willing to **understand, learn, and communicate** changes

COMMUNITY TRUST

- Strongly **connected to diverse communities**, together forming a **representative group** from the region
- Able to **solicit honest input and feedback** from community members and **represent concerns to coalition**
- Serve as a **trusted ambassador of the Coalition's efforts** within their communities
- Willing to **push back against the status quo** where **necessary** and **productive**

SUBJECT MATTER EXPERTISE

- Act as a **knowledgeable and approachable resource** for coalition members
- Able to operationalize initiatives and feedback relevant to their area of expertise
- Willing to **learn from other experts** in coalition and **think across disciplines** to **maximize impact**
- **Connects** their **area of expertise** to specific **strategic pillars** and/or **focus areas**

STAKEHOLDERS COULD INCLUDE…

Education leaders (public and private)	*Elected officials*	*Small business owners and entrepreneurs*	*Worker and union representatives*
Students	*Public sector leaders and workers*	*Industry and business leaders*	*Nonprofit and community-based organizations*

Establishing the Future Of Work Coalition

A structured approach is going to be necessary for nominating and selecting members to serve in the Coalition and providing initial direction and expectations for execution

1. OUTLINE

Develop **scope and responsibilities, time commitment, and the resources needed** for the Future of Work Coalition to be successful

2. NOMINATE

Recognize and nominate potential coalition members from public, private, community sectors and unions that also embody the qualities and criteria outlined for Coalition members

3. COMPILE

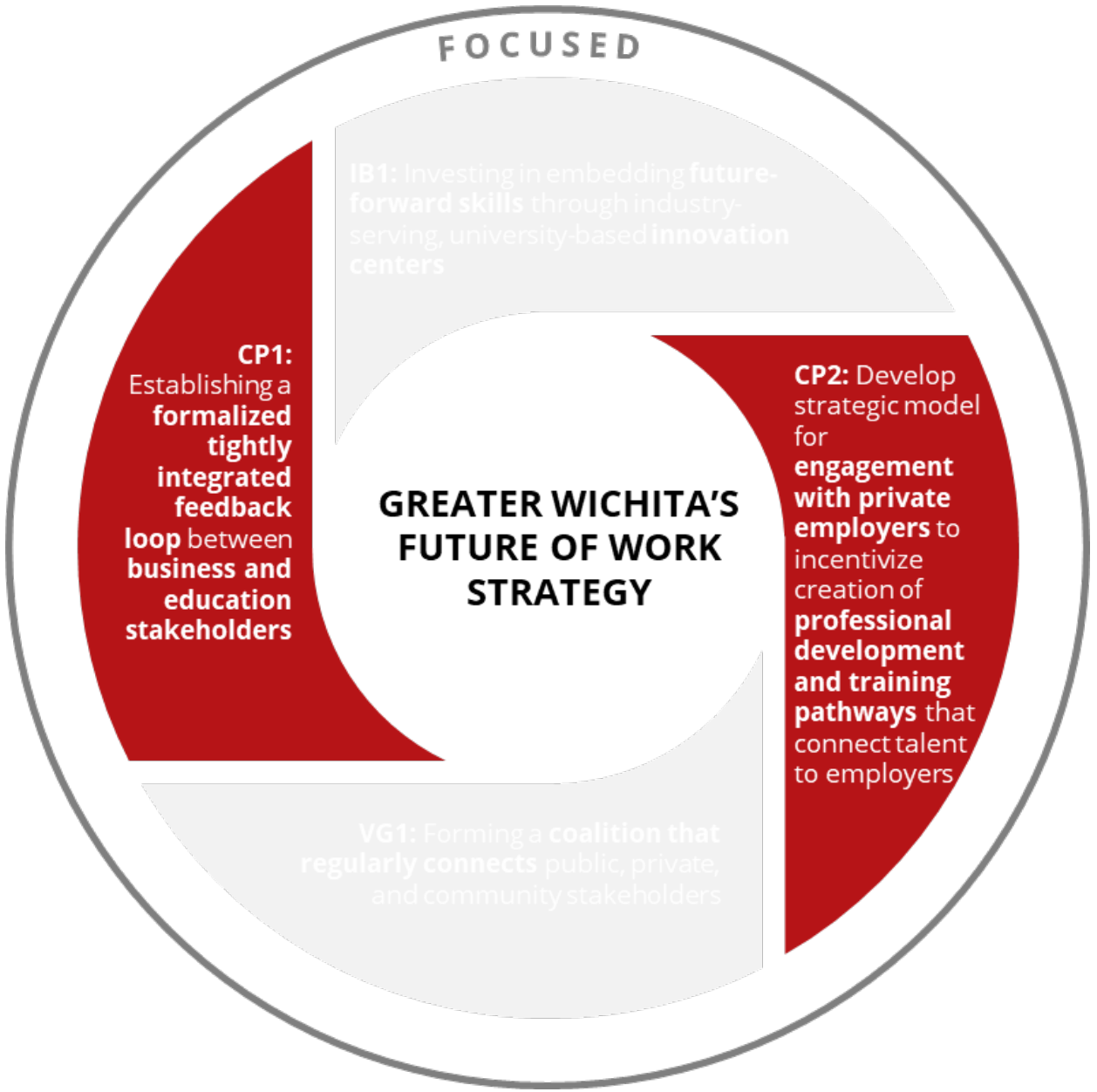
Gain nominated member's buy-in for participation and invite them to attend a kick-off meeting

4. LAUNCH

Launch the Future of Work Coalition by holding a kick-off meeting to:

- Highlight the **purpose** and **mission** of the Coalition
- Outline the **role** and **expectations** of Coalition members
- Discuss the **priorities** that the Coalition will drive forward
- Provide **resources** that Coalition members can leverage

ACTIVATING CP1 AND CP2



Strategic Pillars

- Cultivating a Vibrant, Global Community
- Creating Possibilities
- Investing Boldly
- Increasing Appetite for Risk

CP1: *Establish formalized, tightly integrated feedback loop between business and education stakeholders on skills demand/supply* ***to enable agile and responsive workforce planning***

KEY CONSIDERATIONS

IMPACT

1. Targeted strategies to address the skills gap for in-demand jobs and strengthen graduates' retention to local target sectors
2. Gained alignment on the vision, resources and efforts for workforce planning across multiple sectors

STAKEHOLDERS

Initiative Owner:
- BEA

Initiative Partners:
- Representatives from business sectors, education sectors and unions

IN-FLIGHT INITIATIVES

Project Wichita: Develop strategic model for partnership between private industry, community organizations, and regional schools' structure to support student success.

Framework for Growth: Establish a partnership to modernize state approaches to workforce development; create synergy between education and economic systems.

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Identify and connect industry (e.g., business leaders and union leaders) and education stakeholders across the region to work closely together to discuss the skills gaps being faced by organization in Wichita
2. Develop a targeted plan to leverage existing workforce planning / education structures to drive the development of those skills within the Greater Wichita region's available talent pool
3. *Ongoing:* Hold regular partnership network meetings to update on any changes to the needed skills based on market or strategic business decisions, answer questions, provide direction, and seek feedback for improvements as applicable

What we heard from the Ambition Labs and Roadmap Workshops:

- Wichita leaders expressed the need to have educational curriculum that is inclusive and responsive to the current skills and credential demands of the current and future workforce
- There is a desire to establish a partnership between the public and private sectors to set workforce expectations for the community as a whole

Level of Effort

Low High

Level of Impact

Low High

Level of Urgency

Low High

CP2: *Develop strategic model for engagement with private employers to incentivize* ***creation of professional development and training pathways that connect talent to employers in creative ways***

KEY CONSIDERATIONS

IMPACT

1. An enhanced workforce with opportunities to grow in the workplace through established career pathways and career retention efforts
2. A bridge to the current skills gap and ability to attract and retain top talent across the region

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community, education and private sectors

IN-FLIGHT INITIATIVES

Framework for Growth: Work with private employers to establish a self-sustained resource for training and workforce development through interest-free loans for education and training.

Framework for Growth: Strengthen Registered Apprenticeship program through coordinated investments that incentivize employer engagement…and promote equity in access and acceleration of apprentices

ILLUSTRATIVE EXAMPLES

Virginia's Workforce Development Efforts Link:
- Talent Accelerator is a turnkey solution for customized recruitment, screening, and training in which, services are provided at no cost to qualifying new or expanding employers
- Virginia Jobs Investment Program offers consultative services and funding to companies that create new jobs or experiencing technological change

KEY STEPS

1. Identify and engage private employers from target industries across the region to understand successful programs already in-flight and align on areas of need to help identify gaps
2. Based on input, work with education and business leaders across the region to develop a strategic plan to establish and/or expand existing professional development and recruitment program efforts
3. Connect with community leaders to pressure-test resulting programs to further inform methods for accessibility and inclusivity
4. Utilizing input, update program plans, launch and socialize programs across the region
5. *Ongoing:* Seek feedback and make necessary improvements, continuously assess the level of engagement/retention of employees utilizing programs, and private employers' feedback on outcomes

What we heard from the Ambition Labs and Roadmap Workshops:

- Wichita leaders seek to engage private employers to improve career advancement and pathway opportunities to promote long-term growth
- There is a desire for employers to develop more non-traditional ways of attracting talent such as, apprenticeships, pay to train programs, and work-based learning initiatives

Level of Effort

Low High

Level of Impact

Low High

Level of Urgency

Low High

BUSINESS AND EDUCATION FEEDBACK LOOP

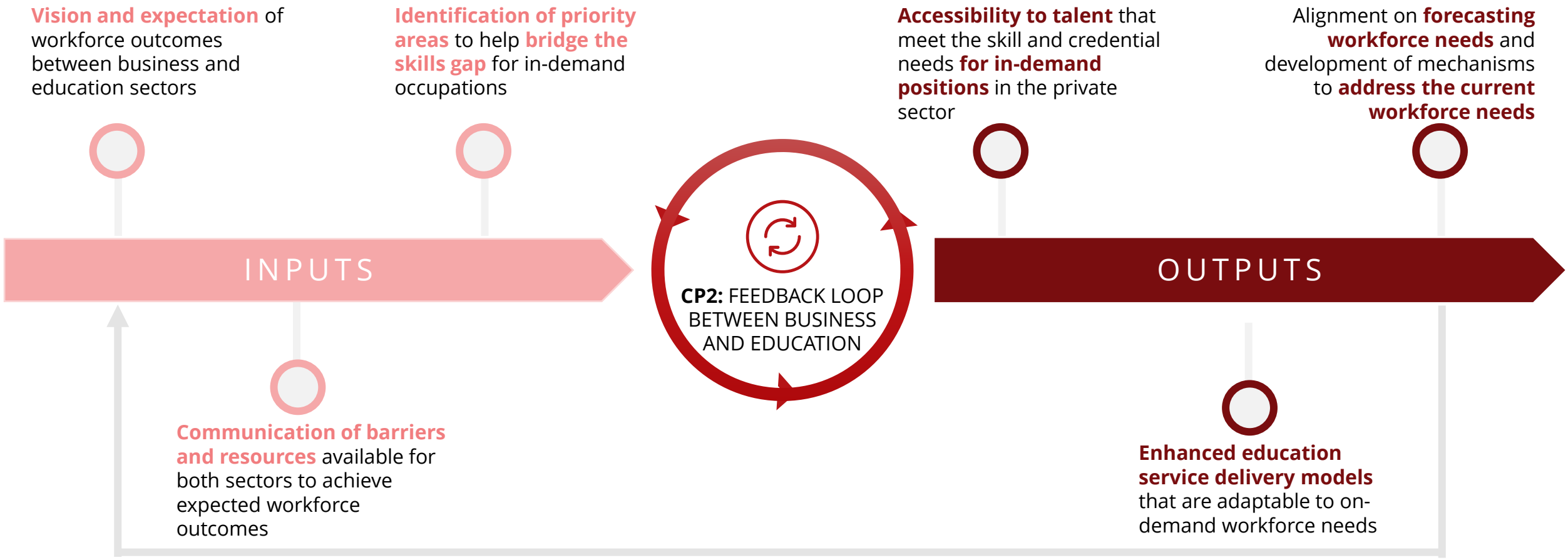
In order to prepare the Greater Wichita region's workforce to meet the evolving needs of the business sector, it is necessary to ensure strategic alignment between the business sector and the education / workforce planning sector.

The Integrated Feedback Loop **will enable**:

- Increased awareness of key business / industry strategies that will impact the skills and capabilities needs of the workforce
- The ability to develop targeted and aligned strategies to upskill the region's workforce to meet the evolving workforce demands
- Drive progress towards enhancing the current infrastructure for talent development across the region

Inputs and outputs of established feedback loop

As representatives from the education and business sectors work together to provide their input on priority areas and challenges, their output will help to drive progress towards achieving success in addressing workforce needs



To successfully address the workforce needs aligned on by employers, educators and union representatives, stakeholders should also prioritize implementing ***CP3: Develop strategic model for engagement with private employers to incentivize creation of professional development and training pathways that connect talent to employers***

Overview of established feedback loop

REPRESENTATION CONSIDERATIONS

The representatives selected from each of these sectors below will own collecting and initiating on workforce development feedback:

STATE BOARD & ELECTED OFFICIALS:

- ✓ Individuals from the Kansas State Board of Education and State Legislators in positions to influence strategic direction of local school districts

EDUCATION:

- ✓ Individuals from the Public and Private sector in positions to influence curriculum changes
- ✓ Individuals from the Public and Private sector in positions to enhance program development

BUSINESS:

- ✓ Individuals from the business sector in various elevated positions with awareness of the strategic direction of talent requirements
- ✓ Individuals from the business section with the knowledge, skills and capabilities to drive workforce strategies forward
- ✓ Individuals from unions across the region to help drive inclusive strategies

MEETING CADENCE AND EXPECTATIONS

The representatives should align on the cadence and expectations outlined below to drive progress towards workforce development goals:

MEETING CADENCE:

- ✓ Quarterly touchpoints to address high priority actions and implementation steps
- ✓ Self- scheduled touchpoints to share updates and engage additional stakeholders when necessary

EXPECTATIONS:

- ✓ Develop strategic alignment on priorities to address workforce gaps
- ✓ Develop stable mechanisms to collect and address consistent feedback from stakeholders on an ongoing basis
- ✓ Forecasting and addressing talent needs

Illustrative example | Implementation of new technology

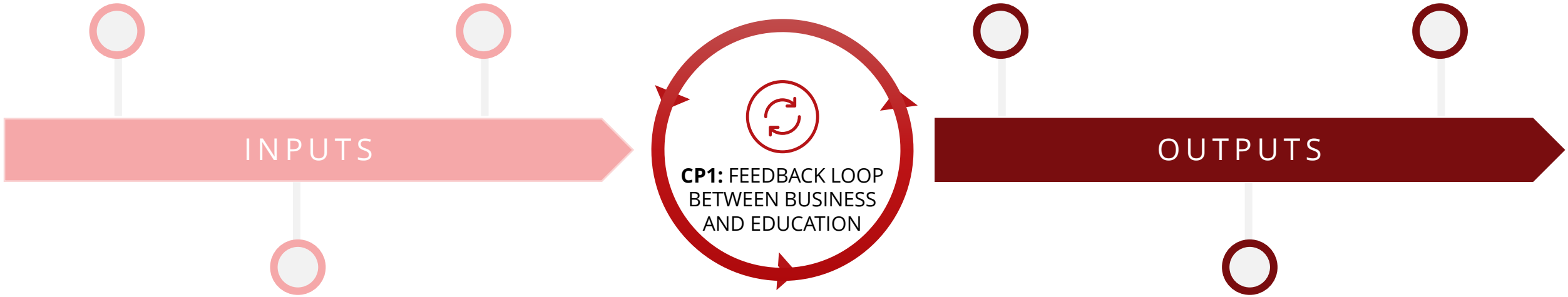
Situation: *During a quarterly update meeting a representative from the manufacturing sector has announced that their organization is planning to implement a new technology solution*

1. A manufacturing organization will be undergoing a large-scale technology solution that will be going live in 6 months. This will result in the creation of approximately 200 jobs

3. As a group, they identify whether these skills may also be needed across other organizations / industries, as well as the skill development methods that will need to be deployed

4. As a group, they identify current educational and workforce development programs that can be leveraged, as well as any associated gaps that may have to be addressed

6. Once aligned, the education and workforce leaders / stakeholders will partner to develop a strategic plan and curriculum to prepare talent to meet the emerging need



2. The associated skills / capabilities that will be needed for these jobs are outlined and discussed with the group

5. Based on input, the group can discuss the timeline for development that will be deployed to meet the workforce need and identify ways to assess levels of engagement and outcomes of programs

Strategic Pillars

- Cultivating a Vibrant, Global Community
- Creating Possibilities
- Investing Boldly
- Increasing Appetite for Risk

WORK

IB1: *Invest in embedding future-forward skills (e.g., coding, technology, data analytics, etc.) through industry-serving, university-based innovation centers* ***to enable talent to take on the jobs of the future***

KEY CONSIDERATIONS

IMPACT

1. Improved understanding of and alignment on market landscape for future-forward skills among education and industry stakeholders
2. Workforce with measurable increased/improved skills in defined skill areas and ability to achieve employment in jobs that leverage those capabilities

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from education, business and public sector

IN-FLIGHT INITIATIVES

Project Wichita: Develop strategic model for partnership between private industry, community organizations, and regional schools to support student success.

Framework for Growth: Invest in industry-serving, university innovation centers to develop cutting-edge technology using advanced competencies such as AI, data analytics, robotics, and automation.

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Connect industry and education stakeholders across the region to align on industry needs and on sill profiles that will enable the future of work in the Greater Wichita region
2. Identify key leaders from the business, community and education sectors and gain their buy-in to form a strategic partnership, charged with developing and implementing a plan to stand up innovation center(s) and plans for future expansion
3. Generate buy-in among funders and roll out launch plan for innovation center(s), maintaining close pipeline with local employers
4. *Ongoing:* Hold regular partner network meetings to answer questions, provide direction, and seek feedback for improvements as applicable

What we heard from the Ambition Labs and Roadmap Workshops:

- There is a need to provide training opportunities that cater to jobs and work of the future, and provide access to those who aren't already employed
- There is an opportunity to leverage the strong industry relationships within Wichita and the institutional resources that exist in the community to propel new efforts forward

Level of Effort

Level of Impact

Level of Urgency

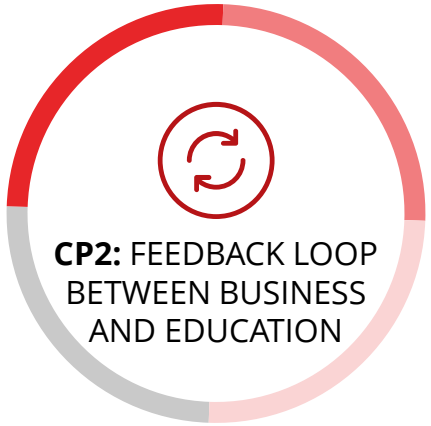
The jobs and skills of the future will need to be in sync with strategic business priorities of employers in the Greater Wichita region

1. BUSINESS STRATEGY

Industry leaders align on their near-and long-term organizational strategic priorities and their workforce needs in the future

2. ROLE/CAPABILITY DEFINITION

Industry leaders define the job and skill profiles needed for their future workforce and communicate these profiles to education leaders



3. CURRICULUM/PROGRAM DESIGN

Education and workforce leaders design curricula and professional development programs to address near- and long-term industry needs

4. IMPLEMENTATION & ITERATION

Education and workforce leaders implement programs, receiving feedback from industry and collaborating to iterate and address regional workforce planning needs

IB1: INVESTMENT IN INDUSTRY-SERVING, UNIVERSITY-BASED INNOVATION CENTERS

Agile and responsive workforce planning that is in sync with employer needs and enables talent in the Greater Wichita region to take on the jobs of the future

Industry Perspective: Manufacturing

2022 aerospace and defense industry outlook | Focusing on digital innovation to thrive

As the aerospace and defense (A&D) industry recovers, companies are expected to focus on innovation to develop new technologies and solutions, create new markets, and expand growth opportunities

Digital thread and smart factory

Enabling the digital thread can be crucial for an A&D business to stay agile in today's shifting business environment.

Aftermarket

The pandemic resulted in a substantial drop in aftermarket revenues and profits, so companies are looking for ways to capture more value from aftermarket as commercial aerospace recovery accelerates.

Advanced military capabilities

Defense companies should emphasize building improved capabilities in fighter aircraft, space resilience, shipbuilding, and cybersecurity to drive growth.

Space market

Developments along three key areas—the launch industry, satellite trends, and new technology—could drive growth in space-based services to offer tangible value for businesses, society, and consumers.

Advanced air mobility (AAM)

AAM is gaining increased momentum and gradually becoming mainstream, especially as companies developing electric vertical takeoff and landing (eVTOL) aircraft continue to receive substantial investment from sources ranging from traditional aerospace companies to private equity investors.

Decarbonization

While the industry has been at the forefront of adopting new and advanced manufacturing technologies to increase fuel efficiencies, now is the time for A&D companies to leverage advanced technologies more than ever to drive innovation to help address the sustainability challenge.

Mergers and acquisitions (M&A)

As industry players reevaluate their portfolios and focus on divestments of non-core assets, well-prepared companies with strong balance sheets should make smart M&A decisions that create increased shareholder value.

Learn more about Deloitte's 2022 aerospace and defense industry outlook here.

2022 manufacturing industry outlook | Eyeing growth despite turbulence

The manufacturing industry is building back fast, undeterred by significant labor and supply chain challenges. To maintain this momentum, manufacturers should navigate elevated risks while advancing sustainability priorities

Workforce shortage

Preparing for the future of work could be critical to resolving current talent scarcity. Manufacturing executives may also need to balance goals for retention, culture, and innovation. As flexible work is taking root in offices, manufacturers should explore ways to add flexibility across their organization in order to attract and retain workers. Organizations that can manage workforce shortages and a rapid pace of change today can come out ahead.

Supply chain instability

Manufacturers are remaking supply chains for advantage beyond the next disruption. Root causes for extended US supply chain instability may include overreliance on low inventories, rationalization of suppliers, and hollowing out of domestic capability. Supply chain strategies in 2022 are expected to be multipronged. Digital supply networks and data analytics can be powerful enablers for more flexible, multitiered responses to disruptions.

Smart factory initiatives

Acceleration in digital technology adoption could bring operational efficiencies to scale. US manufacturers have room to run with advanced manufacturing compared to many competitors globally. Investment in robots, cobots, and artificial intelligence can continue to transform operations. Industrial 5G deployment may also expand in 2022 along with advances in technology and use cases.

Cybersecurity

Rising threats are leading the industry to new levels of preparedness. Manufacturers should look not only at their cyber defenses, but also at the resiliency of their business in the event of a cyberattack. Cybercriminals can cause harm beyond intellectual property theft and financial losses, using malware that now ties in AI and cryptocurrencies. The potential for additional oversight is likely to prompt more industrials to rethink preparedness for crisis response.

ESG investment

Manufacturers are likely to bring more resources and rigor to advancing sustainability. To develop and deliver against net-zero or carbon-neutral goals, more organizations are dedicating or redesigning sustainability roles and initiatives and quantifying efforts and results around energy consumption. Proactive approaches may help manufacturers stay ahead of the change and create competitive advantage.

In line with the aerospace and defense industry, manufacturing companies will also have to contend with and **embrace digital innovation** to **turn risks into advantages** and **capture growth**

Learn more about Deloitte's 2022 manufacturing industry outlook here.

Digital transformation and Industry 4.0 are creating new ways of working in manufacturing and product development

These new ways of working...

Digital Product Development

- **Model-Based Product Definition**
- **Real-Time Collaboration**
- **Rapid Design Optimization**
- **Design for Customer Experience**
- **Model-Based Manufacturing**
- **Real-Time Product Intelligence**
- **Design for Manufacturing Innovation**
- **Connected Customer Experience**

Smart Ops in Manufacturing

- **Dynamic Fulfillment**
- **Intelligent Supply**
- **Synchronized Planning**
- **Connected Customer**
- **Smart Manufacturing Operations**

... enabled by industry 4.0 technologies...

Cyber Physical Systems
Machine Learning
Robotics
IOT
AI
Big Data
Digital Twins
Sensors
Simulation
Advanced & Predictive Analytics
Cloud Computing
AR/MR/VR
3D Printing

...require a future workforce with a new set of skills

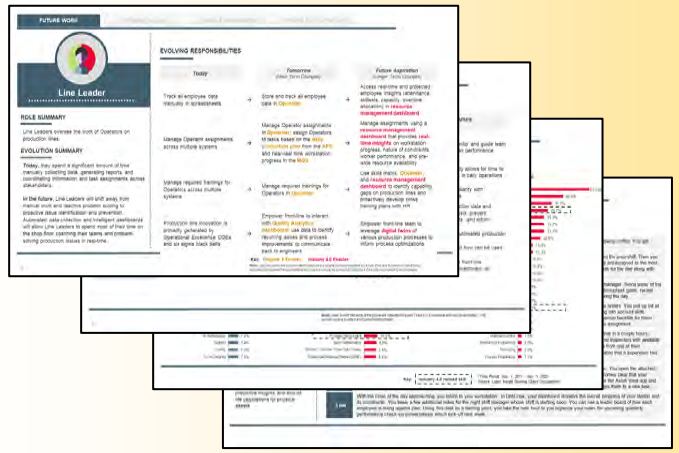
Human	Specialized	Technical
• Digital Learning Agility • Appetite for Risk, Innovation, And Experimentation • Intellectual Curiosity • Structured / Analytical Thinking • Business Acumen • Story Telling With Data	• Agile Methodology • Design Thinking • Design for X (CX, Manufacturability) • Model Based Manufacturing / Engineering • Continuous Improvement • Predictive Maintenance	• Computer Literacy • Data Analytics / Data Visualization • Data Driven Decision Making • Rapid Prototyping (e.g., Additive Manufacturing, 3D simulations) • Simulation via Digital Twins • Development Skills • Industry 4.0 Tech (e.g., Robotics, IOT Sensors, AR/MR/VR) • Maintenance of High-Tech Automated Equipment / Robotics

In addition to **process and technology investments**, organizations must **evolve their people** in order to take advantage of these **future digital capabilities**

Manufacturing Job Canvas Overview

What is a Job Canvas?

- An illustration of how the **core elements of a job** (e.g., responsibilities, skills, teams, work environments) **may evolve** in the future as a result of **industry 4.0 trends and technologies**
- Identifies **critical skills and roles of the future** which organizations can **start building and recruiting today**
- Highlights the changes in **job design, talent acquisition**, **learning + development**, and **workplace technologies** that might be needed to operationalize the future



Why is this important?

- **Skilled talent is a key differentiator** for high performing organizations
- The **skills shortage is increasing** every day; ~2.4 million manufacturing jobs unfilled by 2028
- **Leading companies have already begun** recruiting and building these skills for the future
- To **maintain competitive advantage and drive long term profit,** organizations must **start building the workforce of the future today**

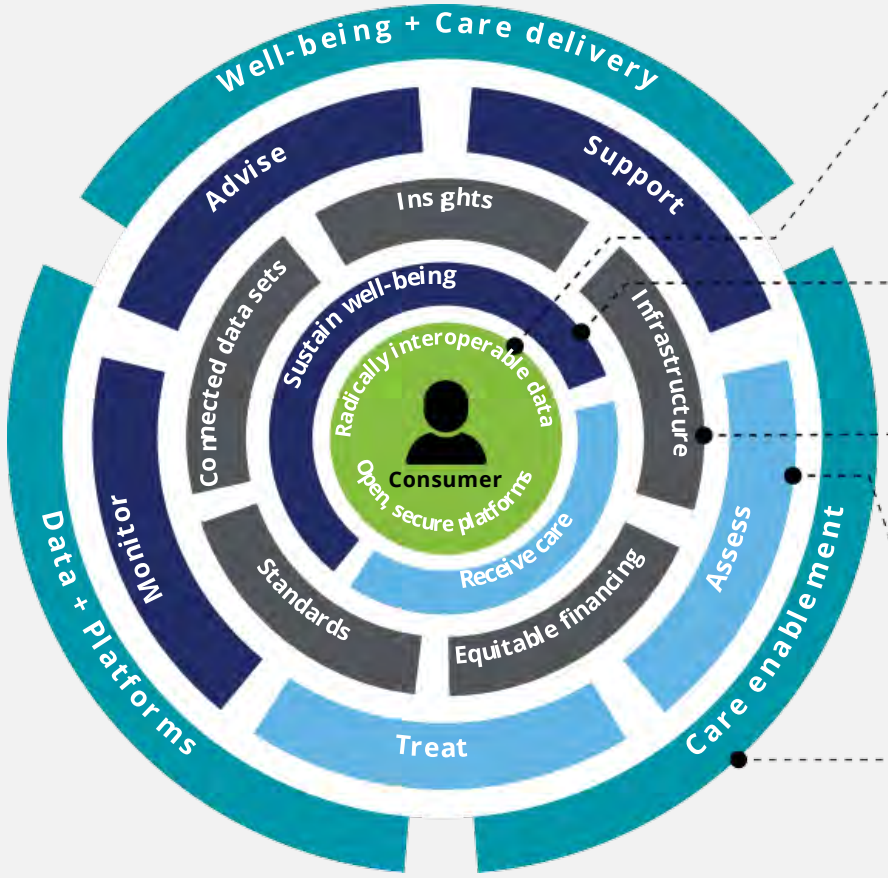
MANUFACTURING ROLES INCLUDED IN APPENDIX II

1. Demand planner
2. Supply planner
3. Maintenance manager
4. Manufacturing engineer
5. Line leader
6. Operator

Industry Perspective: Healthcare

The future of health will be driven by digital transformation enabled by radically interoperable data and open, secure platforms

Always-on sensors that capture data and platforms that aggregate, store, and derive insights from individual, institutional, population, and environmental data will catalyze the transformation.



The **catalyst for change:** Radically interoperable data will empower hyper-engaged consumers to sustain well-being and receive care only in the instances where well-being fails.

Two **jobs to be done** for consumers to holistically address their health (overall state of well-being encompassing mental, social, emotional, physical, and spiritual health).

Five **enablers** for consumers to accomplish their jobs to be done.

Five **tasks** that ecosystem players will perform on behalf of health consumers.

Three categories of **business archetypes** in the future of health environment.

10 archetypes are likely to emerge and will redefine today's traditional life sciences and health care roles

We believe stakeholders in the future of health will operate within and across three segments and ten archetypes which serve as the backbone for the health ecosystem of tomorrow.

DATA + PLATFORMS

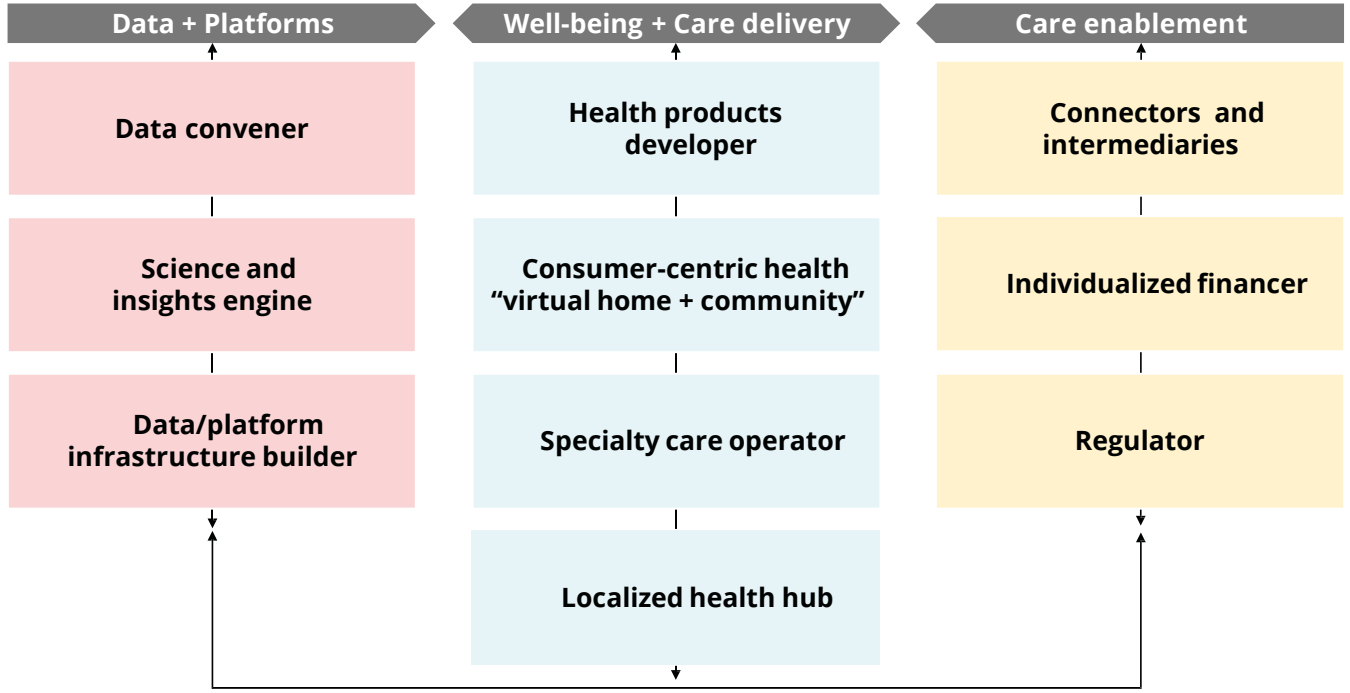
To generate the insights needed for personalized, always-on decision- making in the new health ecosystem.

WELL-BEING + CARE DELIVERY

New virtual and physical communities that can provide consumer-centric delivery of products, care, wellness, and well-being.

CARE ENABLEMENT

Connectors, financers, and regulators that help make the industry's "engine" run.



Life sciences and health care organizations need to **make choices now** to **decide which role(s) they want to play in the future**. Critical to this decision is **understanding how multiple archetypes could fit together** into a **cohesive strategy** and **new business models** required for success in the future.

Deep dive | 10 archetypes defining the health ecosystem of the future

DATA + PLATFORMS

1. Data convener

Data-gathering organizations will have an economic model built around aggregating and storing individual, population, institutional, and environmental data. They will also promote interoperability and help ensure privacy/security. Data will be used to drive the future of health.

2. Science and insights engine

Some organizations will likely have an economic model driven by their ability to derive insights and define the algorithms that power the future of health. These organizations will conduct research, develop analytical tools, and generate data insights that go far beyond human capabilities in care delivery.

3. Data and platform infrastructure builder

This new world of health will need infrastructure and platforms that can serve highly empowered and engaged individuals in real time. Someone will need to lay the pipes. Data and platform infrastructure builders will develop and manage site-less health infrastructure to link consumers and health stakeholders and set standards for platform components.

WELL-BEING + CARE DELIVERY

4. Health product developer

Health product developers will power the consumer health ecosystem by developing and manufacturing wellness and care products-from applications to drugs and devices. Products will include pharmaceuticals, medical devices, software, applications, and wellness products.

5. Consumer-centric health community

Along with companies that develop health products, other organizations will provide the structure that supports virtual communities. Consumer-centric health players will provide virtual, personalized wellness and care to consumers; leverage community to encourage behavior change; and drive consumer and caregiver education.

6. Specialty care operator

Two decades from now, we will still have disease, which means we will still need specialty care providers and highly specialized facilities where those patients can receive care. Specialty care operators will provide essential specialty care and interventions when in-home wellness and care efforts are insufficient.

7. Localized health hub

While there will be some specialty care, most health care will likely be delivered in localized health hubs. Localized health hubs will serve as centers for education, prevention, and treatment in a retail setting. Additionally, local hubs will connect consumers to virtual, home, and auxiliary wellness providers.

CARE ENABLEMENT

8. Connectors and intermediaries

These are the logistics providers that will run the just-in-time supply chain, facilitate device and medication procurement operations, and get the product to the consumer.

9. Individualized financier

Unlike the health insurers of today, these organizations will create the financial products that individuals will use to navigate their care. These organizations will offer tailored modular and catastrophic care coverage packages. They will drive reductions in care costs by leveraging advanced risk models, consumer incentives and market power.

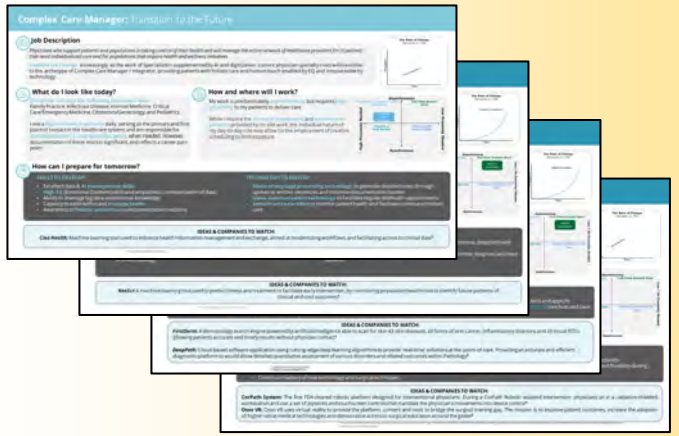
10. Regulator

While we will still have regulators, we probably won't view them as governmental traffic cops. They will set the standards for how business is transacted. The regulators of the future will influence policy to catalyze the future of health and drive innovation while promoting consumer and public safety.

Healthcare Job Canvas Overview

What is a Job Canvas?

- An illustration of how the **core elements of a job** (e.g., responsibilities, skills, teams, work environments) **may evolve** in the
- Identifies **critical skills and roles of the future** which organizations can **start building and recruiting today**
- Highlights the changes in **job design, talent acquisition**, **learning + development**, and **workplace technologies** that might be needed to operationalize the future



Why is this important?

- **Skilled talent is a key differentiator** for high performing organizations
- **Leading companies have already begun** recruiting and building these skills for the future
- To **maintain competitive advantage and drive long term profit,** organizations must **start building the workforce of the future today**

HEALTHCARE ROLES INCLUDED IN APPENDIX II

1. Healthcare and Physician Archetypes
2. Complex Care Manager
3. Analytic Consultant
4. Digital Consultant
5. Proceduralist

Industry Perspective: IT

IT functions face a variety of challenges as the pace of change increases and business demands shift in the digital age

TECH-DRIVEN STRATEGY

Business is increasingly expecting IT to play a pivotal role in designing and delivering strategic growth initiatives, but IT team members don't always have the skills to support

DYNAMIC IT ORGANIZATIONS

Conventional organizational structures in IT no longer support dynamic or agile needs; IT is expected to adopt new ways of working

DIGITAL INNOVATION

A laser-focus on the customer, and dynamic experimentation to satisfy their needs, fundamentally changes the capabilities expected of IT team members

PRODUCT MANAGEMENT

Increasing focus on managing external product applications and engaging operations early on in the development cycle means IT employees increasingly play in complex ecosystems

DATA SECURITY

Increasing focus on customer data privacy to minimize risks of data generation and sharing across multiple platforms puts IT at the sharp point of balancing enterprise risk and innovation

DATA ARCHITECTURE

Constantly changing data sources, data integrations, and capabilities complicate the valuable use of data, while IT often has to field often unrealistic requirements from business partners

NON-TECHNICAL SKILLS

Roles and skills shift to drive stronger integration with the business and evolving relationships with service providers, forcing IT to spend increasing amounts of time building non-technical skills

EVOLVING ARCHITECTURE

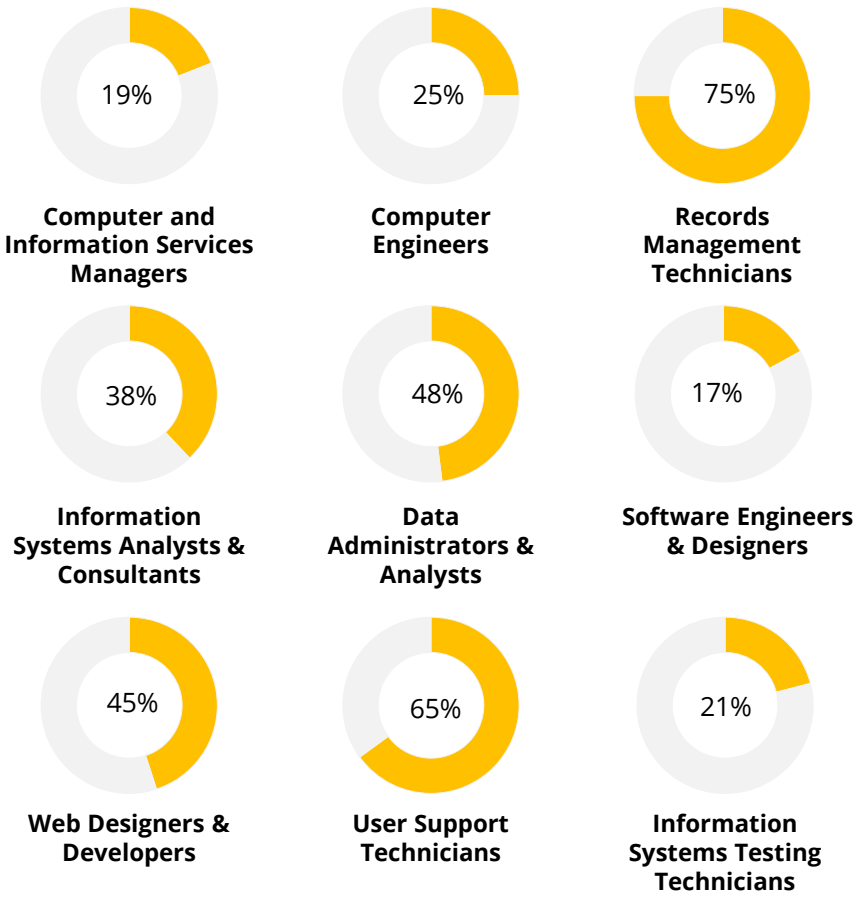
High cost, complexity, and low flexibility of legacy solutions, and market advances drive a need to re-platform, at the same time that IT is being pushed to bring innovative new technologies online faster

These disruptors are not necessarily unique to IT– other functions and business areas are facing similar shifts

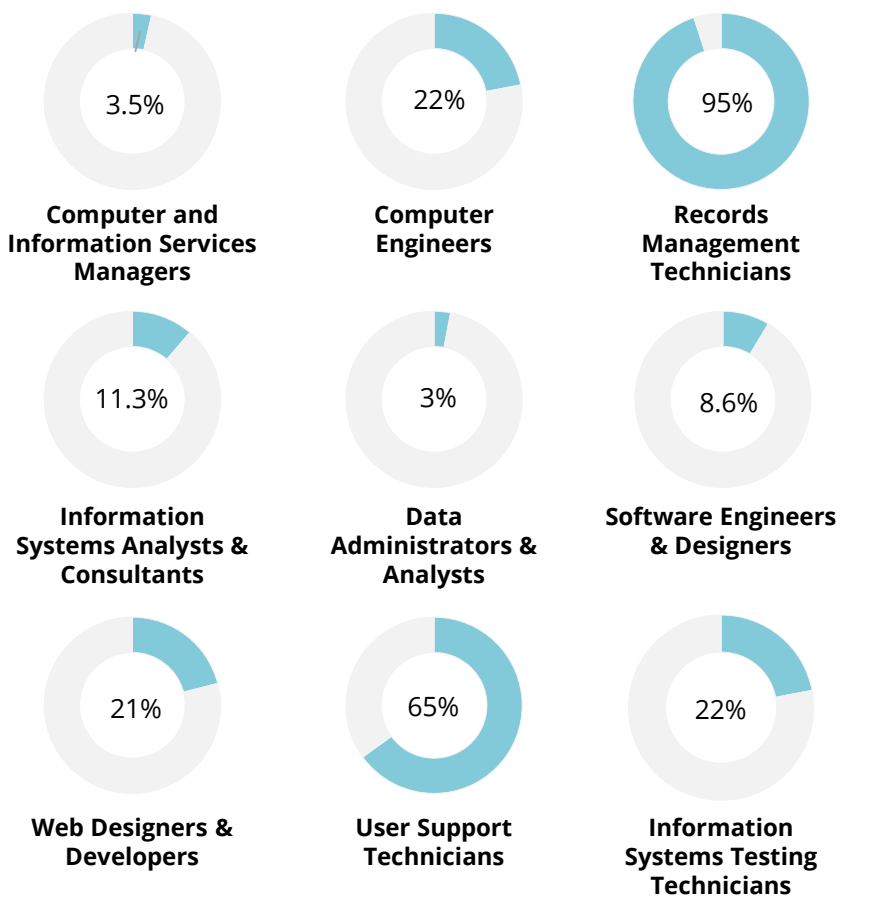
Impact of automation on IT in 10-20 years

Understanding the possibility and probability of automation is critical and rapidly evolving

Proportion of tasks that can be automated[1]



Probability of automation[1]

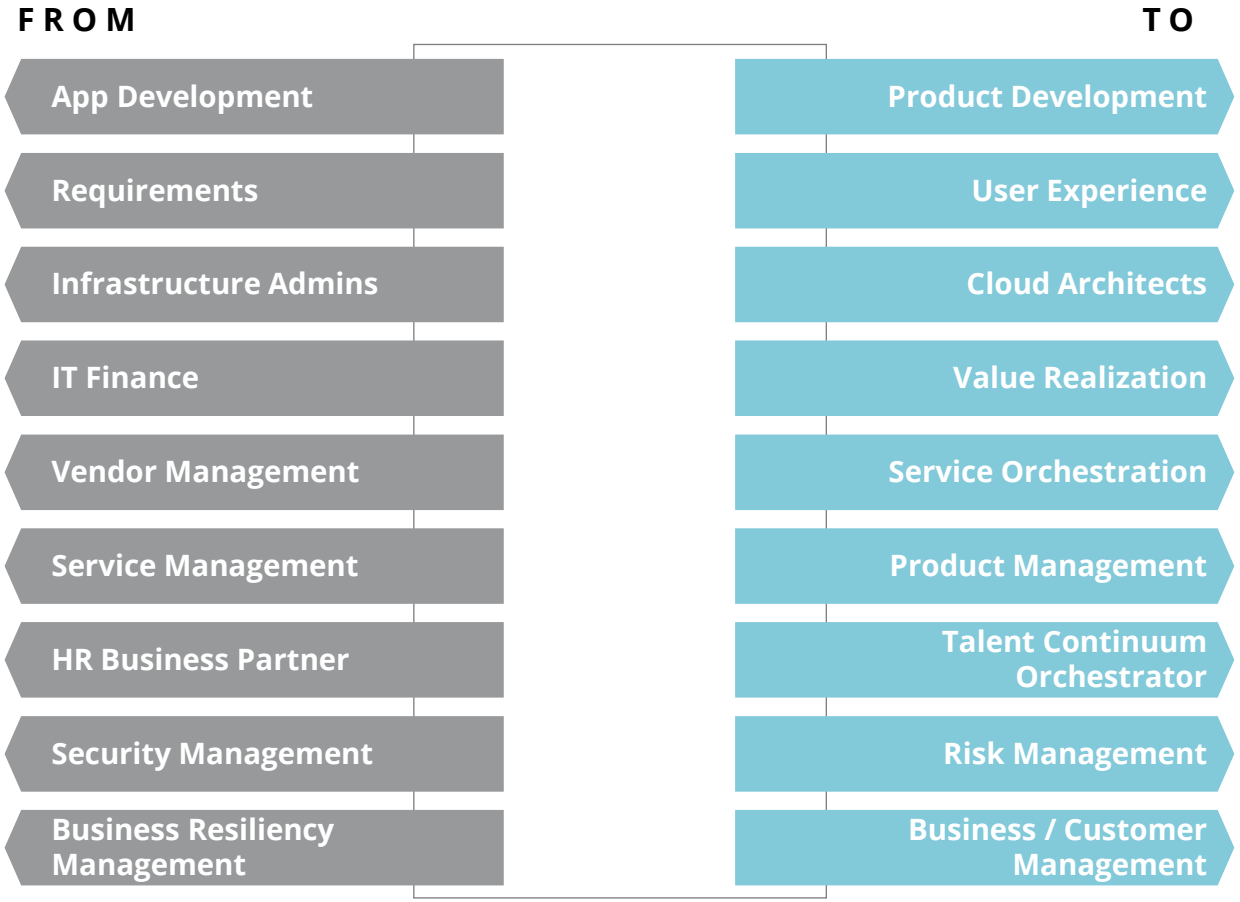


[1] C. Lamb. (June 2016). The Talented Mr. Robot: The Impact of Automation on Canada's Workforce – Brookfield Institute and Deloitte analysis

Shifts in the Future Work and Workforce for technology

The future of tech requires new and innovative ways of working, which requires the development and acquisition of new skills and capabilities

Shifts In IT Work



Shifts In IT Workforce

Illustrative Roles

Jobs that change	Jobs that disappear	Jobs that are new
Enterprise Architect	**Release Manager**	Cloud Orchestration
IT Finance	**Testing**	Product Development
HR Business Partner	**Services Managers / Helpdesk**	Data Scientists
Testing Orchestration	**Tech Architecture**	Data Analysts / Insights
	System & Network Admins	Human Centered Design
	Portfolio Managers	Open Talent Orchestration
	Business Architecture	Virtual Reality Designer
	Project Managers	
	Business / Functional Analysts	

Talent programs for technologists begin with understanding and planning for future roles and skills

Based on defined work outcomes, leaders can establish the organization and roles needed to support the newly designed disciplines

	Evolving Roles	Declining Roles	Net New Roles
Business Co-Creation	Tech & Business Leadership	Business Relationship Manager	Digital Strategist
Value Realization & Measurement	IT Finance Manager	PMO Coordinator	Agile Portfolio Manager
Product Management	Product Manager	Project Manager Business Analyst	Product Owner
Experience & Design	User Experience Designer	User Requirements Manager	Customer Experience Designer
Technology Architecture	Enterprise Architects	System & Network Admin Systems Engineer	Cloud Architect
Data & Insights	Data Analyst & Database Admin	Backup Admin	Data Scientist
Product Delivery	Product Engineer UI Designer	IT Operations Manager Service Manager Release Engineer Tester	DevOps Engineer Site Reliability Engineer
Talent Continuum	HR Technology Manager IT HR Manager	Learning Manager System Administrator	Open Talent Coordinator
Ecosystem & Platform Orchestration	Sourcing & Procurement Manager	Vendor Manager	Ecosystem Partner Manager
Security, Risk & Resilience	Security Manager Chief Risk Officer	System Security Admin	Product Security Manager

89% of technology executives* plan to retain current staff but not all employees will want or be able to transition roles.

Putting skills in center focus enables access to a wider, more diverse talent pool while allowing new career paths

A deep understanding of the critical and at-risk skills is a foundational input for effective talent decisions, such as planning, hiring, reskilling, and rewards.

SKILLS: *The tactical types of knowledge or expertise needed to achieve work outcomes within a specific context*

	Obsolete* *Present in current workforce but expected to be irrelevant in the future*	**Durable – declining** *Not expected to be as important in the future*	**Durable – stable** *Expected to be as important in future as it is currently*	**Durable – increasing** *Expected to be even more important in the future compared to current state*	**New** *Expected to emerge as a skill of the future*
Business and Functional *Breadth of business and functional knowledge to manage the speed of business environment*	• Records Management • Service Catalog Management	• Calendar and Scheduling • Document Examination • Project Management	• Risk Management • Stakeholder Management • Vendor Relationship Management	• Customer Relationship Management • Business Process Modeling • Outsourcing Strategy • Customer Service	• Business Strategy • Business Model Innovation • Data & Tech. Risk Management (e.g., Information Integrity) • Digital Ethics • Regulatory Compliance
Technical and Scientific *Depth of technical or scientific domain and / or technologies*	• Select Languages (e.g., APL, ALGO, Ruby) • Batch Process Design / Implementation	• Data Collection • Network Administration • Select Languages (e.g., COBOL) • Batch Process Support & Maintenance	• User Experience Design • Access Management • Data Analytics / Visualization • Technical Architecture • Systems Thinking • EUC Computing	• Design Thinking • Application/API development • Data Strategy & Governance • Security by Design • Agile / Lean Product Mgmt • Cloud (e.g., Migration Strategy, Implementation, Integration, etc.)	• Emerging technologies (e.g., Blockchain / DLT, Machine Learning, AR/VR/MR, Quantum Computing, Chatbot technology, Voice Assistants, etc.)

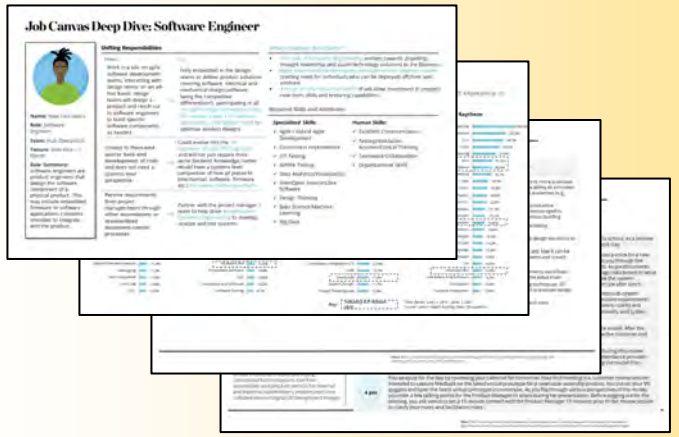
HUMAN CAPABILITIES: *Observable human attributes that are demonstrated independent of context*

Nurtured *Attributes that are developed over time through experience*	*EHCs are persistent over time, so these categories are not relevant*	• Critical Thinking • Social Intelligence • Change Leadership • Emotional Intelligence	• Cognitive Flexibility • Dealing with Ambiguity • Adaptive Thinking	*n/a*
Innate *Attributes that people are born with that are cultivated and amplified over time*		• Resilience	• Empathy • Creativity	

IT Job Canvas Overview

What is a Job Canvas?

- An illustration of how the **core elements of a job** (e.g., responsibilities, skills, teams, work environments) **may evolve** in the future
- Identifies **critical skills and roles of the future** which organizations can **start building and recruiting today**
- Highlights the changes in **job design, talent acquisition**, **learning + development**, and **workplace technologies** that might be needed to operationalize the future



Why is this important?

- **Skilled talent is a key differentiator** for high performing organizations
- **Leading companies have already begun** recruiting and building these skills for the future
- To **maintain competitive advantage and drive long term profit,** organizations must **start building the workforce of the future today**

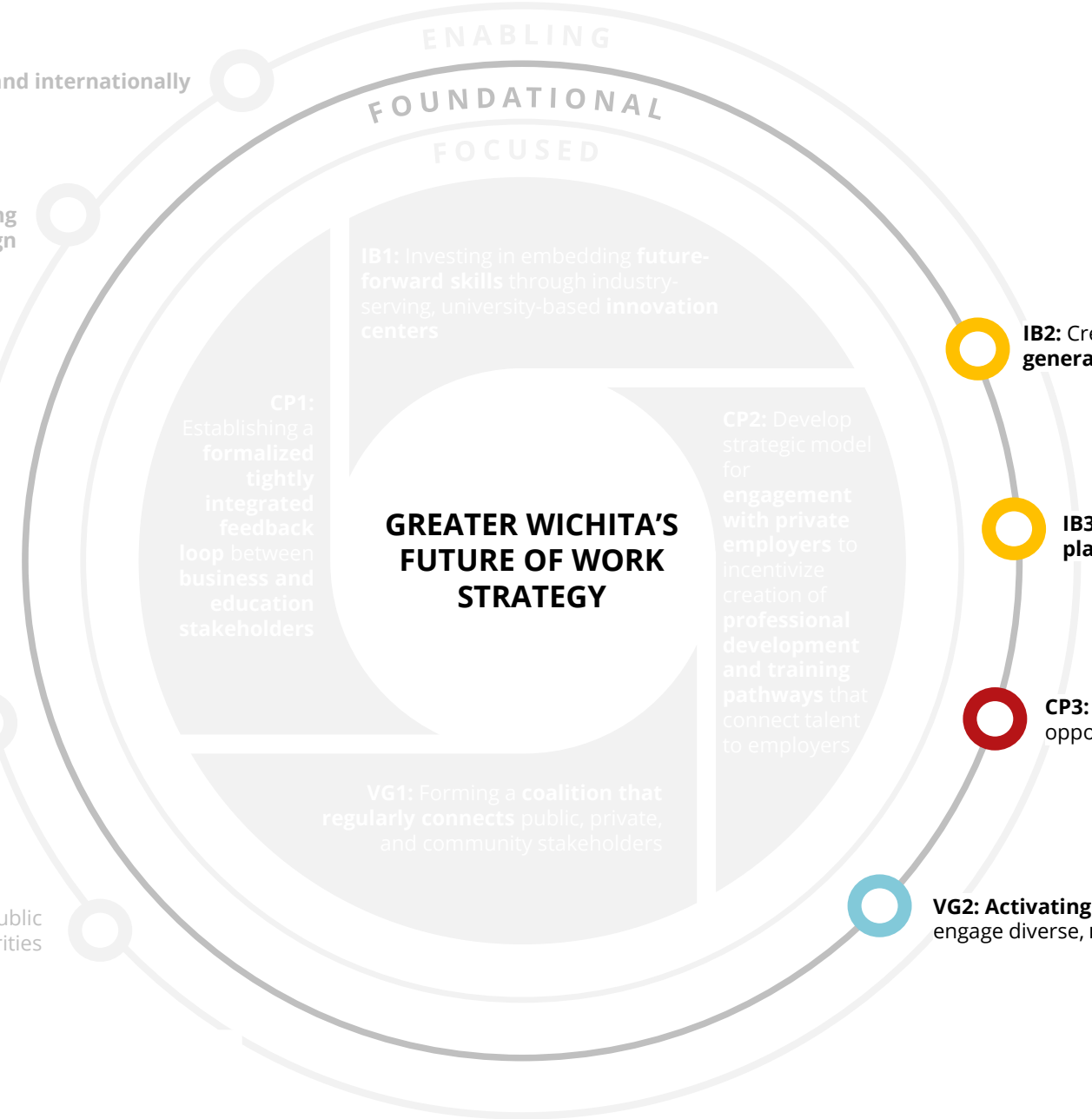
IT ROLES INCLUDED IN APPENDIX II

1. Software Engineer
2. Systems Engineer

Chapter II: Foundational Commitments

FOUNDATIONAL COMMITMENTS:

The commitments that will establish the infrastructure needed to address barriers faced by the current and future workforce



Strategic Pillars

- Cultivating a Vibrant, Global Community
- Creating Possibilities
- Investing Boldly
- Increasing Appetite for Risk

VG3: Expanding connectivity to Wichita **domestically and internationally**

VG4: Accelerating existing internal and external **marketing campaign**

AR1: Support the **establishment of incubators** that advance new technology to **establish Wichita as a hub for innovation**

AR2: Implementing a highly focused, relationship-based **campaign to attract venture capital**

AR3: Challenging status quo on public investment priorities

IB2: Creating **sustainable funding** mechanisms for next **generation transportation solutions**

IB3: Investing in the development of **compelling places** to attract talent to the region

CP3: Expanding access to employment opportunities for **underserved communities**

VG2: Activating gathering spots in the region that engage diverse, **multicultural audiences**

WORKPLACE

VG2: *Activate gathering spots around the region with new activities and celebrations* ***that draw and engage diverse and multicultural audiences***

KEY CONSIDERATIONS

IMPACT

1. Increased investment in activities and entertainment venues to better focus on meeting the professional and personal needs of the community
2. Development of ongoing support for cultural activities which can result in opportunities for cultural collaboration and increased sense of belonging

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives of community, local and state sectors

IN-FLIGHT INITIATIVES

Project Wichita: Spectacular gathering spot in the heart of the city serving as a destination for all locals and visitors alike
Project Wichita: A comprehensive and unified plan to connect development in the urban core, ensuring a vibrant city center, beautiful, engaging and walkable—that the entire region can be proud of

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Engage leaders from private, public and community groups across the region to understand areas for further investment that can drive belonging across Wichita (e.g., additional entertainment venues, investment / support for cultural activities and celebrations)
2. Leverage inputs to prioritize recommended activities, define timeline, research local or state policy considerations and identify the budgetary resources needed to be successful
3. Work with stakeholders (e.g., real estate developers, community members) to develop and implement a tactical plan for the activities that will be supported each fiscal year
4. *Ongoing*: Routinely meet to develop the next fiscal year's events, seek feedback from community for improvements, routinely engage stakeholders to review and revise plans to meet current needs, and continue to expand network of diverse stakeholders for input

What we heard from the Ambition Labs and Roadmap Workshops:

- There is an opportunity to improve the quality of life in Wichita to aid in the attraction and retention of diverse populations
- There is a need to expand the currently limited number of cultural activities to promote a sense of belonging for the diverse demographic of Wichita

Level of Effort

Level of Impact

Level of Urgency

CP3: *Expand access to employment opportunities by* ***increasing supporting services for underserved communities in Wichita***

KEY CONSIDERATIONS

IMPACT

1. Established targeted strategies to address the existing workforce barriers for underserved communities across the Greater Wichita region
2. Increased attraction efforts for diverse talent across the region to further promote the value of inclusivity across the Greater Wichita region

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community, business and education sectors

IN-FLIGHT INITIATIVES

Project Wichita: Create a replicable "anchor institution" model that streamlines and leverages access to resources and community partnerships to innovatively address critical community issues.

Framework for Growth: Launch a campaign to attract and support immigrant communities in Kansas through marketing, funding to resettlement agencies and services such as ESL and career placement.

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Engage community, business and education leaders across the region to identify barriers faced by underserved communities in Wichita
2. Using inputs, continue to work with partners to develop a strategic plan to identify and prioritize opportunities to mitigate barriers and drive access (i.e., ways to improve accessibility, childcare solutions that match shift work hours for manufacturing and hospital staff) for existing or new programs and opportunities
3. *Ongoing:* Ambassadors should seek feedback from community and make necessary improvements, continuously assess level of engagement/retention of employees utilizing programs

What we heard from the Ambition Labs and Roadmap Workshops:

- There is a need to identify and address the barriers to access (e.g., childcare, transit, paid training opportunities) faced by the underserved communities in the Greater Wichita region in order to drive talent development and further support the talent pipeline in the region

Level of Effort

Low High

Level of Impact

Low High

Level of Urgency

Low High

IB2: *Create sustainable funding mechanisms to* ***drive long-term investment and ridership in public transit and next-generation transportation solutions*** *(e.g., employer-sponsored shuttles to and from workplace, childcare centers)* ***that will expand access to opportunities for talent in the region***

KEY CONSIDERATIONS

IMPACT

1. Easier mobility experience for workers, job seekers, and students that connects them more directly to employment and professional development opportunities
2. Alignment of public and private resources around community transportation needs resulting in long-term funding partnership

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from public sector, private sector and community

IN-FLIGHT INITIATIVES

Framework for Growth: Maintain and enhance transportation networks that solidify our position as a distribution hub

Framework for Growth: Support the sustainability of existing logistics parks and the intentional establishment of new logistics parks by incentivizing and investing in…the latest multi-modal capabilities and technologies

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Engage employers, community members, residents, and public sector stakeholders to understand existing transportation networks in Wichita and conduct detailed opportunity assessment
2. Leverage inputs to identify opportunities to expand public transportation in the region and pinpoint areas where employer-sponsored interventions would better serve impacted communities, potentially working with professional development organizations to tie transportation solutions to specific training opportunities
3. Deliver roadmap with prioritized activities, timeline, local or state policy considerations, and budgetary needs
4. Plan roll-out of public transit construction and private transportation solutions within community
5. *Ongoing:* Seek feedback from riders, continuously measure ridership and reassess routes for private transportation solutions, consider further expansion as needed based on community need

What we heard from the Ambition Labs and Roadmap Workshops:

- Job seekers and students find access to transit remains a consistent barrier to finding employment and professional development opportunities
- Coordinated investment from both public and private sectors is needed to address these gaps

Level of Effort

Level of Impact

Level of Urgency

IB3: *Invest in developing compelling places (i.e., Riverfront Legacy Master Plan, project Downtown, Main Street Revitalization) across diverse areas of the city* ***to highlight the rich history and diversity of Wichita and attract talent to the region***

KEY CONSIDERATIONS

IMPACT

1. Tangible multi-year investment in development of identified places
2. Increase in talent attraction to region due to improved quality of place aligned with community needs and centered on the uniqueness of the Greater Wichita region

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community and business stakeholders

IN-FLIGHT INITIATIVES

Project Wichita: Create a spectacular gathering spot in the heart of the city serving as a destination for all locals and visitors alike, as a complement to the neighborhood-centered efforts in the Greater Wichita region

Framework for Growth: Provide resources to help develop compelling places (i.e., Main Street revitalization)

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Solicit input from community stakeholders (ranging from residents, students, small businesses, large employers, etc.) to understand public space and real estate development needs by segment
2. Based on input, craft multi-neighborhood real estate development plan with demonstrated improvements to quality of place, including 1-2 marquee developments
3. Work with public and private sector stakeholders to allocate funding and prioritize multi-year investments
4. Develop compelling marketing campaign that capitalizes on new development and frames Wichita as an attractive place for highly skilled talent of diverse backgrounds to live and work

What we heard from the Ambition Labs and Roadmap Workshops:

- There is a desire to build physical infrastructure in the Greater Wichita region that creates spaces of belonging rooted in the region's natural geography
- Community members expressed a desire for distinctive and unique public spaces that serve as cultural anchors

Level of Effort

Level of Impact

Level of Urgency

Chapter III: Enabling Commitments

ENABLING COMMITMENTS:

The commitments that will drive the region to defy expectations and deliver on their more ambitious goals

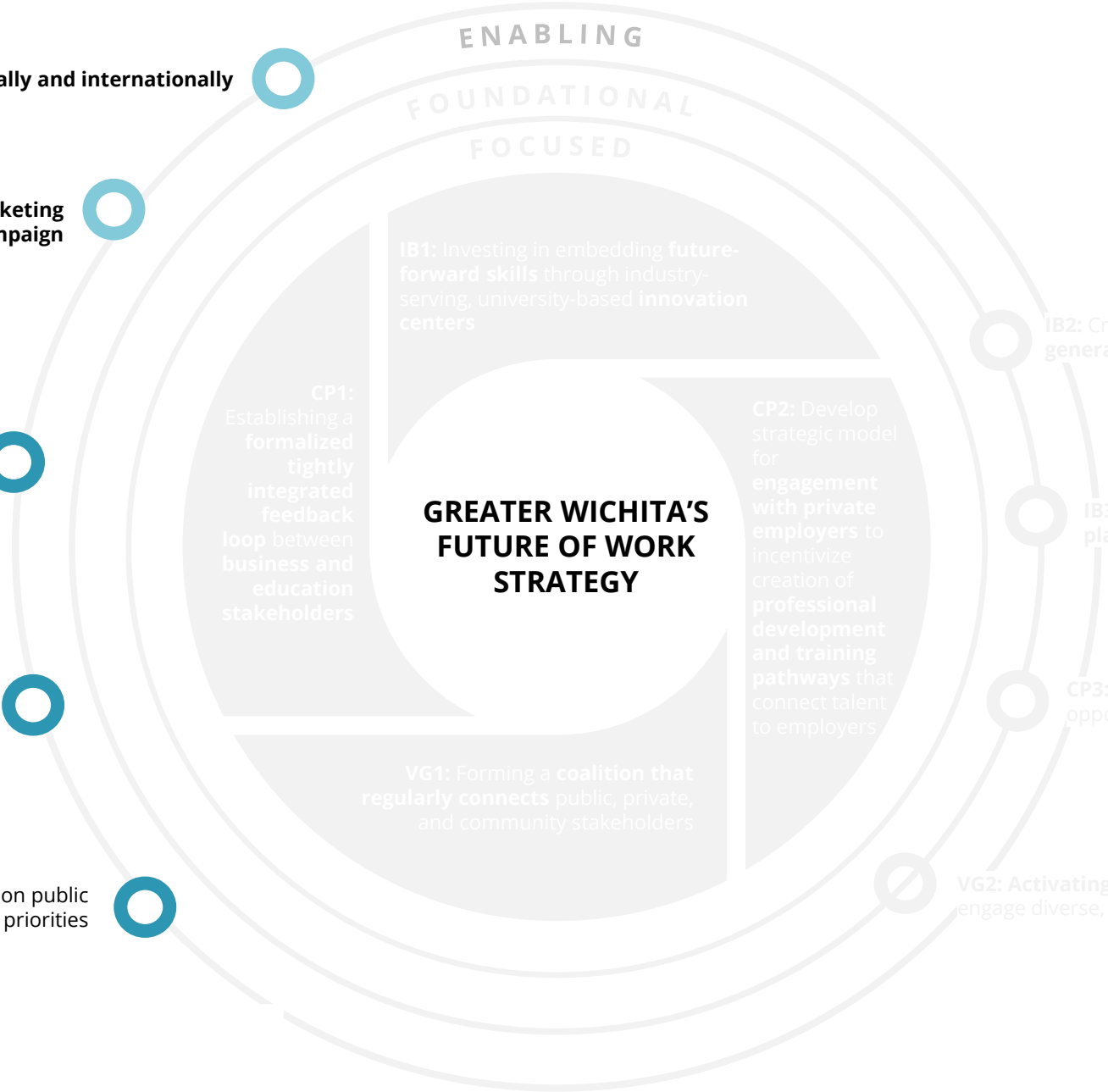
VG3: Expanding connectivity to Wichita **domestically and internationally**

VG4: Accelerating existing internal and external **marketing campaign**

AR1: Support the **establishment of incubators** that advance new technology to **establish Wichita as a hub for innovation**

AR2: Implementing a highly focused, relationship-based **campaign to attract venture capital**

AR3: Challenging status quo on public investment priorities



Strategic Pillars

- Cultivating a Vibrant, Global Community
- Creating Possibilities
- Investing Boldly
- Increasing Appetite for Risk

WORKPLACE

VG3: *Expand connectivity of Wichita domestically and internationally* ***to enable ease of access for future talent and business***

KEY CONSIDERATIONS

IMPACT

1. Identification of nuanced transit priorities and needs faced by populations in Wichita
2. Established rail and air connectivity system to enhance accessibility to and from other key cities/markets

STAKEHOLDERS

Initiative Owner:
- Wichita Airport Authority

Initiative Partners:
- Representatives of the local, state and government sectors

IN-FLIGHT INITIATIVES

Project Wichita: Launch "fly local" campaign among private sector and general public to increase local ridership and continue the trend of decreased airfares

Framework for Growth: Work with regional and state partners to align marketing efforts and expenditures that help attract new nonstop destinations and improve passenger air connectivity.

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Engage community stakeholders across the region to understand the areas of improvement for connectivity in Wichita
2. Utilizing inputs, connect with state/government officials and transportation leaders to identify key criteria to address the barriers faced across the region
3. Work with stakeholders to develop a strategic plan to address the key criteria needed for execution and begin seeking the appropriate approvals for execution
4. Continue to communicate and socialize plan to expand network, sponsors and potential partnerships
5. *Ongoing*, continuously measure # of people utilizing increased transit options and # of positive feedback on improvements, expand network to increase awareness of connectivity barriers, and seek feedback from community on current needs

What we heard from the Ambition Labs and Roadmap Workshops:

- Wichita leaders expressed significant interest in improving access into Wichita to aid in attracting new companies and more global headquarters
- There is a desire to develop an evolved and mature transit system to better support the current and future workforce

Level of Effort

Level of Impact

Level of Urgency

WORKPLACE

VG4: *Accelerating existing* ***internal and external marketing campaigns*** *that embraces Wichita's history and* ***generate buzz around new vision for the region***

KEY CONSIDERATIONS

IMPACT

1. Targeted branding efforts to attract social and financial capital to the Greater Wichita region
2. Clear and unified marketing efforts to promote the region's aspirations and highlight its unique and competitive value

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community, public and private sectors

IN-FLIGHT INITIATIVES

Framework for Growth: Implement a robust and targeted talent attraction effort…which welcomes former residents and alumni back to the state, through investments that promote and strengthen our image and brand identity.

Framework for Growth: Develop a highly focused, relationship-based campaign to encourage venture capital investment in the state's target sectors.

ILLUSTRATIVE EXAMPLES

Vermont ED Marketing Plan (2016-19) ideas Link**:**
- Targeting national, trade and niche media outlets with finely honed pitches about Vermont businesses
- Digital outreach campaigns to tout their quality of life, incl. great schools and outdoor recreation opportunities
- Expanded partnerships with colleges and universities to help connect employers and employees

KEY STEPS

1. Connect with public and private stakeholders to identify internal and external marketing priorities and objectives across the region
2. Based on input, engage local marketing experts to develop an inclusive marketing strategy (e.g., communication vehicles, materials / collateral translated into all represented languages in Wichita) for both internal and external audiences including, identifying recommended marketing platforms, resources, stakeholders, partners and timeline to be successful
3. Work with experts to deploy campaign and establish feedback mechanism for stakeholders to raise questions and share input on communications effectiveness over time
4. Develop long-term communications strategy, including identification of new communications channels to reflect developments across Wichita

What we heard from the Ambition Labs and Roadmap Workshops:

- The Greater Wichita region's leaders noted the importance of sharing the evolution and success stories of the community internally and externally to help promote attraction and retention across the region
- There is an opportunity to enhance the reputation of the region to be more competitive in the market

Level of Effort

Low High

Level of Impact

Low High

Level of Urgency

Low High

WORK

AR1: *Support the establishment of incubators that advance new technology development to* ***establish Wichita as a hub for innovation***

KEY CONSIDERATIONS

IMPACT

1. Increased investment in the regionally-based businesses and access to capital for entrepreneurs in community
2. Establishment of the Greater Wichita region's reputation as a regional hub for innovation

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from private sector and community

IN-FLIGHT INITIATIVES

Project Wichita: Support regional entrepreneurial organizations to develop and update asset maps, resource guides, and support structure for…the regional entrepreneurial community

Framework for Growth: Incentivize companies to establish accelerators and/or innovation competitions that provide industry-specific innovation ecosystems to entrepreneurs

ILLUSTRATIVE EXAMPLES

Singapore's Agency for Science, Technology and Research (A*STAR) Link:
- Encourages the development of industry-relevant manufacturing technologies for commercialization in the coming years
- Focus areas include AI, Industrial Internet-of-Things (IIoT), additive manufacturing, and data analytics

KEY STEPS

1. Work with local entrepreneurs and small business owners to understand their needs, barriers, and accelerators for success, and work with public and private sector stakeholders to identify industries to target for innovation/disruptors
2. Build business case for the Greater Wichita region as a hub for innovation, rooted in history of precision manufacturing, access to skilled talent from WSU Tech, and low cost of doing business
3. Identify and partner with fundraisers and key venture capital players to drawn financial capital into the Greater Wichita region willing to invest in startups
4. Create community infrastructure to support entrepreneur ecosystem and capitalize on existing relationships with the Greater Wichita region's entrepreneurs and leaders in the space

What we heard from the Ambition Labs and Roadmap Workshops:

- Entrepreneurs in the Greater Wichita region have a difficult time accessing capital to start businesses
- Efforts to drive further innovation can build upon the region's rich history of innovation to expand into new industries and bring cutting-edge technologies into legacy industries

Level of Effort

Level of Impact

Level of Urgency

WORK

AR2: *Implement a highly focused, relationship-based campaign to* ***encourage venture capital investment in the state's target sectors***

KEY CONSIDERATIONS

IMPACT

1. Targeted branding efforts to attract venture capital to the region, both financial and social capital
2. Clear and unified marketing efforts to promote entrepreneurship as a cornerstone of the region's aspirations and highlight the Greater Wichita region's unique and competitive value as a hub for innovation

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community, public and private sectors

IN-FLIGHT INITIATIVES

Framework for Growth: Create a new statewide network to provide resources for entrepreneurs, services for investors and coordinated matchmaking

Framework for Growth: Implement a highly focused, relationship-based campaign to encourage venture capital investment in the state's target sectors

ILLUSTRATIVE EXAMPLES

Start In Wisconsin Link:

Online platform for entrepreneurs to access resources across government, educational and entrepreneur support organizations:
- Searchable database of regional/statewide organizations
- Calendar of events and networking opportunities
- 1-on-1 hotline for help and referrals to local entrepreneur organizations

KEY STEPS

1. Connect with public and private stakeholders to identify internal and external marketing priorities and objectives across the region as they relate to Wichita's image as a hub for innovation, including how it can tie into other marketing efforts in region
2. Based on input, engage marketing agency to develop a marketing strategy for both internal and external audiences including, identifying recommended marketing platforms, resources, stakeholders, partners and timeline to be successful
3. Work with experts to deploy campaign and establish feedback mechanism for stakeholders to raise questions and share input on communications effectiveness over time
4. Develop long-term communications strategy for Wichita's innovation ecosystem, leveraging success stories from local entrepreneurs and incorporating new communications channels to reflect developments across Wichita

What we heard from the Ambition Labs and Roadmap Workshops:

- There is an opportunity to enhance the reputation of the Greater Wichita region specifically around innovation, and elevate existing entrepreneurship
- Elevating the region's reputation as a hub for innovation will require targeted marketing to complement the financial and social capital investment in the region

Level of Effort

Level of Impact

Level of Urgency

WORKPLACE

AR3: *Challenge the status quo on public investment priorities with cost/benefit analyses that include* ***lost opportunity cost and benefits manifested multi-generationally****, and could measure success in new ways (e.g., $$ available/appropriated, speed to access of investment $$, # and types of investors)*

KEY CONSIDERATIONS

IMPACT

1. Increased support for research and development tools in areas of investment to help drive informed decision making
2. Dynamic public investments that will reap long-term benefits for the community

STAKEHOLDERS

Initiative Owner:
- TBD

Initiative Partners:
- Representatives from community, local and state sectors

IN-FLIGHT INITIATIVES

Regional Growth Plan: Electric aircrafts are receiving tremendous investment and recent advances in lithium-ion batteries could lead to breakthroughs and accelerated development.

Framework for Growth: Invest in industry-serving, university innovation centers to develop cutting edge technology using cross-cutting advanced competencies.

ILLUSTRATIVE EXAMPLES

N/A

KEY STEPS

1. Work with community, local and state stakeholders to identify proposed public investment projects and the data driving recommendations
2. Engage local experts to perform cost/benefit analyses and calculate lost opportunity cost to determine the long-term benefits of the investment projects
3. Work with partners to develop a tactical plan to prioritize investments and resources based on the results of the cost/benefit analyses and the resulting impacts on the community long-term
4. Share investment plans with community stakeholders for feedback. Update and implement plans for priority investments based on input
5. *Ongoing*, routinely engage with local experts for investment recommendations, make improvements as needed, and expand network to include diverse subject matter experts outside of the region

What we heard from the Ambition Labs and Roadmap Workshops:

- The Greater Wichita region's leaders believe there is an opportunity for the region to further educate on traditional investment opportunities to understand if there are truly positive lasting benefits on the community
- To aid in promoting the Greater Wichita region as a leading innovator, there is a need to continue supporting ideas and investments beyond the status quo

Level of Effort

Level of Impact

Level of Urgency

Next Steps | Section IV

Next steps

Below are the recommended next steps to implement the Future of Work Strategic Roadmap This is intended to serve as a living document that can be updated and refined over time to best meet the needs of the Greater Wichita region.

1

Continue to **engage leaders and stakeholders** (i.e., industry leaders, community leaders) to **gain alignment** and **representation** of industry needs in roadmap

2

Review playbook with **leadership / decision-making bodies** (e.g., state/local government officials, leadership/board groups)

3

Align on **approach for activation** and **assign Owners** and **identify associated Partners** for each Commitment

4

Owners **validate** and **refine** the key steps that support the Commitment and **gain alignment** with Partners

5

Owners build **tactical execution plan** (e.g., project plan, resource needs) and **identify technical experts to partner with** to execute on Commitment

Refine Future of Work Strategic Roadmap as needed over time to meet changing community needs and priorities
Ongoing

Appendices | Section V

Appendix I: Commitments Pillar View

THE GREATER WICHITA REGION'S FUTURE OF WORK STRATEGY PLACEMAT

STRATEGIC PILLARS	CULTIVATING A VIBRANT, GLOBAL COMMUNITY	CREATING POSSIBILITIES	INVESTING BOLDLY	INCREASING APPETITE FOR RISK
FEATURES	**A vibrant, global community…** • Focuses on innovation and unleashing human and organizational potential • Is committed to achieving inclusion and belonging for all • Is sought after by multinational companies and talent • Is connected to a network of leading cities • Creates and communicates a distinctive identity	**A community of possibility…** • Expands access to new and existing ways to learn, work, build careers, and start businesses • Is a place where a variety of people, organizations, and industries can grow • Ensures economic prosperity and equitable outcomes	**Bold investment in Wichita….** • Is committed to prosperity and quality of life for all • Commits to investing for long-term success • Reimagines infrastructure and public space in Wichita • Brings public, private, and community stakeholders to the table to align on bold goals	**An increased appetite for risk…** • Leads to investment in entrepreneurs and creative thinkers in the community • Celebrates learning from failure as part of Wichita's journey • Accelerates Wichita's position as a hub for innovation
FOCUS AREAS	1. Advancing belonging by investing in equitable outcomes for Wichita's marginalized communities 2. Developing world-class transportation infrastructure (air/rail/bus) 3. Celebrating and marketing a compelling 'regional-story' for Wichita 4. Commitment to investing/attracting multinational companies and focus economic development to develop market vibrancy 5. Deliberate community attempts to celebrate diverse cultures (e.g., festivals…)	1. Removing barriers and investing in access to childcare 2. Investing in public transit and mobility access for all 3. Identifying integration points between education, business, industry, and government to expand career opportunities and build the workforce of the future 4. Creating opportunities for businesses of all sizes and across sectors to collaborate and learn from one another	1. Investing in public spaces that capitalize on Wichita's uniqueness and bolster high quality of life 2. Developing world-class transportation infrastructure (air/rail/public transit) 3. Developing generational legacy through public investment 4. Investment in developing legacy and vanguard industries	1. Increasing access to capital and non-financial resources for entrepreneurs 2. Investing in resources and community-building for the business community (entrepreneurs and intrapreneurs) to foster collaboration 3. Creating incentives and infrastructure to accelerate innovation 4. Saying "yes" to cultural and other non-traditional investments

Greater Wichita's Future of Work Strategic Pillars serve as the anchors allowing the region to focus their efforts and develop an ecosystem of commitments that drive progress towards achieving the ambition for the region

CULTIVATING A VIBRANT, GLOBAL COMMUNITY

Understand the needs of all within our community and invest in areas that drive access and inclusion to achieve our goal of belonging for all

FEATURES

The characteristics of the Wichita region's community that will be realized through achieving the goals outlined in the strategic pillars

A vibrant, global community…

- Focuses on innovation and unleashing human and organizational potential
- Is committed to achieving inclusion and belonging for all
- Is sought after by multinational companies and talent
- Is connected to a network of leading cities
- Creates and communicates a distinctive identity

FOCUS AREAS

The priorities that will help focus our efforts to bring the features of each strategic pillar to life

1. Advancing belonging by investing in equitable outcomes for Wichita's marginalized communities
2. Developing world-class transportation infrastructure (air/rail/bus)
3. Celebrating and marketing a compelling 'regional-story' for Wichita
4. Commitment to investing/attracting multinational companies / focus economic development to develop market vibrancy
5. Deliberate community attempts to celebrate diverse cultures (e.g., festivals…)

COMMITMENTS

The specific actions we will take in the next few years to drive progress against each focus area

1. Expand connectivity to Wichita domestically and internationally **to enable ease of access for future talent and business**
2. Activate gathering spots around the region with new activities and celebrations **that draw and engage diverse and multi-cultural audiences**
3. Form a coalition that regularly connects public, private, and community stakeholders **to drive inclusion** by bringing diverse voices to the table with the goal of **identifying and addressing the priorities, needs, and barriers faced by various populations across the region***
4. Accelerating existing **internal and external marketing campaigns** that embraces Wichita's history and **generate buzz around new vision for the region**

**Note*: Commitment deep dive is followed by deep dive with further supplementary information and details on operationalizing commitment.*

CREATING POSSIBILITIES

Create diverse career pathways and opportunities within our community by providing the tools needed to fuel innovative thinking, solutions, and collaboration

FEATURES

The characteristics of the Wichita region's community that will be realized through achieving the goals outlined in the strategic pillars

A community of possibility....

- Expands access to new and existing ways to learn, work, build careers, and start businesses
- Is a place where a variety of people, organizations, and industries can grow
- Ensures economic prosperity and equitable outcomes

FOCUS AREAS

The priorities that will help focus our efforts to bring the features of each strategic pillar to life

1. Removing barriers and investing in access to childcare
2. Investing in public transit and mobility access for all
3. Identifying integration points between education, business, industry, and government to expand career opportunities and build the workforce of the future
4. Creating opportunities for businesses of all sizes and across sectors to collaborate and learn from one another

COMMITMENTS

The specific actions we will take in the next few years to drive progress against each focus area

1. Expand access to employment opportunities by **increasing supporting services for underserved communities in Wichita**
2. Establish formalized, tightly integrated feedback loop between business and education stakeholders on skills demand/supply **to enable agile and responsive workforce planning***
3. Develop strategic model for engagement with private employers to incentivize **creation of professional development and training pathways that connect talent to employers in creative ways**

**Note*: Commitment deep dive is followed by deep dive with further supplementary information and details on operationalizing commitment.*

INVESTING BOLDLY

Empower our community with the resources it needs to think beyond what is "safe" through employer commitment, hard dollar investment, and leadership buy-in

FEATURES

The characteristics of the Wichita region's community that will be realized through achieving the goals outlined in the strategic pillars

Bold investment in Wichita….

- Is committed to prosperity and quality of life for all
- Commits to investing for long-term success
- Reimagines infrastructure and public space in Wichita
- Brings public, private, and community stakeholders to the table to align on bold goals

FOCUS AREAS

The priorities that will help focus our efforts to bring the features of each strategic pillar to life

1. Investing in public spaces that capitalize on Wichita's uniqueness and bolster high quality of life
2. Developing world-class transportation infrastructure (air/rail/public transit)
3. Developing generational legacy through public investment
4. Investment in developing legacy and vanguard industries

COMMITMENTS

The specific actions we will take in the next few years to drive progress against each focus area

1. Invest in developing compelling places (i.e., Riverfront Legacy Master Plan, project Downtown, Main Street Revitalization) across diverse areas of the city **to highlight the rich history and diversity of Wichita and attract talent to the region**
2. Create sustainable funding mechanisms to **drive long-term investment and ridership in public transit and next-generation transportation solutions that will expand access to opportunities for talent in the region**
3. Invest in embedding future-forward skills (e.g., coding, technology, data analytics, etc.) through industry-serving, university-based innovation centers **to enable talent to take on the jobs of the future***

**Note*: *Commitment deep dive is followed by deep dive with further supplementary information and details on operationalizing commitment.*

INCREASING APPETITE FOR RISK

Move beyond our culture of comfort to allow our community to take risks and try new things that will drive progress for our region

FEATURES

The characteristics of the Wichita region's community that will be realized through achieving the goals outlined in the strategic pillars

An increased appetite for risk....

- Leads to investment in entrepreneurs and creative thinkers in the community
- Celebrates learning from failure as part of Wichita's journey
- Accelerates Wichita's position as a hub for innovation

FOCUS AREAS

The priorities that will help focus our efforts to bring the features of each strategic pillar to life

1. Increasing access to capital and non-financial resources for entrepreneurs
2. Investing in resources and community-building for the business community (entrepreneurs and intrapreneurs) to foster collaboration
3. Creating incentives and infrastructure to accelerate innovation
4. Saying "yes" to cultural and other non-traditional investments

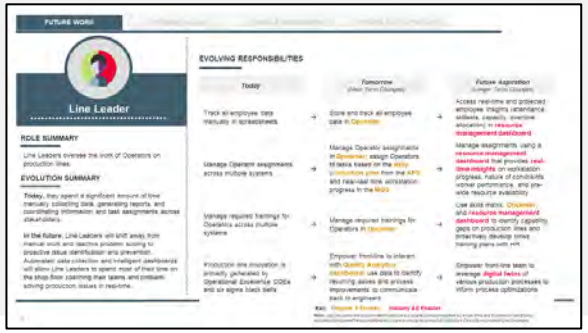
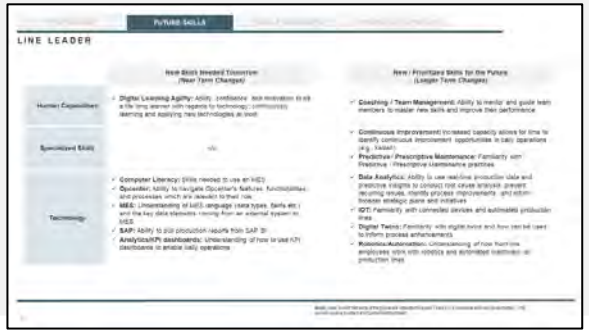
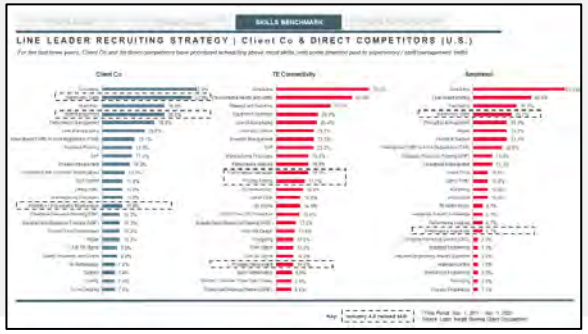
COMMITMENTS

The specific actions we will take in the next few years to drive progress against each focus area

1. Support the establishment of incubators that advance new technology development **to establish Wichita as a hub for innovation**
2. Implement a highly focused, relationship-based campaign to **encourage venture capital investment in the state's target sectors**
3. Challenge the status quo on on public investment priorities with cost/benefit analyses that include **lost opportunity cost and benefits manifested multi-generationally**, and could measure success in new ways (e.g., $$ available/appropriated, speed to access of investment $$, # and types of investors)

Appendix II: Job Canvas Library

How to read a job canvas

Section	FUTURE WORK	FUTURE SKILLS	SKILLS BENCHMARK	FUTURE DAY IN THE LIFE
				
Description	**How key responsibilities are evolving** as a result of ongoing transformations (e.g., Program X) **and the art of the possible** for how they may continue to evolve due to Industry 4.0	**New skills needed tomorrow** due to on going transformations and **new skills needed in the future** as a result of Industry 4.0	A comparison of the **top skills sourced for this role** by an organization, its **direct competitors**, and **industry 4.0 leaders**	An **imagining of a typical day** for this role **in the future**, including an **illustrative "toolbox"** of enabling technologies

Research Sources	
Deloitte Research	Deloitte's proprietary research on the Future of Work, Future of Manufacturing / Smart Operations, Future of Digital Product Development
External Research	Market research and thought leadership from non-Deloitte publications (e.g., World Economic Forum)
Deloitte Contributors	Perspectives from Manufacturing and Product Development SMEs across Deloitte who work with clients on transformations related to smart factory operations and digital product development

Job canvas findings overview

- **Deloitte's research* indicates that core responsibilities for existing roles will not change dramatically** in the future; how the work gets done (e.g., process, technology) and **skills required to do the work will change.**
- There are very **few organizations globally who have scaled smart operations across the enterprise**. The companies identified as "Industry 4.0 Leaders" are those who have successfully adapted to industry 4.0 in pockets of their organization. The **recruiting strategies for these "Industry 4.0 Leaders,"** however, **are far more advanced than Client Co.** when it comes to recruiting for the skills of the future.

TOP SKILLS TO PRIORITIZE ACROSS PD AND MANUFACTURING ROLES

Human

- Digital Learning Agility
- Intellectual Curiosity
- Appetite for Risk, Innovation, And Experimentation
- Structured / Analytical Thinking
- Business Acumen
- Story Telling With Data

Specialized

- Agile Methodology
- Design Thinking
- Design for X (CX, Manufacturability)
- Model Based Manufacturing / Engineering
- Continuous Improvement
- Predictive Maintenance
- Remote Meeting Facilitation

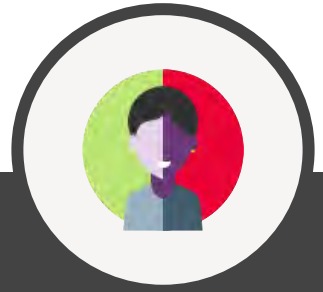
Technical

- Computer Literacy
- Data Analytics / Data Visualization
- Data Driven Decision Making
- Rapid Prototyping (e.g., Additive Manufacturing, 3D simulations)
- Simulation via Digital Twins
- Development Skills
- Industry 4.0 Tech (e.g., Robotics, IOT Sensors, AR/MR/VR)

**Note: Based on our access to a global data repository of over 30k unique sources, 6.3B records and our Future of Work data bank enabled by our propriety Data Lake tool which gathers insights and extrapolates industry trends*

Deep Dive: Manufacturing Job Canvases

Demand Planner



Demand Planner

ROLE SUMMARY

Demand Planners develop forecasting tools and perform forecasting (e.g., revenue, customer demand, materials & procurement) for products to support strategic business decisions (e.g., entering a market) and supply chain operations (e.g., production planning, inventory mgmt.).

EVOLUTION SUMMARY

Today, Demand planners sit under the Supply Chain organization and rely on traditional analytics tools (excel) to provide accurate single-point estimates based on historic trends. Forecast success is often measured by MAPE (Mean Absolute Percentage Error). Companies are starting to bring in more complex analytics tools and methodologies.

In the future, Demand planners will move towards a centralized function that supports multiple parts of the business. Companies will help lay the organizational groundwork (IT, Data Lakes, etc.) for advanced demand analytics tools (AI, Machine Learning, etc.). Planners will focus on more pre & post-analytics activities including visualization of data, communication of business impact, and advanced decision making.

EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Most demand planners still use excel (60%+) while many are starting to use more advanced analytics software (50%)	→	Anticipate demand and consistency of excel usage to remain constant. **Anticipate increase skills expectations around more advanced tools (Power BI, Python, Alteryx)** More consistent approach than ad-hoc automation of excel and spreadsheet maintenance activities. **Leveraging AI and ML tools** to automate spreadsheet activities at scale.
Demand planners focus on historic sales data (sell in / sell out data, communication from sales, and customer feedback) or basic automation of historic analyses.	→	Continue moving towards **automated historical analyses**. Demand planners will still look back at automated output and address outliers. However, goal is to move further away from manual corrections. More focus on obtaining **leading indicators to put into forecasting models** Focus less on forecasting based on a "single SKU" and focusing on amassing and applying the right indicators (e.g., jobless claims in key industries, competitor product demand)
Companies are beginning to announce and invest in AI and Machine Learning tools to support demand planning efforts. Major institutes predict AI will have the greatest impact on demand planning in next seven years.	→	Companies must lay the groundwork for AI solutions by maintaining accurate and standardized data for product numbering (product codes), maintaining consistent ways to code one-time demand spikes (for AI to learn), and maintain advance sources of external data. Companies must begin drastically change their organizational structure to ensure that there is adequate IT support for **AI solutions (physical databases or cloud storage, data lakes, enterprise layers, visualization tools, development sandboxes, etc.).**
Managers and business leaders from various departments can be resistant to AI tool outputs because there is less transparency into logic, despite being high quality.	→	Some companies need to establish more mature S&OP organizations and drive better acceptance of AI tools. AI should be framed as a driver for confronting outdated data and managerial practices. Companies should begin growing their internally upskilling efforts around AI tools with **digital learning solutions**. When selecting talent, companies should center on planners and managers alike who have experience addressing AI tool outputs.

Key: Industry 4.0 Enabler

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Demand Planner

ROLE SUMMARY

Demand Planners develop forecasting tools and perform forecasting (e.g., revenue, customer demand, materials & procurement) for products to support strategic business decisions (e.g., entering a market) and supply chain operations (e.g., production planning, inventory mgmt.).

EVOLUTION SUMMARY

Today, Demand planners sit under the Supply Chain organization and rely on traditional analytics tools (excel) to provide accurate single-point estimates based on historic trends. Forecast success is often measured by MAPE (Mean Absolute Percentage Error). Companies are starting to bring in more complex analytics tools and methodologies.

In the future, Demand planners will move towards a centralized function that supports multiple parts of the business. Companies will help lay the organizational groundwork (IT, Data Lakes, etc.) for advanced demand analytics tools (AI, Machine Learning, etc.). Planners will focus on more pre & post-analytics activities including visualization of data, communication of business impact, and advanced decision making.

EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Planners rely on tribal knowledge. Experienced planners use their learned abilities to sense disruption by looking at indicators in the market, industry, competitors, and internal capabilities.	→	Demand planners job growth is only average at (5%) so traditionally trained Demand planners with longstanding industry experience are diminishing. Demand planners should **democratize knowledge**. Successful planners should be encouraged to share nuanced knowledge so other Planners are provided with rich information. Companies should focus on accurate and consistent capture of planner feedback when systemic forecasts are overridden (due to those "gut feeling" checks). Planner feedback can be fed into **Machine Learning models** (subjective information that doesn't require demand planners to input constraints). Talent models should reward experienced planners who democratize information and feed valuable information into **ML models.**
Companies will focus on developing individual algorithms that are effective "at the time".	→	Companies should build an **"Algorithm Workbench"** with talent, resources, etc. so Demand Planners and data scientists can build **commissioned algorithms** and implement them at scale as a "patch" to existing demand algorithms. Companies should begin to structure their talent and organizational structures to support recruiting those with a combination of **development skills**, demand planning experience, etc. Build incentive models to reward effective turn of **commissioned algorithms** & positive impact on models.
Focus on basic forecasting and statistical methods: ARIMA, Holt-winters, data smoothing. Some more advanced organizations use Bayesian / probabilistic models to build range forecasts.	→	Use **simulation models** to determine reliable range of demand, building **non-parametric distribution**, and simulating demand in a short time window. If you forecast at a certain level – you can project losses "what ifs". Use of **digital twins** to allow planners to easily run and evaluate a higher fidelity simulation with extensive what-if scenarios, to optimize their forecasting models.

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Focus of system-based training is generally transactional. Users are provided process training and are expected to build an understanding of "the manual".	→	**Training needs to also focus on skills necessary to employ a tool, troubleshoot, and challenge incorrect inputs/outputs.** While training is costly and time-consuming, it will help companies avoid significant losses due to planner error (e.g., leaving unnecessary inventory sitting on balance sheet). Organizations should build mature training organizations that build capability beyond basic operation of demand planning tools. **Greater emphasis should be placed on immersive shadowing with experienced planners.**
Focus is on bringing in more advanced analytics tools and other forms of data processing, visualization, etc.	→	Focus will be on bringing in talent who best understand data, data analysis tools, and strategic priorities. Once talent is obtained, organizations must focus on building trust between talent and the tools they employ (while simultaneously teaching them the maturity to challenge data validity/relevance, to better address chaotic demand)
Demand planners typically report directly to the Supply Chain organization	→	**Move towards more centralized function that supports multiple parts of the business (with accurate demand forecasting information).** As more AI and advanced analytics solutions are brought on, demand planning efforts with need to stay close to Tech / IT organization resources.
Focus on bringing in statisticians and engineers with hard-skill experience in Python and other data visualization software.	→	Focus of demand planners is more centered on pre-and post analytics (being able to synthesize and communicate business impact). **Focus on bringing in talent with skills in advanced decision-making, synthesizing data, and analytics** (not necessarily pure technical backgrounds) Focus on embedding demand planners in multiple parts of the organization to better understand business context when presenting forecasting models.

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Adoption rates for Industrial Internet of Things (IIoT) has ticked up, aggregating sufficient data, more emphasis placed on E2E integrations.	→	Near term, emphasis will move away from just bringing in more data collection tools and more focused on cleaning and reingesting data so that any form of advanced analytics workflow can manage data in a consistent manner. **Business leaders within Tech / IT/ and S&OP must work closely to set ground rules for data collection, maintenance, and access.**

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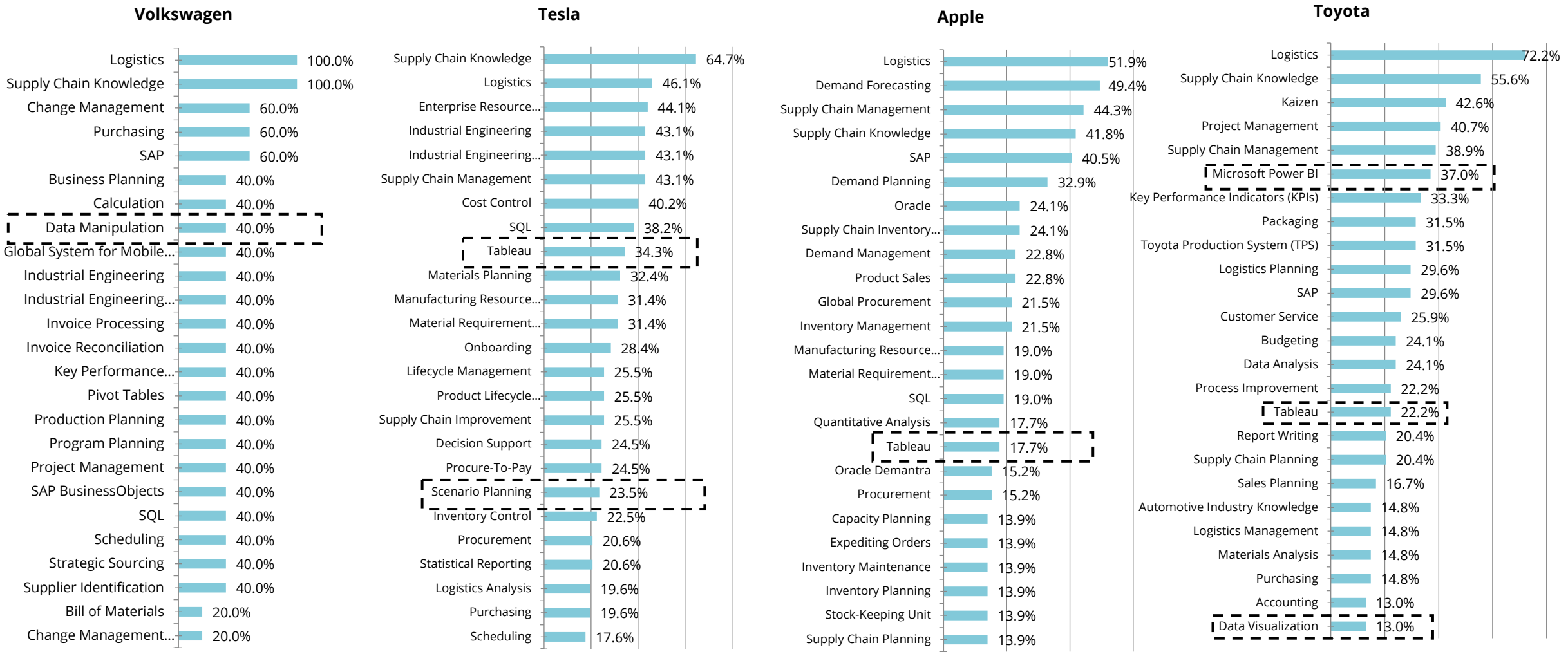
DEMAND PLANNER

	Existing Skills			*New Skills*
	Stable *What will remain table stakes?*	***In Decline*** *What will decrease in relevance / importance?*	***Growing*** *What will increase in importance?*	***Emerging*** *What net new skills will be needed?*
Human	• **Presentation skills:** Ability to present detailed inventory reports		• **Storytelling with Data**: Ability to use data to shape the business narrative and influence decisions to be made • **Creative problem-solving /problem sensitivity:** Ability to augment and refine the recommendations from predictive analytics tools	• **Remote Meeting Facilitation:** Ability to create an inclusive and productive environment during remote working sessions; Ability as a facilitator to enable cross-functional team-based decisions
Specialized	• **Logistics & Inventory Management** • **Supply Chain Management (SCM)** • **Enterprise Resource Planning (ERP)** • **Capacity Planning** • **Materials Planning**		• **Cross-functional Business Acumen:** Ability to communicate relevant impacts, align priorities, and simply articulate key findings from complex algorithms or data sets to non-technical / functional stakeholders	• **S&OE** (Sales and Operations Execution) / **Closed Loop Planning** / **Rolling Planning Horizons:** Conceptual familiarity and understanding of how to execute related processes
Technology	• **Advanced mathematical and analytical skills** • **Market Trend Analysis:** Able to identify and anticipate market trends and suggest purchases to maintain stock levels • **Business Analysis**	• **Statistical analysis:** AI solutions remove the need to manually adjust statistics • **Microsoft Excel** • **PowerPoint** • **Report Creation** • **SQL**	• **What-if Scenario Analysis** • **Data Driven Decision Making:** Ability to interpret predicted results and determine plan of action to mitigate issues before they occur • **Data Visualization:** Ability to use visualization tools like Power BI/tableau to identify and evaluate issues; understanding of how to use visualization dashboards during stakeholder discussions to drive alignment and decision making • **Advanced / predictive analytics tools:** Alteryx	• **Digital Twins / Simulation-based Scenario Planning:** Ability to use digital twins and simulation tools to develop dynamic what/if scenarios • **Data Science / Programming Skills:** Proficiencies in programming frameworks (e.g., linear programming, PuIP) and languages (e.g., python, R) needed to run advanced supply chain analytics and build simulations / visualizations • **Data Mining:** Familiarity with data mining methodologies and data reporting tools and how they can be leveraged to extract insights and calibrate supply and demand • **Database Management:** Ability to maintain accurate, secure and clean database information • **Algorithm Management:** Ability to select algorithms to automate tasks and flag exceptions or developing situations • **IOT Sensors / RFID tags:** Basic understanding of what is sensorized (e.g., what transactional data is being captured and what isn't) and how sensors work so they can trust the data

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

DEMAND PLANNER RECRUITING STRATEGY | CLIENT & DIRECT COMPETITORS (U.S.)

For the last three years, Client Co. and its direct competitors have prioritized similar legacy skills with some attention paid to robotics.



Key: Industry 4.0 related skill

[1]*Time Period: Nov. 1, 2017 – Nov. 1, 2020*

Source: Labor Insight Burning Glass Occupations

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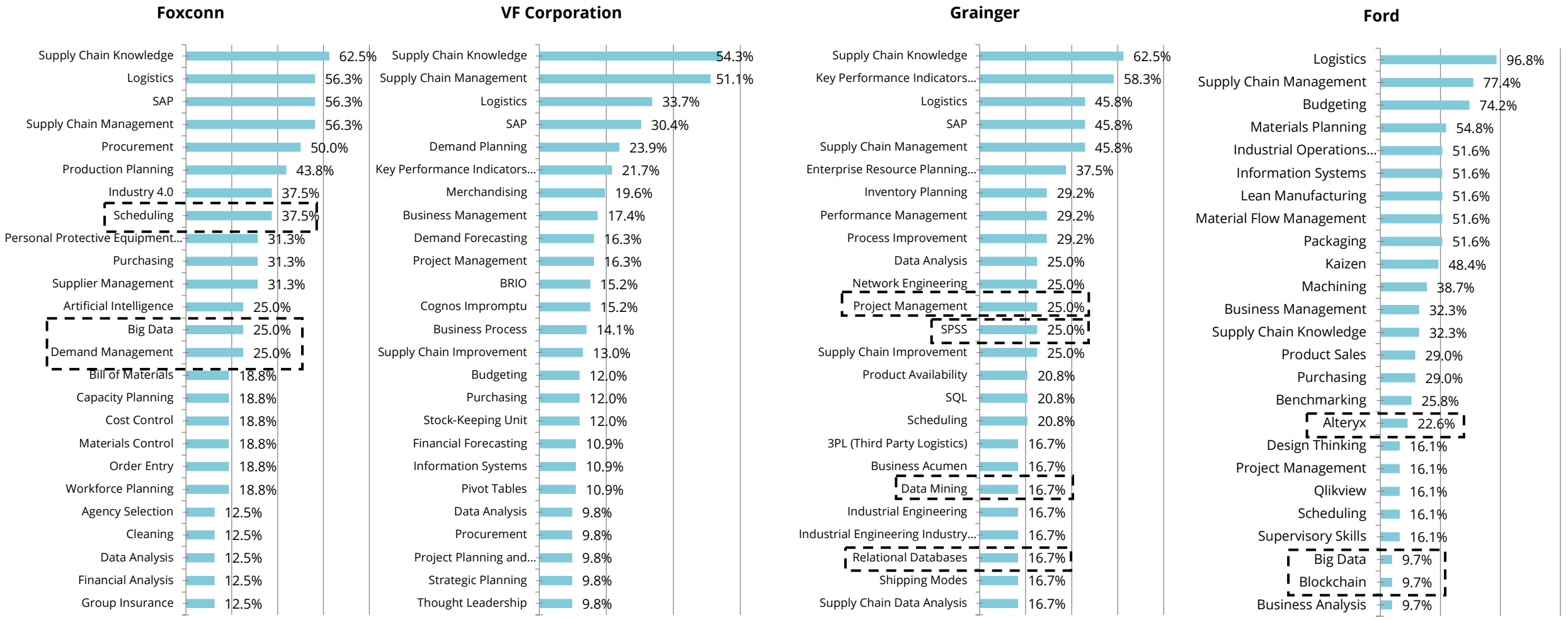

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DEMAND PLANNER

ILLUSTRATIVE TOOLBOX

Smart Dash
A predictive/prescriptive analytics tool that visualizes and analyzes live data from multiple sources to facilitate informed decision-making

PLM Dash
Integrated solution which includes requirements management, product development, change management, advanced planning, and manufacturing execution management

Forecast Vue
Machine Learning driven software that ingests hundreds of demand driving variables and create demand projections with estimations of business impact and risk. Maintains proactive scenario planning and simulation capabilities

Venus
An AI digital assistant that provides conversational interface for all productivity related tasks, such as scheduling, answering questions, and checking the status of projects and people

Elle
A digital wellbeing assistant integrated with employees' workstations, wearables, and schedules that tracks and recommends well being breaks, doctors' appointments, new learning opportunities, and time-off

FUTURE DAY IN THE LIFE

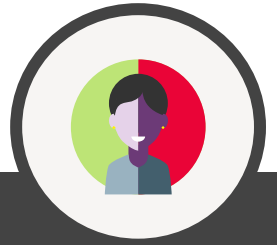
7:30 am	You serve as a remote demand planner for multiple business functions. As part of a mature digital org, you work on an integrated team which includes a variety of different planners, sales, and IT. As you wake up, you are greeted by **Venus** which reads out your morning schedule, priority tasks, and provides an update of the number of new, unread emails in your inbox, along with the number of action items flagged and added to your Smart To Do list. Today is the start of an important week (the first of the month), where the team will review the previous month's forecasting models and evaluate necessary adjustments.
8:00 am	You start the day off with internal touchpoints with your team to prepare for your Thursday S&OP meeting. You pull up your access to the **Forecast Vue** to look over the demand plan. You analyze historicals, lost sales, etc. in real time. You are alerted of any demand exceptions with correction recommendations. You check relevant outlier corrections to demand through semi-automated processes. You also review a variety of inputs from **PLM Dash**, your company's preferred product strategy and lifecycle management tool. The system incorporates item profiles and attributes for new items using ML.
9:45 am	Due to the time saving functionalities of **Forecast Vue**, your digital assistant **Elle** works in an extra 15 minute break into your schedule ahead of your remaining work in the morning. You can spend this time getting coffee, water, and getting up from a seated position.
10:30 am	You view tool-generated product segmentations based on their demand behaviors and curves (e.g., stable, growth / decline trend, seasonal, no trend). Depending on cognitive based clustering, regular cadences could be changed by item behavior (e.g., core items forecasted on a monthly cadence). After you have consolidated all insights, you apply statistical models. You use **Forecast Vue's** internal tools to manage these insights. For any exceptions (high error), you apply manual adjustments, eventually training the models to apply these adjustments automatically. When you discover a need that is not yet address by automated systems you can put in a new request to the company's internal algorithm service desk. After final review of the content, you load into **Forecast Vue** and review the model in preparation for consensus meetings that you lead later in the week.
1 pm	After working throughout the morning, **Elle**, your digital wellbeing assistant, recommends you take an additional break for lunch.
2 pm	After lunch, **Elle** recommends that you take the early afternoon as an opportunity to attend an early exposure digital training course on new **Forecast Vue** functionalities, more machine learning driven technologies that your company is testing out.
3 pm	After your training, you take a quick look at **Smart Dash** which is currently relaying live data on your forecast model efficiency from last month. You use this as an indicator on what to assemble in terms of content for the monthly S&OP meeting where you will be presenting both the review of last months performance but also pitching the new data inputs intended for the demand planning software. You also take this afternoon to meet with your integrated team of finance, IT, and sales to layer in hyper-digital insights from financial plans to drive an unconstrained demand plan. Because you are working off an integrated system, you don't need to communicate with the Supply Planner offline to discuss the demand plan.
4 pm	You spend the final parts of your day reviewing dashboard materials that you've assembled for your internal team touchpoints tomorrow. Software, like **Forecast Vue** will allow Demand Planners to use existing dashboards as opposed to spending additional time creating external Powerpoint decks. You plan to review the dashboard content directly off the system with your sales and marketing teammates. Venus lets you know that you've accomplished your priority tasks for the day. **Elle** recommends that you end your day.

Note: *The Future Day in the Life is not meant to capture every task a role may execute in the future; it is intended to describe select tasks / ways of working which are evolving as a result of Industry 4.0 trends and enabling technologies*

Technical Toolbox Research

Job Canvas Tool	Description	Examples / Research Links
Forecast Vue	Machine Learning driven software that ingests hundreds of demand driving variables and create demand projections with estimations of business impact and risk. Maintains proactive scenario planning and simulation capabilities	• Blue Yonder
PLM Dash	Integrated solution which includes requirements management, product development, change management, advanced planning, and manufacturing execution management	• Siemens OpCenter MES • APS • TeamCenter • Polarion

Supply Planner



Supply Planner

ROLE DESCRIPTION

Supply Planners anticipate and maintain inventory levels against demand and production capacity to allocate to orders and the right products over a planning horizon.

EVOLUTION SUMMARY

Today, daily planning tasks (e.g., data collection / verification, decision making, report creation) are manual and time-consuming. Planners are constantly fire fighting to plan and schedule products and rely heavily on tribal knowledge and static reports to make decisions.

In the future, **RPA, smart algorithms,** and **IOT sensors** will automate 80-90% of daily planning tasks, focusing planners' time on higher value work like exceptions management, algorithm management, scenario planning, and cross-functional stakeholder alignment. Planners will contribute to the **S&OE process** on a weekly rhythm, using **digital twins** to build dynamic planning scenarios flexible to changing demand or supply situations. **Smarter data collection** and **predictive analytics tools** will reduce uncertainty and forecast errors and improve overall decision making.

EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Spend significant time trying to keep up with the high volume of manual decisions that need to be made every day to plan and schedule products	→	Spend less time "fire-fighting" thanks to **advanced planning systems** and **Robotic Process Automation** of 90% of daily tasks and decisions; focus time on exception management, enabled by **smart algorithms** that flag instances when human input is required for better decision making
Spend significant time manually collecting, inspecting, and reconciling data as a result of poor master data management and limited integration across organizational silos and legacy systems	→	No longer spend time on data management due to continuous **sensor-based** data collection and **RPA** enabled data inspection / reconciliation; leverage data in **advanced planning system** as the single source of truth for operational data across the organization
Make planning decisions by manually reviewing the available information and relying on tribal knowledge to determine next steps	→	Make planning decisions based on findings from **predictive analytics tools** that analyze real-time and historical operational data across the organization; focus efforts on refining recommendations, when needed
Use safety stock formulas in excel and/or legacy ERP systems (e.g., SAP) to calculate inventory levels needed to protect against demand/supply uncertainty and forecast errors	→	Use **machine learning algorithms, predictive analytics tools** and **closed loop planning** to significantly reduce demand / supply uncertainty and forecasting errors and to determine detailed inventory requirements by region, location and usage; minimize safety stock safety stock levels across the organization by placing inventory where its required
Rely on static reports and tribal knowledge to align supply and demand	→	Use real-time **sensor-based** operational data and **predictive analytics tools** to predict optimal plan or schedule, manage costs with greater accuracy, and reduce disruptions that occur from too much / too little supply

Key: **Industry 4.0 Enabler**

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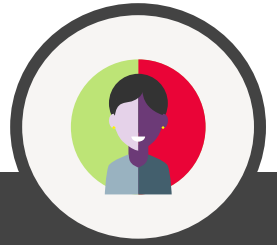

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Identify the need to recalibrate supply and demand in reaction to issues that arise; rely on static reports and tribal knowledge to determine mitigation plan	→	Receive **automated exceptions-based alerts** that proactively identify gaps before issues arise; leverage **advanced predictive analytics tools** to determine if the current plan or schedule is no longer optimal / buildable and **digital twins** to simulate and evaluate multiple plan or issue resolution scenarios
Build supply planning scenarios using macros in excel and static data inputs	→	Use **digital twins** and **sensor-based** operational data to build dynamic planning scenarios that can be updated in real time based on changing demand or supply situations
Contribute to a monthly or yearly S&OP (Sales and Operations Planning) process over the planning horizon	→	Contribute to a **weekly S&OE** (Sales and Operations Execution) process over a **rolling planning horizon** that adapts in real-time to changing requirements or constraints, as indicated by real-time **sensor-based** operational data
Carry out daily tasks on-site at a desktop	→	Use **smart phone** and **tablet-friendly planning dashboards** powered with a continuous flow of real time operational data across the organization to work virtually from anywhere
Collaborate with non-planning functions on a limited basis (e.g., align requirements, meet tight deadlines) due to the high effort involved with sharing information across organizational siloes and reconciling static data across disparate systems; make decisions with little consideration of impacts on other functions (e.g., marketing, finance)	→	Gather inputs and impacts across non-planning functions as part of the integrated planning process using a **cloud-based planning platform** that automatically tells you who to work and what inputs are needed, while delivering one source of truth for all supply chain data across the organization

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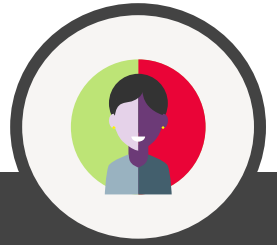

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Use power point decks to run the weekly / monthly planning and business performance review meetings; conduct follow up sessions as needed to investigate and answer management questions (e.g., root causes of gaps, actions being taken to close the gaps, and financial trade-offs)	→	Conduct planning meetings directly in the **APS dashboard**, generating real-time reports using **natural language queries**, evaluating what-if scenarios on the fly, and instantly pulling up real-time operational data across the organization as needed

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EVOLVING SKILLS PROFILE

	Existing Skills			*New Skills*
	Stable	***In Decline***	***Growing***	***Emerging***
People	• **Presentation skills:** Ability to present detailed inventory reports		• **Storytelling with Data**: Ability to use data to shape the business narrative and influence decisions to be made • **Creative problem-solving /problem sensitivity:** Ability to augment and refine the recommendations from predictive analytics tools	• **Remote Meeting Facilitation:** Ability to create an inclusive and productive environment during remote working sessions; Ability as a facilitator to enable cross-functional team-based decisions
Specialized	• **Logistics & Inventory Management** • **Supply Chain Management (SCM)** • **Enterprise Resource Planning (ERP)** • **Capacity Planning** • **Materials Planning**		• **Cross-functional Business Acumen:** Ability to communicate relevant impacts, align priorities, and simply articulate key findings from complex algorithms or data sets to non-technical / functional stakeholders	• **S&OE** (Sales and Operations Execution) / **Closed Loop Planning** / **Rolling Planning Horizons:** Conceptual familiarity and understanding of how to execute related processes
Technical	• **Advanced mathematical and analytical skills** • **Market Trend Analysis:** Able to identify and anticipate market trends and suggest purchases to maintain stock levels • **Business Analysis**	• **Statistical analysis:** AI solutions remove the need to manually adjust statistics • **Microsoft Excel** • **PowerPoint** • **Report Creation** • **SQL**	• **What-if Scenario Analysis** • **Data Driven Decision Making:** Ability to interpret predicted results and determine plan of action to mitigate issues before they occur • **Data Visualization:** Ability to use visualization tools like Power BI/tableau to identify and evaluate issues; understanding of how to use visualization dashboards during stakeholder discussions to drive alignment and decision making • **Advanced / predictive analytics tools:** Alteryx	• **Digital Twins / Simulation-based Scenario Planning:** Ability to use digital twins and simulation tools to develop dynamic what/if scenarios • **Data Science / Programming Skills:** Proficiencies in programming frameworks (e.g., linear programming, PulP) and languages (e.g., python, R) needed to run advanced supply chain analytics and build simulations / visualizations • **Data Mining:** Familiarity with data mining methodologies and data reporting tools and how they can be leveraged to extract insights and calibrate supply and demand • **Database Management:** Ability to maintain accurate, secure and clean database information • **Algorithm Management:** Ability to select algorithms to automate tasks and flag exceptions or developing situations • **IOT Sensors / RFID tags:** Basic understanding of what is sensorized (e.g., what transactional data is being captured and what isn't) and how sensors work so they can trust the data

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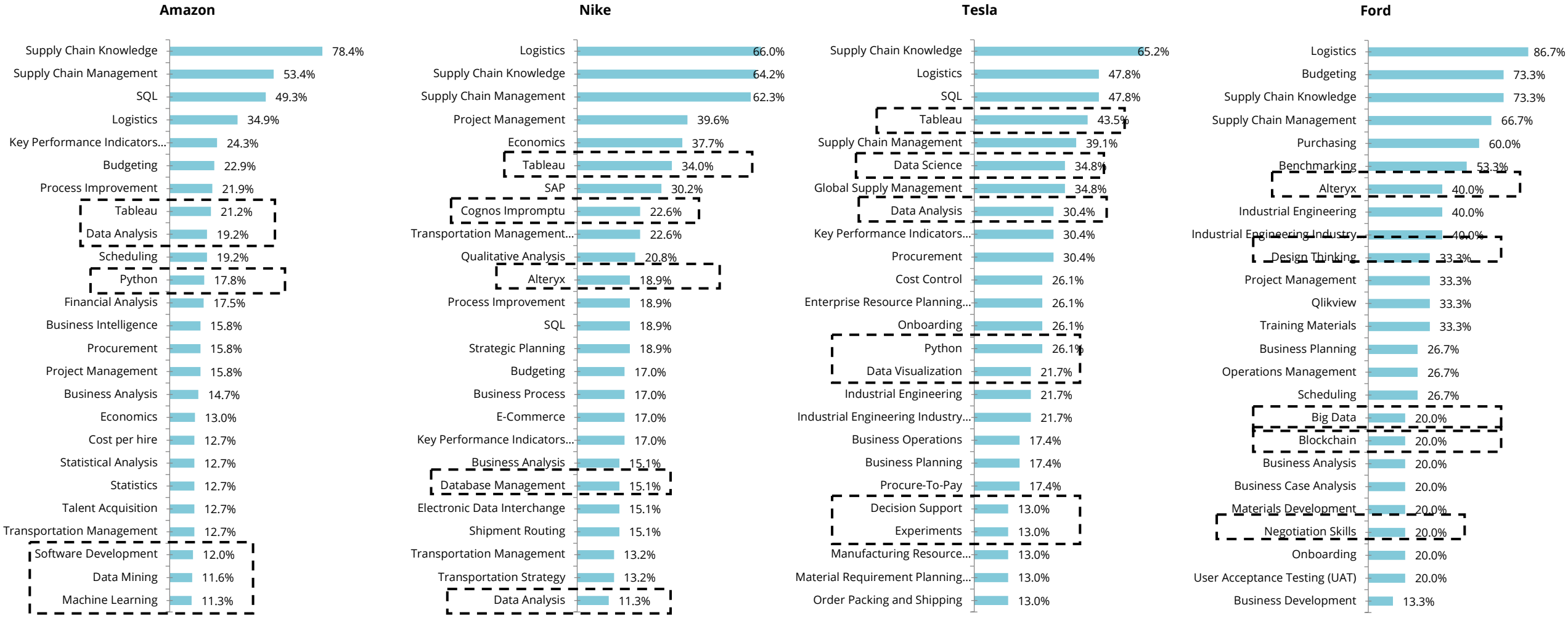
INDUSTRY 4.0 LEADERS' (U.S.) RECRUITING STRATEGIES

Industry leaders' recruiting strategies for the last three years have placed greater emphasis on hiring talent skilled in data analytics & visualization.



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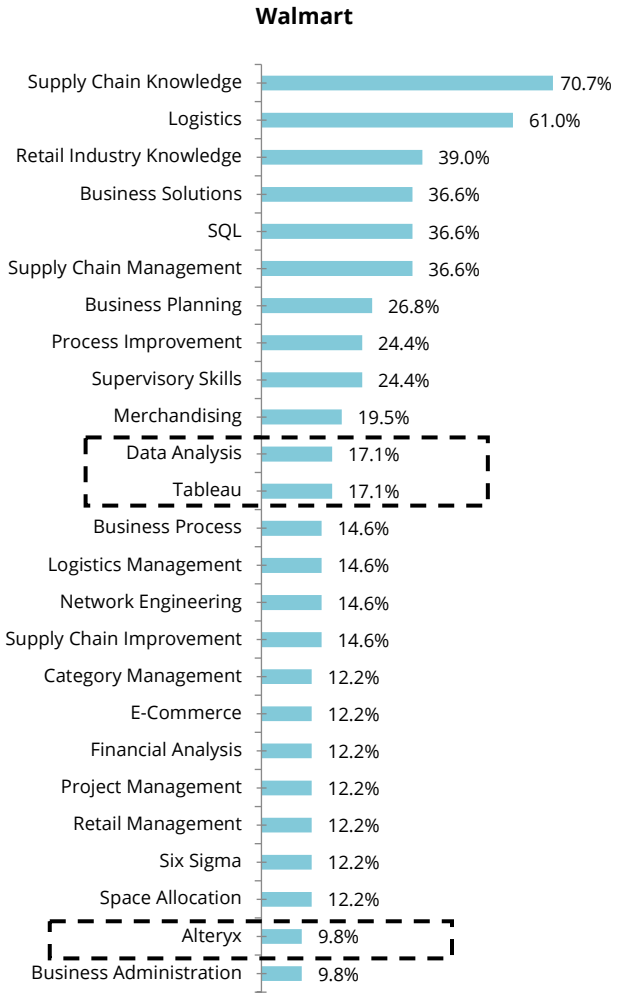

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ILLUSTRATIVE TOOLBOX

Power Vue
AI-powered, cloud-based, APS dashboard that enables faster and smarter decisions by bringing together graph-based enterprise modeling, big data lakes, predictive analytics, advanced algorithms for scenario planning, and collaborative portals all into easy-to-use web, mobile and spreadsheet interfaces

Orbit
AI predictive analytics tool used to proactively identify issues and optimize decision making

FUTURE DAY IN THE LIFE

8 am	As a supply planner for multiple sites, you have the convenience of working from home or the office. Today, you start your day from home by logging into the company network and opening the **Power Vue** for the Detroit site. You view end to end data including: unconstrained forecast at style color/size level, raw material and finished goods On-Hand / WIP at all locations (country, region, DCs), in-transit and on order inventory, vendor and transit lead times, and factory capacities. Finally, you review the list of proposed orders and place your orders for the time period. Based on your ordering, the system automatically coordinates inventory requests with suppliers and schedules deliveries at the warehouse.
9:15 am	You receive a notification from **Power Vue** that reminds you to prepare for your first meeting of the day: an S&OP meeting. The meeting notification includes relevant alerts and information related to capacity levels at the plant and suppliers, forecasted demand, and supply imbalances.
9:30 am	During the S&OP meeting, you use natural language queries to quickly generate reports to answer business stakeholders' ad-hoc questions. Within **Power Vue**, you present the dynamic scenarios you developed for a few different plans under review. You leverage the network's digital twin to simulate execution and highlight risks and opportunities. The team decides together on the best course of action, which you record live directly in the system to ensure proper execution.
1 pm	After lunch, you receive an alert from **Power Vue** on your phone that due to a port strike, the current plan may no longer be optimal. You log in to investigate the issue further. You pull up real-time data on orders, forecasts, and inventories, and review the systems recommended mitigation plan. You create several what-if scenarios to evaluate trade-offs, options, an and critical KPIs. Within minutes, you determine the best course of action and push the chosen scenario live with a single click.
3 pm	You receive a system-generated risk alert from **Orbit** notifying you of a predicted inventory risk due to high sales. You review the prescriptive safety stock recommendations based on demand and lead time variability and take proactive, targeted inventory deployment actions to mitigate risks well before they materialize.
4 pm	You receive a notification from **Power Vue** that Eric, the demand planner, has pushed through a global, unconstrained, consensus demand plan that captures need by brand. This plan has automatically been integrated into the supply planning system so no additional action is required from you.

Note: *The Future Day in the Life is not meant to capture every task a role may execute in the future; it is intended to describe select tasks / ways of working which are evolving as a result of Industry 4.0 trends and enabling technologies*

SUPPLY PLANNER

Technical Toolbox Research

Job Canvas Tool	Description	Examples / Research Links
Power Vue	AI-powered, cloud-based, APS dashboard that enables faster and smarter decisions by bringing together graph-based enterprise modeling, big data lakes, predictive analytics, advanced algorithms for scenario planning, and collaborative portals all into easy-to-use web, mobile and spreadsheet interfaces	O9 Kinaxis Rapid Response
Orbit	Digital twin simulation tool that integrates with real-time system data	Noodle AI

Maintenance Manager

Maintenance Manager

ROLE SUMMARY

Maintenance Managers execute and coordinate maintenance activities for production equipment and tooling.

EVOLUTION SUMMARY

Today, asset management strategies and calendars are created based on limited historical performance data. Maintenance activities are highly reactive and executed using manual processes.

In the future, they will execute proactive and predictive maintenance of IOT enabled assets using smart wearables, 3D simulations, and intelligent asset performance dashboards enabled by advanced analytics.

EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Monitor asset health (e.g., compliance, criticality, reliability, integrity, corrosion, performance) by conducting manual inspections and relying on Operator feedback	→	Monitor asset health using **real-time and predictive insights** and alerts from **asset performance dashboards** powered by **AI, ML,** and **asset sensors**
Use a reactive "break-fix" approach to asset maintenance	→	Execute **predictive maintenance** activities and proactively schedule downtime using **AI and sensor enabled asset performance dashboards** that provide real time asset location, conditions, and failure predictions before they happen
Manually inspect assets using a tablet and skills learned through tribal knowledge	→	Conduct visual inspections using **AR goggles** powered by **AI and Deep Learning** image recognition to quickly identify features that are out of specification and to detect quality defects

Key: Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Develop asset management strategy based on experience and limited historical performance data	→	Use **digital twins, 3D simulations, and sensor data** and simulate conditions, develop what-if scenarios to optimize asset strategy
Manually identify assets that need to be replenished or removed	→	Create and maintain **algorithms** that enable things such as whole-life costing (so that underperforming assets can be identified and removed) and maintenance spare parts' inventory optimization
Assets often fail without warning and resources must be redirected without notice	→	Dynamic management and allocation of maintenance personnel resource based on **predictive failure alerts** from **AI and sensor enabled asset performance dashboards**

Key: Industry 4.0 Enabler

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EVOLVING RESPONSIBILITIES

Today		*Tomorrow*
Track warranties and warranty claims in offline, localized spreadsheets	→	Leverage **KPI dashboard** to track and pull automated reports related to warranties and warranty claims
Optimize IOT enabled assets' resiliency following failures, based on incidents reports	→	Support **stress test experiments** (e.g. network outages, privacy breaches, system failures) to find and mitigate potential risks and build more secure and reliable IOT enabled assets

Key: Industry 4.0 Enabler

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MAINTENANCE MANAGER

	Existing Skills ***Growing*** *What will increase in importance?*	***New Skills*** ***Emerging*** *What net new skills will be needed?*
Human	✓ **Digital Learning Agility:** Ability, confidence, and motivation continuously learn and apply new technologies at work	✓ **Remote Meeting Facilitation:** Ability to create inclusive and productive remote meeting environments where people are encouraged to challenge ideas and focus on optimal decision making over consensus building
Specialized	*n/a*	✓ **Predictive / Prescriptive Maintenance:** Familiarity with Predictive / Prescriptive Maintenance practices ✓ **Continuous Improvement:** Able to think strategically about how the APM dashboard can be improved and be further leveraged to optimize asset management strategy
Technology	✓ **Computer Literacy** ✓ **MES:** Ability to use MES to perform shop floor inspection activities ✓ **Analytics/KPI Dashboards:** Understanding of how to use KPI dashboards to enable daily operations	✓ **Data Driven Decision Making:** Ability to make data-driven decisions using asset performance dashboards which provide real-time and predictive insights using AI and asset sensors ✓ **Cyber Security:** Understanding of basic cyber-security principles and vulnerabilities related to connected devices ✓ **Algorithms:** Ability to create and maintain asset management algorithms ✓ **AR/MR/Wearables:** Ability to use AR/MR goggles for visual asset inspections ✓ **Digital Twins:** Ability to do scenario modeling using digital twins to optimize asset strategy

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

No Equivalent Roles for Skill Analysis Available

Key: Industry 4.0 related skill

[1]*Time Period: Nov. 1, 2017 – Nov. 1, 2020*
Source: Labor Insight Burning Glass Occupations

MAINTENANCE MANAGER

ILLUSTRATIVE TOOLBOX

Asset View
An asset performance dashboard that provides real-time equipment health, location, maintenance alerts, predictive insights, and end-of-life calculations for physical assets

WeAR
AR/MR glasses that project instructions, images, and videos directly on the lens, use vision picking/image recognition to support shop floor tasks, and present live feeds of the user's field of view for remote support

Venus
An AI digital assistant that provides conversational interface for all productivity related tasks, such as scheduling, answering questions, and checking the status of projects and people

OptiCrew
Intelligent resource management dashboard that integrates with performance dashboards to track task completion and production constraints and enable dynamic resource management/allocation

Elle
A digital wellbeing assistant integrated with employees' workstations, wearables, and schedules that tracks and recommends well being breaks, doctors appointments, new learning opportunities, and time-off

FUTURE DAY IN THE LIFE

5 am	You start your day at 5 am. You prepare breakfast while Venus reads aloud your meetings for the day and your prioritized tasks list. **As you get dressed, Elle reminds you of your fitness goal to cycle to the office once a week.** You decide to go for it today so you dress accordingly, packing a change of clothes for after you arrive on site.
6 am	Once you arrive on site, you quickly change into your work apparel. You then head to your workstation and log in. This automatically notifies your team you are in office and simultaneously relieves the person who just finished the night shift of their duties. **You open Asset View to review the incidents that occurred during the prior shift.** You review what happened, why it happened, and what actions were taken, as recorded by the sensors. You then review Asset View's recommended next steps which have automatically been added to your list of priorities for the day in OptiCrew.
7 am	In the midst of a maintenance task, **you receive a notification from OptiCrew** that you have been assigned to a new task. The notification informs you that one of the grinders on the shop floor is performing irregularly and may breakdown in less than 24 hours. You accept the task and turn your attention to this imminent concern. You review the data insights from Asset View to determine the optimal course of action. Wearing your WeAR glasses, you use robotic arms to begin troubleshooting and repairing the asset while maintaining a safe distance from the malfunctioning machine.
9 am	A couple hours into repairing the malfunctioning machine, you receive an alert from Elle notifying you that your wearable detects fatigue and suggests that you take a break.
1 pm	After lunch, you and your supervisor head into a meeting with the cyber-security team who is working on designing an upcoming stress test aimed at rooting out the security vulnerabilities of a new smart forklift. The cyber team is in the early phases of designing the stress test and has asked you and your supervisor to join this meeting to help explain how the smart lift works. During this meeting **you explain the functionalities of the smart forklift** and answer some questions on how you believe the asset would malfunction under different scenarios.
3 pm	At the end of the day, you receive an automated report from Asset View with a list of assets whose predictive insights indicate they will need inspection and repair in the next week. Based on your projected capacity for the week, **OptiCrew has automatically assigned you two of these maintenance tasks**. You accept both tasks which prompts OptiCrew to reprioritize your weekly task list accordingly.

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Manufacturing Engineer

Manufacturing Engineer

ROLE SUMMARY

Manufacturing Engineers sit between design and production. They plan and create production processes and ensure production has the appropriate design information needed to build products and tools.

EVOLUTION SUMMARY

Today, they do planning and workflow modelling after receiving design specifications from design. Most of their time is spent searching for and sharing information, reacting to product failures, and trying to keep up with engineering releases.

In the future, they will participate in all agile design iterations to inform product design for manufacturability. They will use digital twins to optimize planning activities and simulate production floor processes/layouts. They will use annotated 3D models to digitally collaborate with design and production. IOT sensors will enable proactive management and prevention of product failures.

EVOLVING RESPONSIBILITIES

Today	***Tomorrow*** *(Near Term Changes)*	***Future Aspiration*** *(Longer Term Changes)*
Spend excessive amounts of time coordinating between design and production teams to locate latest information, documents, and revisions which are housed in disparate systems	→ Use **MES** as source of truth for all current and historical product and production data (e.g., approved drawings, costing information, work instructions, labelling information) across plants	→ Leverage **3D models** as the source of truth for the latest product definition and PMI
Focus energy on trying to keep up with engineering releases from product development to create new work instructions; role is highly reactive and under a lot of pressure	→ Spend less time "fire-fighting"; **MES's** data integration and workflow automations create capacity for value add activities (e.g., cross-functional data reviews for production readiness)	→ Proactively manage issues; establish **condition based alerts** and work with Quality Engineers to develop **predictive models** to prevent failures for new products
Document data, manage production processes, and house CAD models of production floor layouts in disparate systems	→ Use **MES** to manage/create all process workflows, production resources, automations, and labeling data; maintain 3D CAD models of shop floor layouts in **PLM**	→ Create **digital twins** of all manufacturing processes and production floor layouts

Key: Industry 4.0 Enabler

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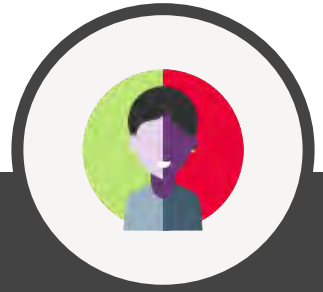

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EVOLVING RESPONSIBILITIES

Today	***Tomorrow*** *(Near Term Changes)*	***Future Aspiration*** *(Longer Term Changes)*
Leverage **ERP** to track and ensure correct product and routing revisions are used on the shop floor	→ Leverage **MES** to track and ensure the correct product and routing revisions are used	→ Rely on **IOT sensors** to track and ensure correct product and routing revisions are used; when incorrect routings re identified, the system uses **ML** to self-adapt
Spend hours coordinating with process engineers on planning activities and workflow modeling (e.g., allocation / capacity planning, floor layout, tool set up)	→ Historical process information can be leveraged to expedite planning activities and workflow modeling in **MES**	→ Communicate with process engineers using **digital twins** to optimize planning activities and workflow modeling; cut down on email exchanges with remote engineers by making changes directly in the model
Leverage **ERP** for overall traceability and to ensure process compliance (e.g., materials certification, batch management)	→ Access detailed model and routing information in **MES** and summarized routing information for financials in **ERP**	→ Use **blockchain** for materials certification and batch management

Key: **Industry 4.0 Enabler**

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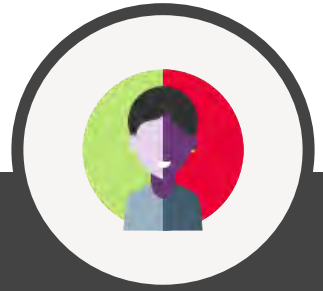

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EVOLVING RESPONSIBILITIES

Today	***Tomorrow*** *(Near Term Changes)*	***Future Aspiration*** *(Longer Term Changes)*
Participate in design reviews on an ad-hoc basis that is event driven (e.g., manufacturability assessments for new/unique parts, new releases, customer complaints); provide downstream prototype feedback to design engineers after products go into production	→ *[no changes expected]* →	Have formalized role during all **agile design iterations** to provide feedback on design for manufacturability (review **virtual and 3D printed rapid prototypes,** create **digital twins** of all manufacturing processes before initial setup and test, leverage **IOT sensors** in the field/shop floor to understand failure rates and failure forms to inform design for manufacturability)

Key: Industry 4.0 Enabler

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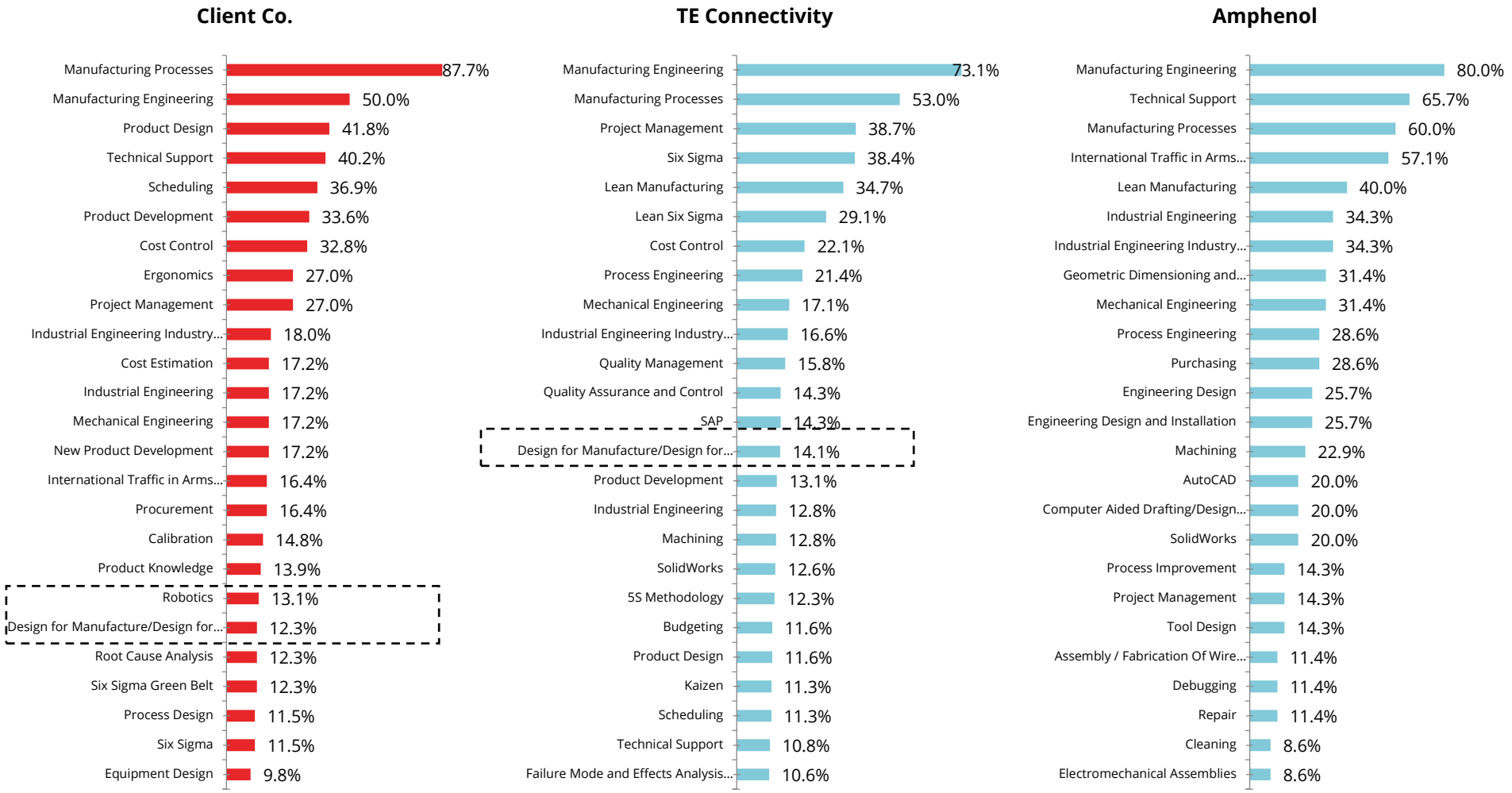
EVOLVING SKILLS PROFILE

	Existing Skills			*New Skills*
	Stable *What will remain table stakes?*	***In Decline*** *What will decrease in importance?*	***Growing*** *What will increase in importance?*	***Emerging*** *What net new skills will be needed?*
Human	✓ **Communication Skills** ✓ **Quantitative & Qualitative Thinking** ✓ **Teamwork / Collaboration** ✓ **Troubleshooting**	**n/a**	✓ **Digital Learning Agility:** Ability, confidence, and motivation continuously learn and apply new technologies at work	✓ **Remote Meeting Facilitation:** Ability to create inclusive and productive remote meeting environments where people are encouraged to challenge ideas and focus on optimal decision making over consensus building
Specialized	✓ **Manufacturing Processes** ✓ **Production Scheduling** ✓ **Cost Control** ✓ **Product Engineering** ✓ **Product Lifecycle Management** ✓ **New Product Introduction** ✓ **Production Support** ✓ **Continuous Improvement** ✓ **Business & Enterprise-wide Awareness** ✓ **Customer / Channel Knowledge**	✓ **Computer Numerical Control (CNC)** ✓ **Process Engineering** ✓ **Six Sigma** ✓ **Auto CAD** ✓ **Machining** ✓ **Lean Manufacturing**	*n/a*	✓ **Agile Methodology:** Understanding of how to participate as a member of an agile team ✓ **Design for Manufacturability** ✓ **Customer Focus / Design for CX:** Ability to empathize with customer experience and think critically about how design decisions address customer needs and pain points ✓ **Model Based Manufacturing:** Understanding of related concepts and technologies; ability to use 3D models to collaborate digitally across value chain
Technology	✓ **Master Data Management** ✓ **Systems Knowledge** ✓ **Data Analysis & Reporting** ✓ **Supply Chain Performance / Metrics** ✓ **Technical Writing** ✓ **Technical Learning**	✓ **Microsoft Office** ✓ **Technical Support**	✓ **PLM / MES:** Ability to navigate PLM / MES's features, functionalities, and processes which are relevant to their role ✓ **MES:** Understanding of MES language (data types, fields etc.) and data fluency (how information flows from ERP and external systems to MES) ✓ **ERP:** Ability to use ERP for the creation of Routings and Work centers	✓ **Data Driven Decision Making:** Ability to interpret data insights provided by digital twins and IOT sensors and make informed decisions ✓ **Robotics:** Ability to design workflows based on understanding of how humans interact with robots at work ✓ **Digital Twins:** Ability to create virtual models of production lines, factory layouts, and process flows to predict failures and production outcomes ✓ **Rapid Prototyping, 3D Models, Additive Manufacturing**: Ability to collaborate iteratively with design teams and advise on manufacturability of physical and virtual protypes

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

MANUFACTURING ENG. RECRUITING STRATEGY | CLIENT & DIRECT COMPETITORS (U.S.)

For the last three years, Client Co. and its direct competitors have prioritized similar legacy skills with some attention paid to design for manufacturability; Client Co. appears to be ahead of direct peers in its prioritization of robotics.



Key: Industry 4.0 related skill

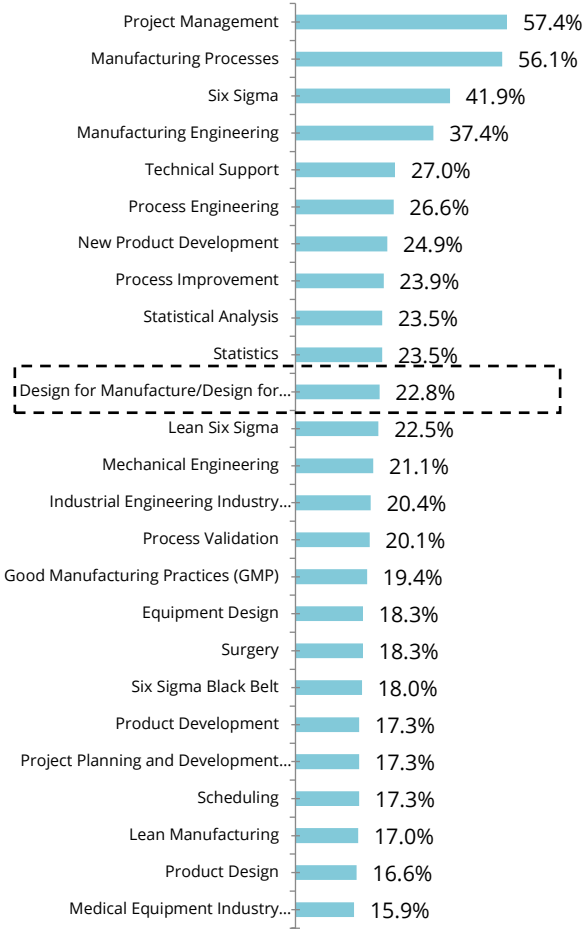
[1]*Time Period: Nov. 1, 2017 – Nov. 1, 2020*

Source: Labor Insight Burning Glass Occupations

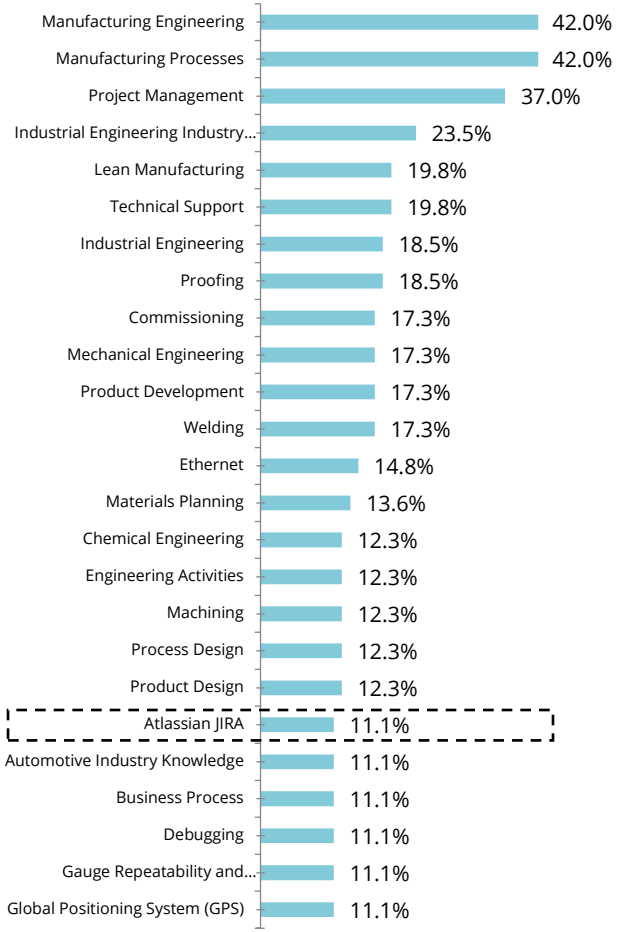
MANUFACTURING ENG. RECRUITING STRATEGY | INDUSTRY 4.0 LEADERS (U.S.)

Industry leaders' recruiting strategies for the last three years have placed similar emphasis on hiring Manufacturing Engineers with industry 4.0 skills such as design for manufacturability, and greater emphasis on hiring engineers with project management experience.

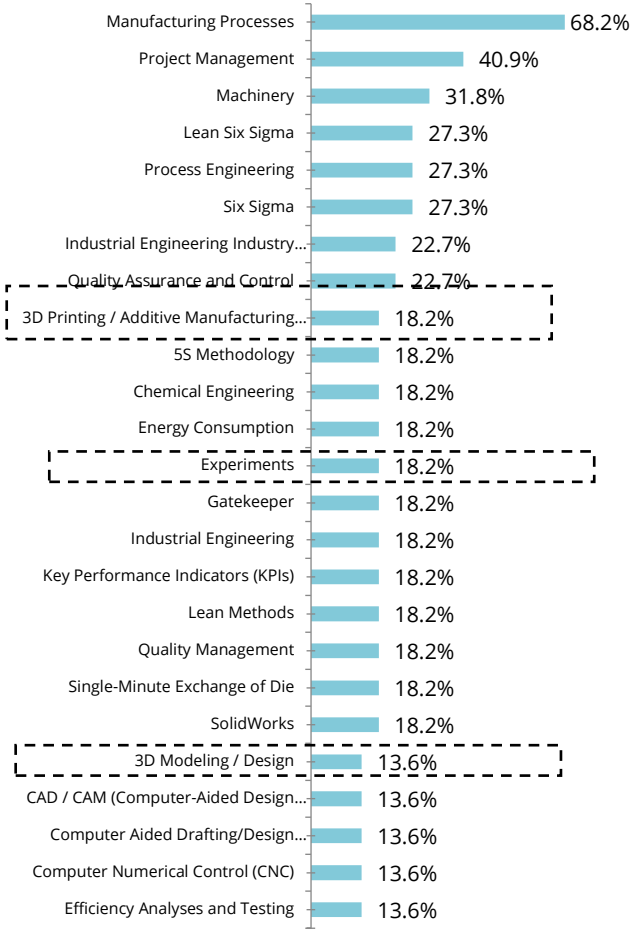
Johnson & Johnson



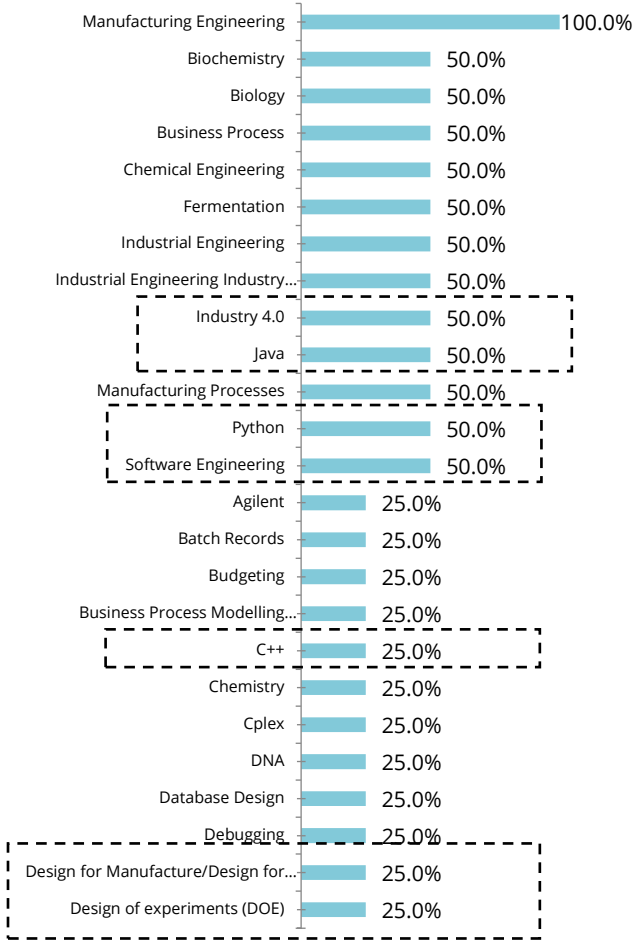
Ford



Nike



Zymergen



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Manufacturing Engineer

ILLUSTRATIVE TOOLBOX

Production Trak
A dashboard that tracks production processes, identifies abnormalities, and predicts bottlenecks using IOT sensors, AI, and machine learning

Immersive
VR development environment used to create virtual models and experiences (e.g., conceptual factory layouts, machine assemblies, and product demos) for internal and external stakeholders; enables real time collaboration on digital 3D designs and images

Venus
An AI digital assistant that provides conversational interface for all productivity related tasks, such as scheduling, answering questions, and checking the status of projects and people

FUTURE DAY IN THE LIFE

6:30 am	You wake up, get dressed, and make some breakfast for yourself and your kids. While dropping the kids off to school, you have **Venus** read aloud your calendar and prioritized tasks for the day.
8 am	You arrive on site and head to the daily 15 min. scrum with the agile team of designers, test engineers, data analysts and fellow Manufacturing Engineers with whom you are working with to design and develop a new product. On your ipad, you pull up your daily status report while the Product Manager provides status updates and discusses unexpected issues surfaced by the team.
10 am	Your first working session is with Michelle, a design engineer out of Rochester Hills with whom you are collaborating with to design a new power connector. In preparation for this meeting, you pull up the digital twin of the manufacturing process in **Immersive** which you have created for the new product's component designs. You open the analysis tab to review the highlighted manufacturability issues with each design option, as well as the recommended production methodologies that would help reduce manufacturability issues and cost overruns.
11 am	During your meeting with Michelle, you review the digital twin's insights for each design option and discuss the cost reduction opportunities associated with the different production methodologies. Since the financial trade-offs between the production processes have big implications for a product's overall cost structure, you ask **Venus** to set a follow up this afternoon with Jim, the Product Manager.
1 pm	After lunch, you receive a **Production Trak** notification from an Operator with a real-time suggestion on how to improve a production process for one of the products you are responsible for. You approve the recommendation and Production Trak sends a notification to the technical writing team to push through an automatic update for all related SOPs.
3 pm	At the end of the day, you connect with Michelle and Jim to discuss the financial implications of the recommended production process for each component design option. You show Jim the insights in Immersive and explain that one production method is marginally cheaper on a per-unit basis. The other option requires an entirely different tooling setup which adds some costs to production but is ultimately more efficient as it prevents the products from needing to be transported to a separate production line. Jim chooses the second design option and production methodology. At the end of the meeting you offer to create a 3D prototype to review with the broader agile team tomorrow.

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Line Leader

Line Leader

ROLE SUMMARY

Line Leaders oversee the work of Operators on production lines.

EVOLUTION SUMMARY

Today, they spend a significant amount of time manually collecting data, generating reports, and coordinating information and task assignments across stakeholders.

In the future, Line Leaders will shift away from manual work and reactive problem solving to proactive issue identification and prevention. Automated data collection and intelligent dashboards will allow Line Leaders to spend most of their time on the shop-floor coaching their teams and problem-solving production issues in real-time.

EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Track all employee data manually in spreadsheets	→	Store and track all employee data in **MES**	→	Access real-time and projected employee insights (attendance, skillsets, capacity, overtime allocation) in **resource management dashboard**
Manage Operator assignments across multiple systems	→	Manage Operator assignments in **MES;** assign Operators to tasks based on the **daily production plan** from the **APS** and near-real time workstation progress in the **MOS**	→	Manage assignments using a **resource management dashboard** that provides **real-time insights** on workstation progress, nature of constraints, worker performance, and site-wide resource availability
Manage required trainings for Operators across multiple systems	→	Manage required trainings for Operators in **MES**	→	Use skills matrix, **MES,** and **resource management dashboard** to identify capability gaps on production lines and proactively develop cross training plans with HR
Production line innovation is primarily generated by Operational Excellence COEs and six sigma black belts	→	Empower front-line to interact with **Quality Analytics dashboard;** use data to identify recurring issues and process improvements to communicate back to engineers	→	Empower front-line team to leverage **digital twins** of various production processes to inform process optimizations

Key: Industry 4.0 Enabler

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EVOLVING RESPONSIBILITIES

Today	***Tomorrow*** *(Near Term Changes)*	***Future Aspiration*** *(Longer Term Changes)*
Pull production reports from multiple systems and manually update different report templates with correct production data	Update data in one system and pull automated production reports from **MES Intelligence;** use root cause information in **KPI dashboard** to support KPI discussions	Receive **automated production reports and condition based alerts** based on **sensor data** (e.g., Condition based alert to bring material to a production line at risk of going down)
Conduct periodic check-ins with team to discuss issues and losses incurred throughout the day	Connect with Operators regarding issues as they occur, leveraging real-time data and alarms from **Quality Analytics dashboard**	Problem solve issues with Operators using **automated** root cause analysis and **predictive insights** on future conflicts and recommended mitigation activities
Process deviations can take too long to detect or can go by undetected	Receive real-time and predictive alarms on process deviations and location from **Quality Analytics dashboard** to improve Operator response time to deviations	Receive real-time alerts and **quality control queries** from **scaled Quality Analytics dashboards** to proactively investigate abnormal production incidents that could impact product quality, as well as predictive insights to stop the production line before there is a process deviation / quality issue

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EVOLUTION SUMMARY

Today, they spend a significant amount of time manually collecting data, generating reports, and coordinating information and task assignments across stakeholders.

In the future, Line Leaders will shift away from manual work and reactive problem solving to proactive issue identification and prevention. Automated data collection and intelligent dashboards will allow Line Leaders to spend most of their time on the shop-floor coaching their teams and problem-solving production issues in real-time.

EVOLVING RESPONSIBILITIES

Today	→	***Tomorrow*** *(Near Term Changes)*	→	***Future Aspiration*** *(Longer Term Changes)*
Resolve issues as they arise with little time to prioritize or plan for the future; respond to many different competing commands with no standard set of key performance indicators to track progress	→	Leverage **Program X's Client Co. Operating System** as single source of the truth to enable daily operations with **standardized KPIs**, **governance structures**, and **daily huddle meetings**	→	Execute **digital daily management** with increased decision rights and accountability for the results of the cell; Embrace / drive increased accountability and transparency
Spend excessive amounts of time manually coordinating activities across functions	→	Meet with cell leaders and support functions during **daily area huddles**; assign open actions to the right support functions in the area level huddles	→	Leverage **resource management dashboard** to coordinate tasks across functions in real-time (e.g., materials handling, quality team, HR)
Manage team of specialized Operators	→	*[no changes expected]*	→	Manage Operators and maintenance technicians who can be flexibly deployed across **automated production lines** and **connected machinery**
Use wet signatures for sign off during processing	→	Use **e-signatures** for sign off during processing	→	*[no changes expected]*

Key: Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

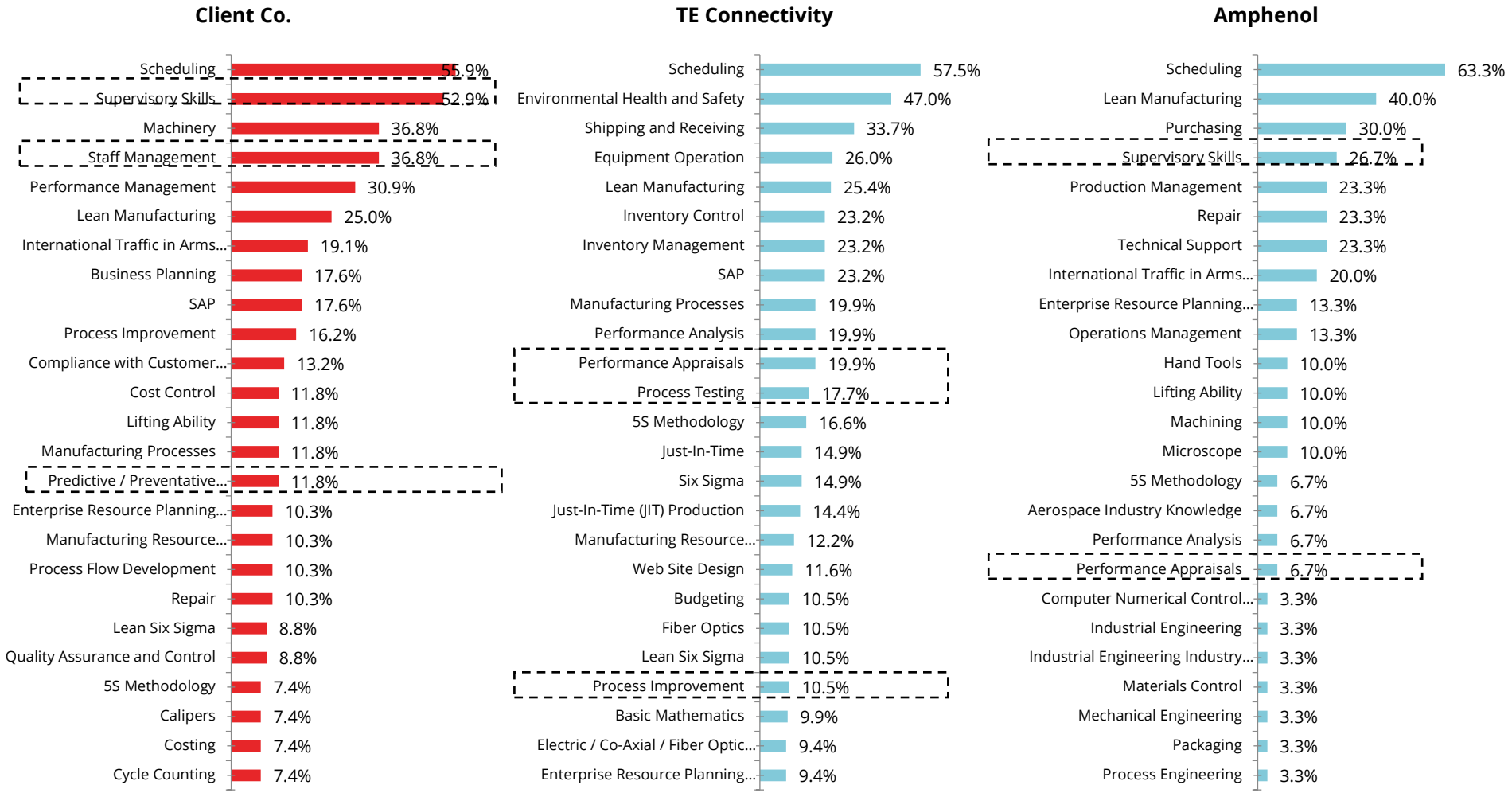
LINE LEADER EVOLVING SKILLS PROFILE

	Existing Skills ***Growing*** *What will increase in importance?*	New Skills ***Emerging*** *What net new skills will be needed?*
People	✓ **Digital Learning Agility:** Ability, confidence, and motivation continuously learn and apply new technologies at work	✓ **Coaching / Team Management:** Ability to mentor and guide team members to master new skills and improve their performance
Specialized	*n/a*	✓ **Continuous Improvement:** Increased capacity allows for time to identify continuous improvement opportunities in daily operations (e.g., kaizen) ✓ **Predictive / Prescriptive Maintenance:** Familiarity with Predictive / Prescriptive Maintenance practices
Technical	✓ **Computer Literacy:** Skills needed to use an MES ✓ **MES:** Ability to navigate MES's features, functionalities, and processes which are relevant to their role ✓ **MES:** Understanding of MES language (data types, fields etc.) and the key data elements coming from an external system to MES ✓ **ERP:** Ability to pull production reports from ERP BI ✓ **Analytics/KPI dashboards:** Understanding of how to use KPI dashboards to enable daily operations	✓ **Data Analytics:** Ability to use real-time production data and predictive insights to conduct root cause analysis, prevent recurring issues, identify process improvements, and inform broader strategic plans and initiatives ✓ **IOT:** Familiarity with connected devices and automated production lines ✓ **Digital Twins:** Familiarity with digital twins and how can be used to inform process enhancements ✓ **Robotics/Automation:** Understanding of how front line employees work with robotics and automated machinery on production lines

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

LINE LEADER RECRUITING STRATEGY | CLIENT & DIRECT COMPETITORS (U.S.)

For the last three years, Client Co. and its direct competitors have prioritized scheduling above most skills, with some attention paid to supervisory / staff management skills.



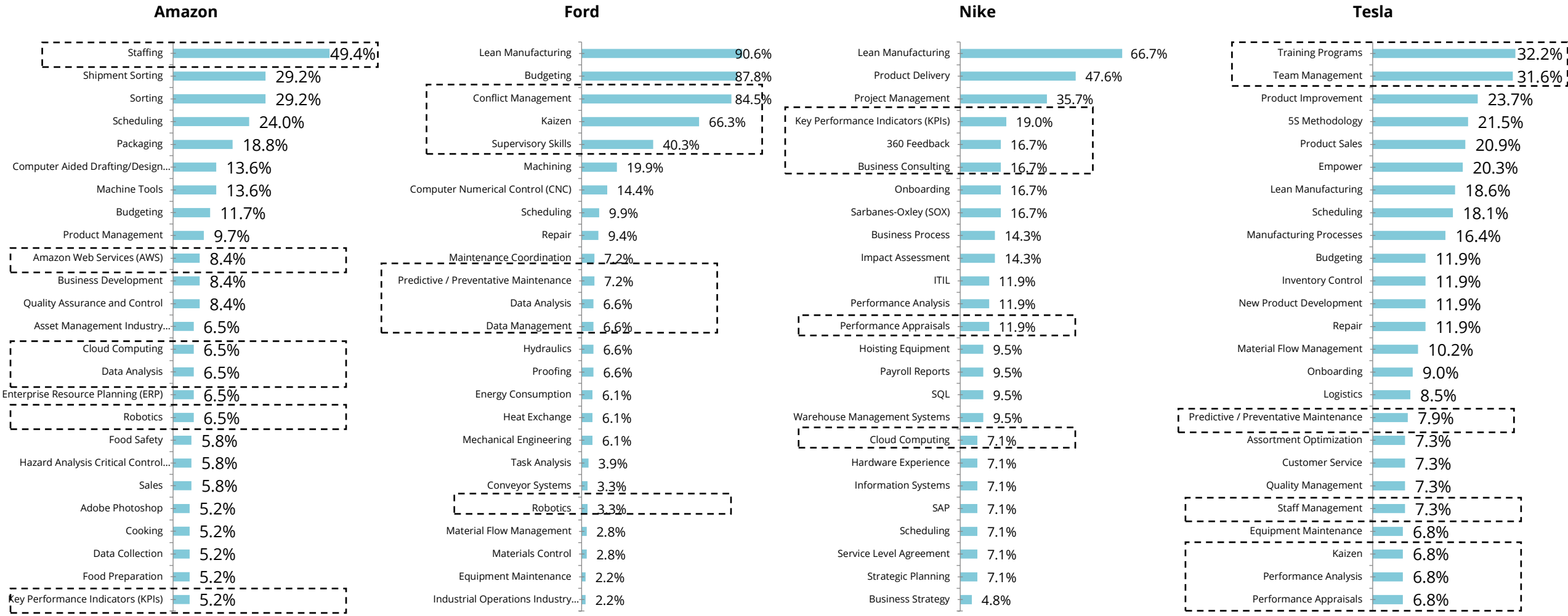
Key: Industry 4.0 related skill

[1]*Time Period: Nov. 1, 2017 – Nov. 1, 2020*

Source: Labor Insight Burning Glass Occupations

LINE LEADER RECRUITING STRATEGY | INDUSTRY 4.0 LEADERS (U.S.)

Industry leaders' recruiting strategies for the last three years have placed greater emphasis on hiring talent with experience in process improvement, data analysis, key performance indicators, and specific supervisory skills like conflict management and performance feedback.



Key: Industry 4.0 related skill

[1]Time Period: Nov. 1, 2017 – Nov. 1, 2020

Source: Labor Insight Burning Glass Occupations

LINE LEADER

ILLUSTRATIVE TOOLBOX

OptiCrew
Intelligent resource management dashboard that integrates with performance dashboards to track task completion and production constraints and enable dynamic resource management/allocation

Gen4-Conservatory
Smart meeting rooms for co-located, cross-functional teams. Smart-glass boards plugged with AI-enabled devices that can pull data from multiple sources and conduct basic data transformation

Asset View
An asset performance dashboard that provides real-time equipment health, location, maintenance alerts, predictive insights, and end-of-life calculations for physical assets

FUTURE DAY IN THE LIFE

6 am	Your alarm goes off at 6 am, which sends a notification to your smart coffee maker to begin warming up the water and brewing coffee. You get dressed, make yourself a quick breakfast, and then head out for the day.
7:30 am	You arrive for your shift and sign into your iPad to go to the shift hand off report to review the incidents that occurred during the prior shift. Then you find your optimised schedule for the day. You do a quick review of your team's task assignments and ensure that all tasks are assigned to the most appropriate workers. You check your workstation's performance dashboard in **OptiCrew** and review your production targets for the day along with any predictions on where constraints may arise.
8 am	You join your morning stand up with the shift supervisors, quality leads, process leads, maintenance leads and the plant manager. Since some of the team is co-located, the plant manager pulls up the site's major priorities for the day on the **Gen-4 smart board**, including throughput goals, recent safety concerns, and prioritized quality issues. The team discusses and coordinates the major activities that will occur during the day.
9 am	You are looking at upcoming production orders and realize you need a more specialized skill set to execute a few of those orders. You pull up list of recommended and available resources in **OptiCrew**. **OptiCrew** highlights the most appropriate workers to take over, taking into account skills, availability, and the critical path. You select a new resource and use your iPad's **OptiCrew** app to reassign the task and organize backfills for those resources. As you reallocate resources, they instantaneously receive notifications on their mobile apps with their new task assignment.
10 am	While discussing an issue with one of your Operators on the shop-floor, you receive a **OptiCrew** notification on your iPad that in a couple hours, another Operator on your team will complete a task that requires an inspection before it can be passed. **OptiCrew** shows no inspectors with available capacity today so you hit the plant-wide resource request button which sends all supervisors a request to loan a resource from one of their workstations for this task. You quickly turn your attention back to your team member. A few minutes you receive a notification that a supervisor has filled your request and assigned an inspector to the task.
11 am	You realize it's time to conduct your performance check-in with Alex, one of the operators on your team. You head over to one of the private meeting rooms, where you find Alex waiting for you. During the check in, you review Alex's performance metrics and discuss how he has been implementing the feedback from your last check-in. Before ending the session you make sure to ask Alex if he has any feedback or advice for you. You also remind Alex to fill out the anonymous 360 feedback survey that was sent out earlier this week to all plant employees.
1 pm	In the middle of lunch, you receive an alert on your phone from **Asset View** that a machine on your production line is down. You open the attached report which provides stats on the breakdown, as well as some potential root causes. Reading through the insights, it becomes clear that your Operator who is assigned to this malfunctioning machine will need more advanced support to resolve this issue. You close the **Asset View** app and open **OptiCrew** to request dispatch of a maintenance technician. **OptiCrew** automatically notifies the Operator and reassigns them to a new task.
3 pm	With the close of the day approaching, you return to your workstation. In **OptiCrew**, your dashboard displays the overall progress of your station and its constraints. You are view your individual cell's performance metrics. You leave a few additional notes for the night shift manager whose shift is starting soon. You can see a leader board of how each employee is doing against plan. Using this data as a starting point, you take the next hour to you organize your notes for upcoming quarterly performance check-ins conversations which kick-off next week.

Note: *The Future Day in the Life is not meant to capture every task a role may execute in the future; it is intended to describe select tasks / ways of working which are evolving as a result of Industry 4.0 trends and enabling technologies*

Operator

Operator

ROLE SUMMARY

Operators work on production lines and oversee machines and processes.

EVOLUTION SUMMARY

Today, they typically specialize in their assigned machine or product. Their reliance on tribal knowledge, supervisor instruction, and personal judgement to prioritize work and solve issues often creates miscommunication, human error, and rework.

In the future, Operators will work more effectively, efficiently, and flexibly. Digital tools will prioritize their work, boost productivity, and ensure they spend time on what's most valuable. Digital twins and AI decision support will enable them to proactively identify and solve issues with confidence. They will be trained as generalists, seamlessly and flexibly deployed across various machines and product lines.

EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Leverage ERP to track production processes; Manage only a few machines at a time	→	Leverage **MES** to track production processes	→	Use alerts from **digital twins** to track production processes and several **autonomous machines** at a time
Leverage paper based work instructions / SOPs	→	Leverage digital work instructions / SOPs in **MES**	→	Execute shop floor activities using **AR devices** that display modular, interactive, real-time instructions, PMI annotated on **3D models,** and training videos on the lenses and **MR devices** that project images directly on objects on the shop floor (e.g. projecting where holes need to be drilled on a part)
Adjust machine settings (e.g. for machine breakdowns, out of control conditions) based on judgment, tribal knowledge, and/or supervisor instruction	→	Adjust machine settings based on briefing during **daily management huddles;** manually update MES with the adjustments	→	Adjust settings for machine breakdown using **AI** decision support; use **automated center-lining** to eliminate most breakdowns

Key: Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

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EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Troubleshoot issues on the production line based on judgment, tribal knowledge, and/or supervisor instruction	→	Troubleshoot issues on the production line using real-time data from **Quality Analytics dashboards;** Trust the data to drive decisions and priorities	→	Troubleshoot production line issues using **AR/MR devices** for "see what I see" support and **AI decision support** that recommends actions based on previous failure reports
Diagnose issues / quality defects when conducting visual inspections based on judgment, tribal knowledge, and/or supervisor instruction	→	Use **MES** to record inspection details/quality defects and assess inspection results	→	Conduct visual inspections using cameras powered by **AI and Deep Learning image recognition** to quickly identify features that are out of specification and to detect quality defects
Receive downstream notification from inspectors regarding product quality defects; detect process deviations too late or completely miss them	→	Receive real-time and predictive alarms on process deviations and location from **Quality Analytics dashboard** to improve response time to deviations	→	Receive real-time alerts and **quality control queries** from **scaled Quality Analytics dashboard** to proactively investigate abnormal production incidents that could impact product quality, as well as predictive insights to stop the production line before there is a process deviation / quality issue

Key: Industry 4.0 Enabler

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EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Physically locate Line Leader on shop floor or wait until the end of the day to discuss task assignments, work completion status, and/or issues on the production line; use limited data to support discussions	→	Discuss issues with Line Leaders as they occur, leveraging real-time data and alarms from **Quality Analytics dashboard**	→	Leverage a **mobile application** to update work status in real-time, automatically re-prioritize task assignments, and communicate digitally with Line Leaders
Manually track and trace defective products	→	Use container numbers and **MES** to track and trace defective products	→	Leverage **digital twins** to track and trace defective products; review and assign defect codes to the defects that are flagged by the system using **AI**
Execute container management using tribal knowledge and local production and material management processes and without an MES system to record data elements	→	Execute standardized container management process and use **ERP MES** to capture digital data along the way	→	Follow automated material-handling process enabled by **co-bots** and leverage insights from the **digital twin** of the materials management process to inform process optimizations

Key: Industry 4.0 Enabler

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EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Recommend process improvements using tribal knowledge, previous experience, and judgment	→	Interact with shop floor visualizations (e.g. **Quality Analytics dashboards)** and make data driven decisions on how to enable future process improvements	→	Leverage **digital twins** of various production processes to inform process optimizations
Document quantity updates in multiple systems	→	Document all quantity updates in **MES**	→	**Machine sensors** automatically document all quantity updates in **MES**
Use wet signatures on paper documents during processing	→	Use **e-signatures** on digital documents during processing	→	*[no changes expected]*
Follow local process for closing orders	→	Follow standardized processes for how to close orders in **ERP** for delayed production, underproduction, and overproduction	→	*[no changes expected]*
Assign machines to production lines	→	Conduct flexible assignment of machines in **MES**, flexing between production lines, as needed	→	*[no changes expected]*

Key: Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

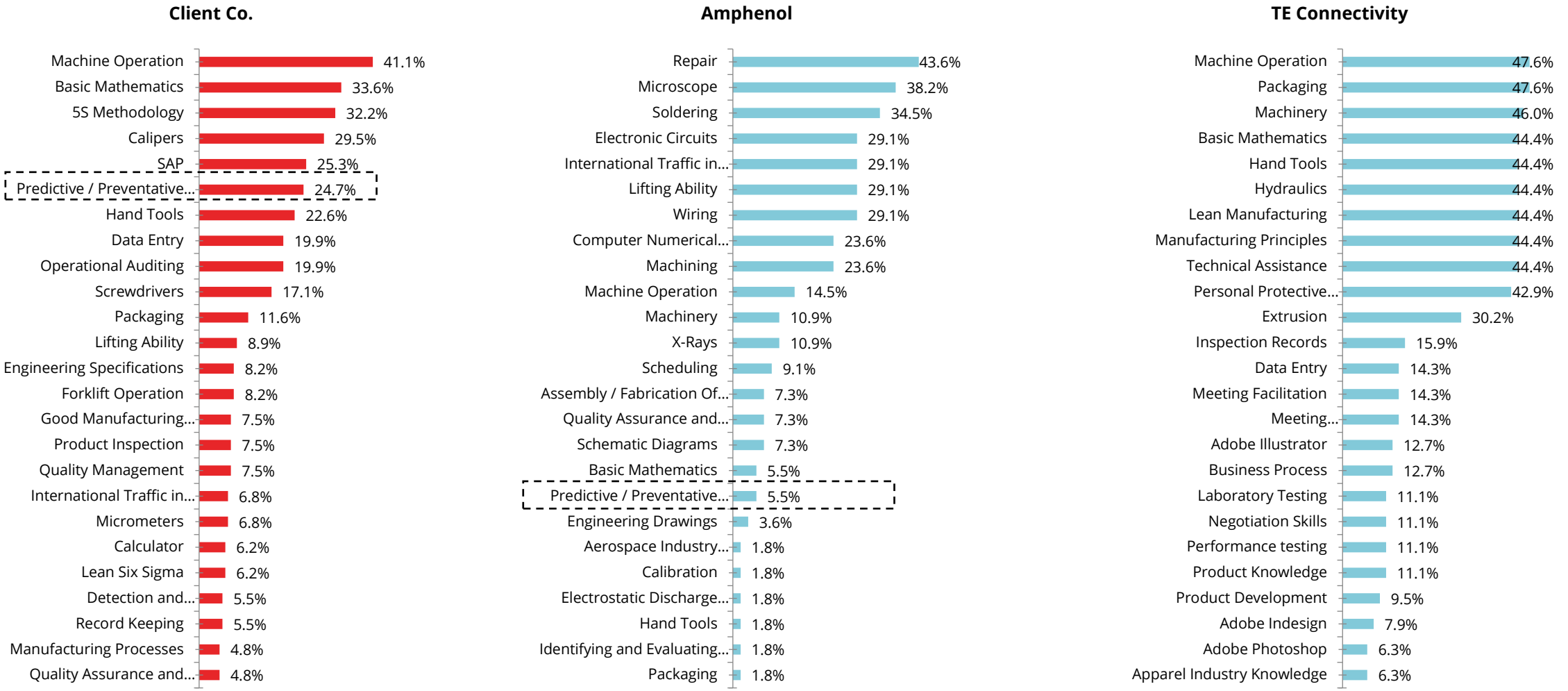
OPERATOR EVOLVING SKILLS PROFILE

	Existing Skills ***Growing*** *What will increase in importance?*	***New Skills*** ***Emerging*** *What net new skills will be needed?*
People	✓ **Digital Learning Agility:** Ability, confidence, and motivation continuously learn and apply new technologies at work	✓ **Adaptable Mindset:** Generalist with the flexibility to adapt to different roles and shift between tasks and production lines as needed
Specialized	n/a	✓ **Continuous Improvement:** Increased capacity allows for time to identify continuous improvement opportunities in daily operations (e.g., kaizen) ✓ **Predictive / Prescriptive Maintenance:** Familiarity with Predictive / Prescriptive Maintenance practices ✓ **Model Based Manufacturing:** Ability to use 3D models to find PMI and execute production activities
Technical	✓ **Data Driven Decisions Using KPI Dashboards:** Ability to interpret insights from analytics dashboards and make data driven decisions on how to enable future process improvements ✓ **Computer Literacy:** Skills needed to use an MES, send an email, use an ipad ✓ **MES:** Ability to navigate MES's features, functionalities, and processes which are relevant to their role (e.g., containment, resource assignments) ✓ **MES:** Understanding of MES language (data types, fields etc.) and the key data elements coming from an external system to MES	✓ **Data Driven Decisions Using Digital Twins:** Ability to interpret and act on insights and alerts from digital twins ✓ **Robotics:** Ability to manage and work collaboratively with robots on automated production lines ✓ **Digital Twins:** Basic understanding of how a digital twin works so they can trust the data ✓ **IOT Sensors:** Basic understanding of what is sensorized (e.g., what transactional data is being captured and what isn't) so they know what tools they can use to analyze machine performance ✓ **AR / MR devices:** Ability to use AR/MR devices and wearables while conducting shop floor activities

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

OPERATOR RECRUITING STRATEGY | CLIENT & DIRECT COMPETITORS (U.S.)

For the last three years, Client Co. and its direct competitors have primarily prioritized legacy skills with some focus on experience with predictive maintenance.

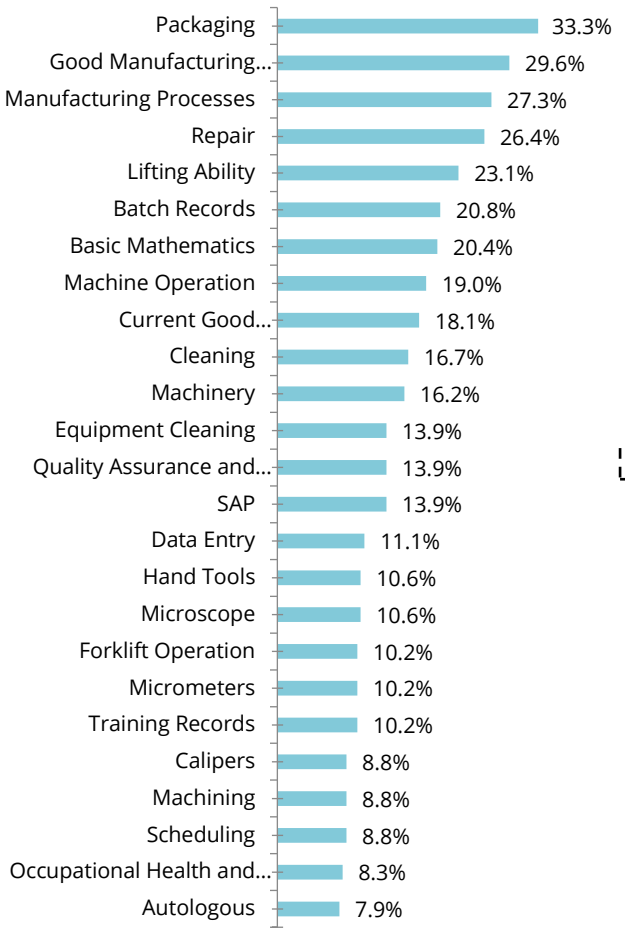


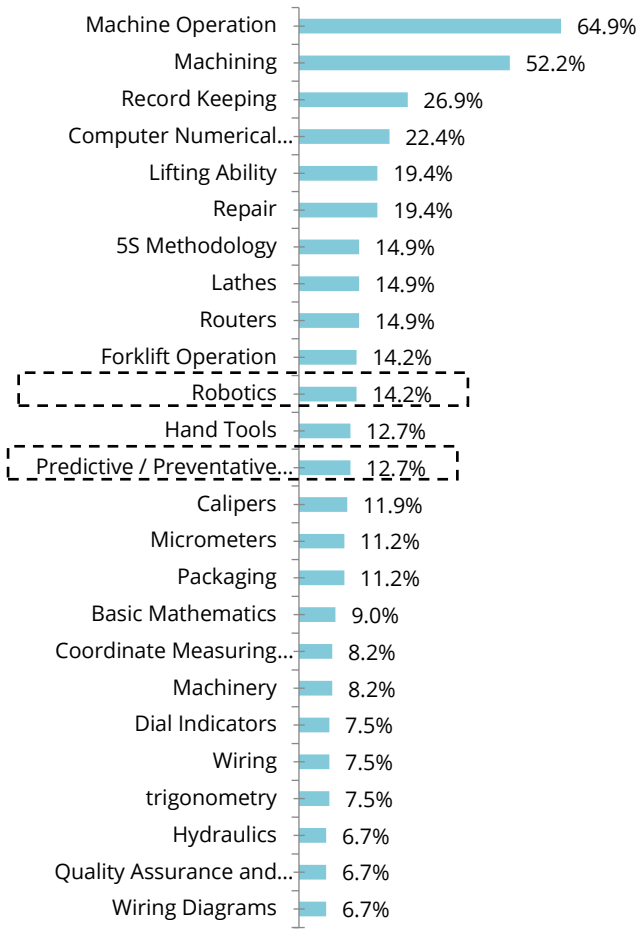
Key: Industry 4.0 related skill

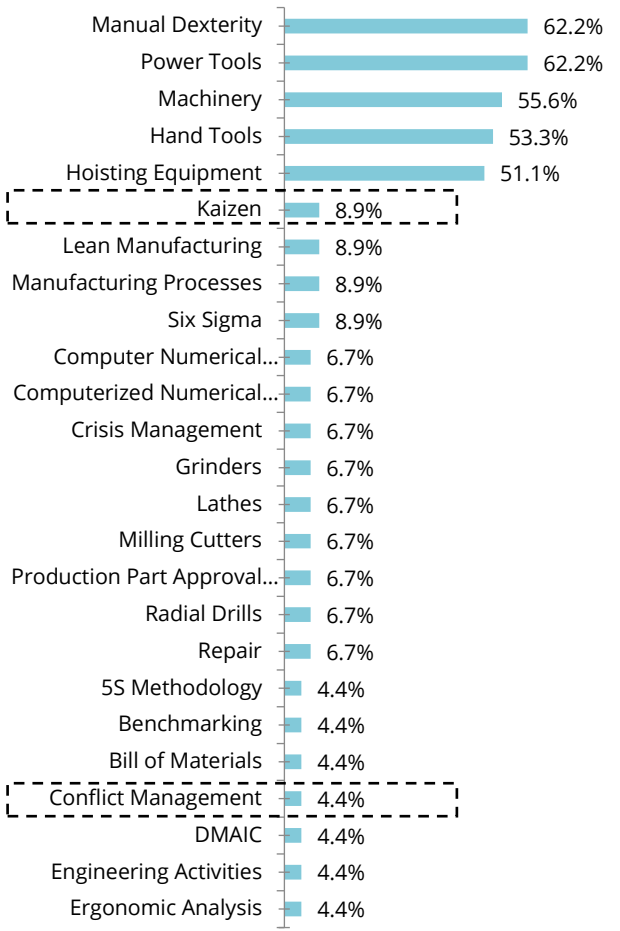
[1]*Time Period: Nov. 1, 2017 – Nov. 1, 2020*
Source: Labor Insight Burning Glass Occupations

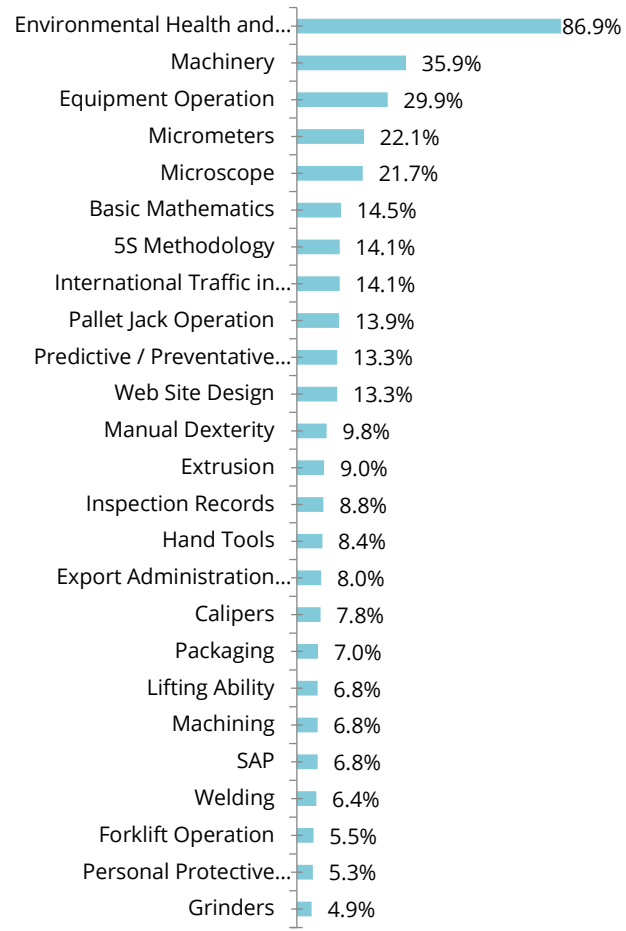
OPERATOR RECRUITING STRATEGY | INDUSTRY 4.0 LEADERS (U.S.)

Industry leaders prioritize similar legacy skills as Client Co. with almost no focus on industry 4.0 skills of the future. When the data is further segmented to exclusively focus on People, however, it appears that the top soft skill most industry leaders are recruiting for when it comes to Operators is computer literacy. The data shows Client Co. also recruits for computer literacy, it is ranked low amongst other human skills, indicating that while it is a consideration, it is not a priority.









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OPERATOR

ILLUSTRATIVE TOOLBOX

OptiCrew
Intelligent resource management dashboard that integrates with performance dashboards to track task completion and production constraints and enable dynamic resource management/allocation

Production Trak
A dashboard that tracks production processes, identifies abnormalities, and predicts bottlenecks using IOT sensors, AI, and machine learning

WeAR
AR/MR glasses that project instructions, images, and videos directly on the lens, use vision picking/image recognition to support shop floor tasks, and present live feeds of the user's field of view for remote support

Venus
An AI digital assistant that provides conversational interface for all productivity related tasks, such as scheduling, answering questions, and checking the status of projects and people.

FUTURE DAY IN THE LIFE

6 am	You wake up to a gentle alarm set by **Venus** the night before. As you get dressed you are sent a reminder to pack gym clothes for a workout session you have booked on your calendar after your shift today. You quickly grab your gym back and a breakfast bar on your way out.
7:30 am	You arrive at work and find your optimized schedule for the day is ready on your iPad in **OptiCrew**. You head into your morning huddle, led by your Line Leader. The meeting ends quickly as no one had any questions about their assigned tasks.
8:30 am	Back at your workstation, you reopen **OptiCrew** and pull up your task list. On the open task list you swipe left on the first task to "job on." You tap into the task for more details. This is a new task for you so you put on your **WeAR** goggles and watch a quick tutorial. Keeping your **WeAR** goggles on, you get to work.
9:30 am	Midway through the task, your **WeAR** goggles flag that a part you are working on is not to the required specifications. You send a "help" alert to your Line Leader via **OptiCrew**.
11 am	W8th support from your Line Leader, you finally complete the task. You open **OptiCrew** and swipe left in the app to "job off" for your current task. Looking at your task list, you can see that your next task is constrained (due to a red dot indicator), so you pick the next available option.
1 pm	You receive a notification on your ipad from Production Trak that there has been an abnormal incident with one of the machines. You stop the production line, and update your task completion status to "paused" in **OptiCrew**. Based on previous failure reports, **Production Trak's** AI assistant recommends you call the central maintenance dispatch group to troubleshoot the issue. You use your ipad to connect live with a maintenance technician out of Singapore. Once connected, you put on your **WeAR** goggles and head over to the malfunctioning machine. The maintenance technician watches a live feed as you make a few simple adjustments to the machine's setting to attempt to resolve the issue. After a few minutes, the maintenance technician informs you that this issue will require more advanced troubleshooting. While they work on dispatching a local technician, you reopen **OptiCrew** and update the task status to "under maintenance." **OptiCrew** automatically reprioritizes your schedule and assigns you your next task.
3:30 pm	You realize it's time to head home. As you start closing out your tasks in **OptiCrew**, Venus sends you a notification for a new course on robotic programming and asks if you would like to be enrolled. You accept and **Venus** schedules the next available training session that fits best with your calendar.

Note: *The Future Day in the Life is not meant to capture every task a role may execute in the future; it is intended to describe select tasks / ways of working which are evolving as a result of Industry 4.0 trends and enabling technologies*

Deep Dive: Healthcare (Physician Archetypes of the Future)

Activities defining today's physician

THE WORK OF TODAY'S PHYSICIAN IS DIVIDED AMONG THREE PRIMARY CATEGORIES:

Diagnose

Key Activities

- Perform initial diagnostic assessment: patient history, exam and evaluation, ordering of tests
- Perform, interpret, and communicate diagnostic testing
- Provide diagnosis

5% of US adults experience **diagnostic errors** in outpatient care per year[2]

Prescribe and Operate

Key Activities

- Provide medical advice or medication
- Refer patient to specialist care provider, if necessary
- Schedule follow-up, if necessary
- Actively monitor and track patient progress

Unnecessary care wastes roughly **$210 billion** per year[3]

Document

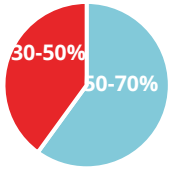
Key Activities

- Chart all aspects of the patient's visit – medical history, medication changes, symptoms, treatment, etc.
- Utilize organization documentation platform (most commonly EHR) to scribe all notes

Physicians spend **23%** (almost one-quarter) of their time on **non-clinical paperwork**[4]

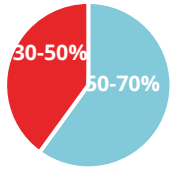
Today: Treating Disease

Non-proceduralist



Diagnose & Prescribe

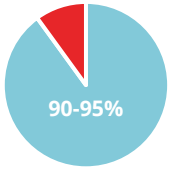
Proceduralist



Operate

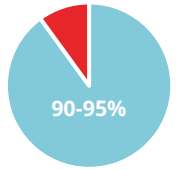
Future: Managing Health

Care Integrator



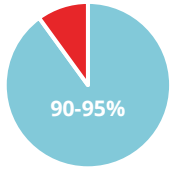
Coach & Heal

Digital & Analytic Consultant



Analyze

Proceduralist



Operate

Document

1 Khosla, Vinod. "20-Percent Doctor Included" & Dr. Algorithm: Speculations and Musings of a Technology Optimist," Khosla Ventures, 2016, https://www.khoslaventures.com/20-percent-doctor-included-speculations-and-musings-of-a-technology-optimist.
2 https://qualitysafety.bmj.com/content/23/9/7272ijkey=d6715707b9895d369bc7bed536c9c2a70aa04673&keytype2=tf_ipsecs
3 https://www.npr.org/sections/health-shots/2017/12/21/572329335/a-prescription-to-reduce-waste-in-health-care-spending
4 https://www.npr.org/sections/health-shots/2017/12/21/572329335/a-prescription-to-reduce-waste-in-health-care-spending

The physician archetypes of the future

The eight key physician* archetypes depict how technology will transform the role of the caregiver and align with the Future of Health and preventative care

Complex care manager/care integrator: Shepherd of the future-state caregiver team, leading an integrated care team for patients and populations

Digital consultant: Optimizes routine processes and procedures using state-of-the-art technologies

Analytic consultant: Provides specialized insights to the caregiving team

Proceduralist: Acts as the precision expert, providing the highest level of skilled procedures

Care Deliverers

Data and informatics specialist: Experts who interpret, integrate, and apply large amounts of data to improve individual and population health

Researcher: Develops innovative, cutting-edge treatments for care deliverers to deploy, care enablers to promote, and patients to implement

Executive: Acts as the CEO of the future health ecosystem, providing guidance for caregivers and stakeholders

Educator: Liaison between instructional and caregiving functions who teaches and builds academic credibility for innovative, technology-forward treatments

Care Enablers

**Physician is used to include independent practitioners, such as nurse practitioners*

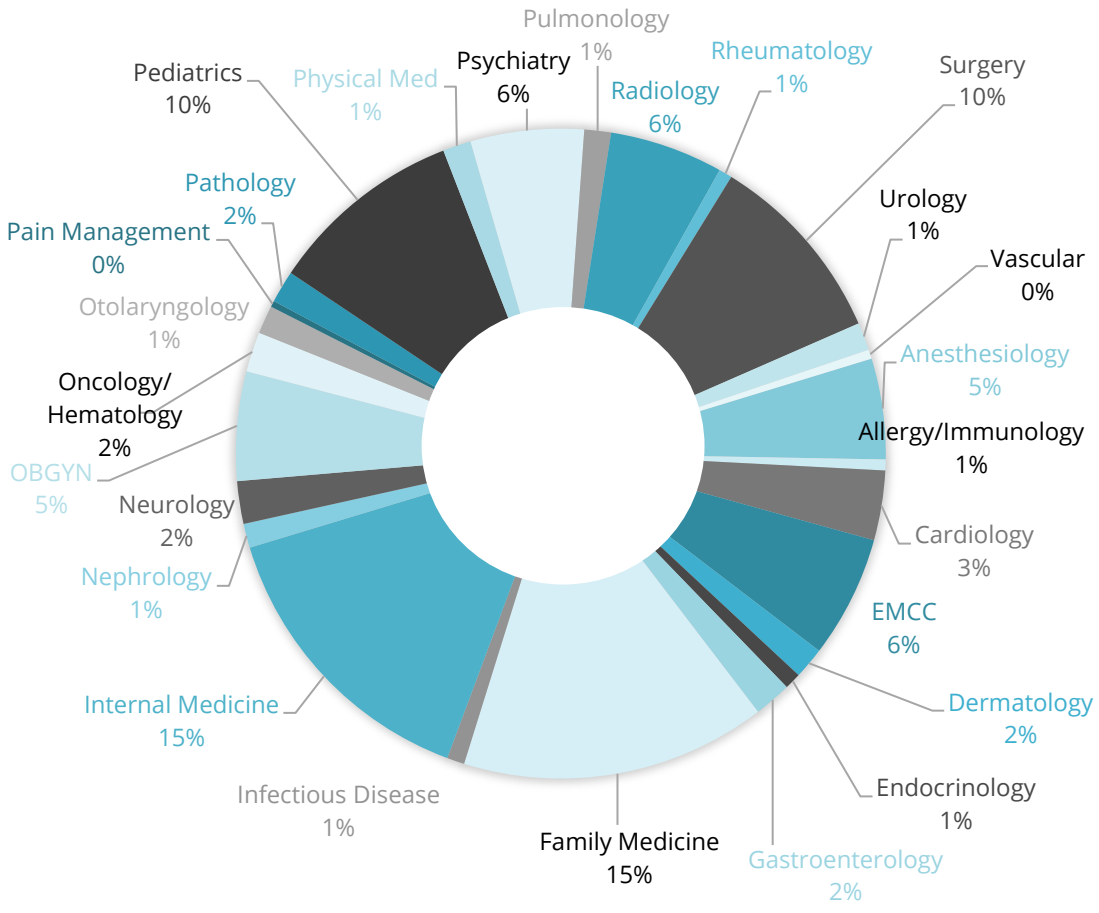
Radically interoperable data

Personalized and seamless consumer experience

Current state | Archetypes distribution (per 100,000 population)

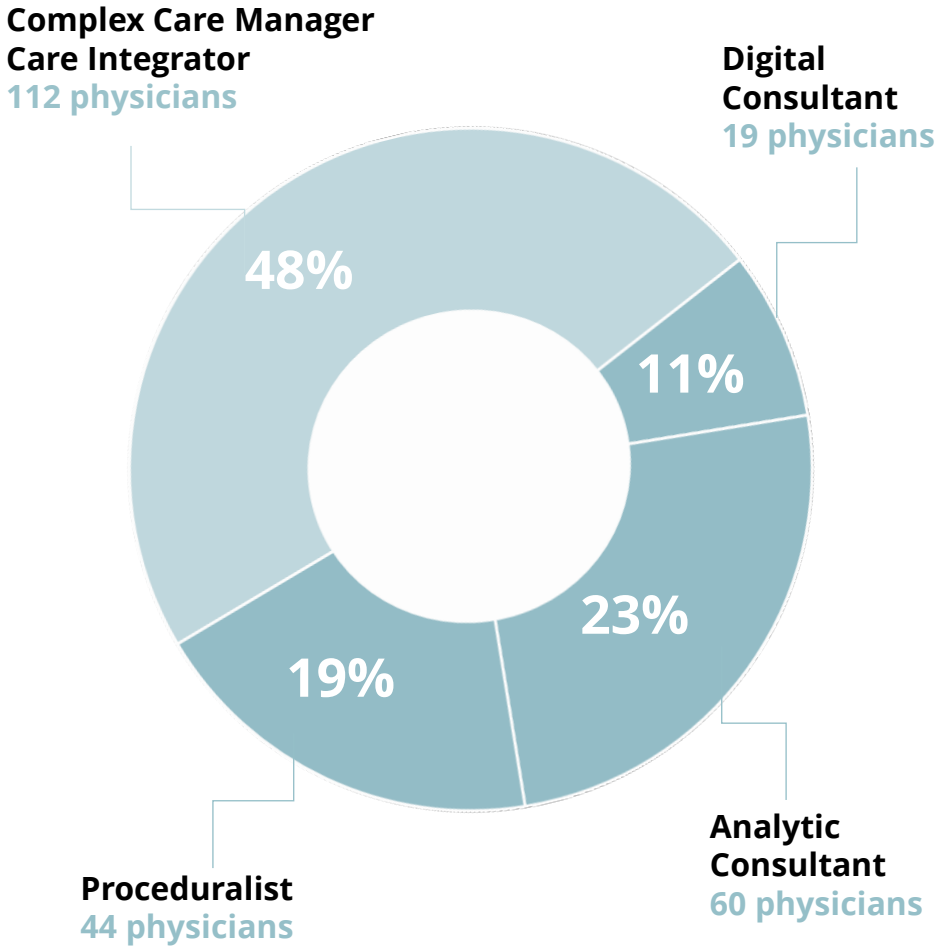
Currently physician work is divided across 27+ specialties, and nationally an average of 235 physicians are necessary to provide care for 100,000 patients

Today's Physician Specialties[1]



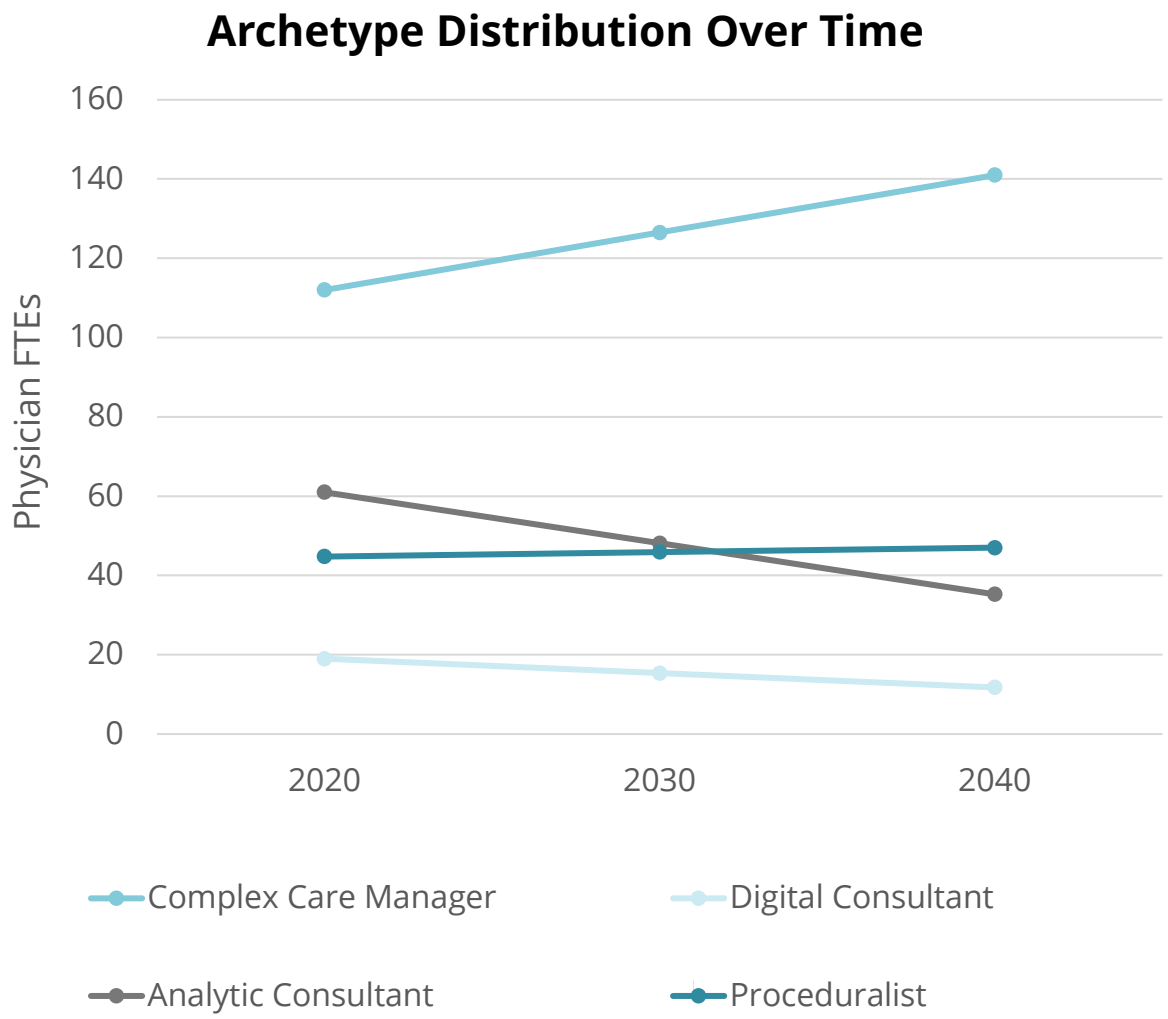
1 Data Provided by the Truven Health database and AAMC ttps://www.aamc.org/data-reports/workforce/interactive-data/number-people-active-physician-specialty-2017

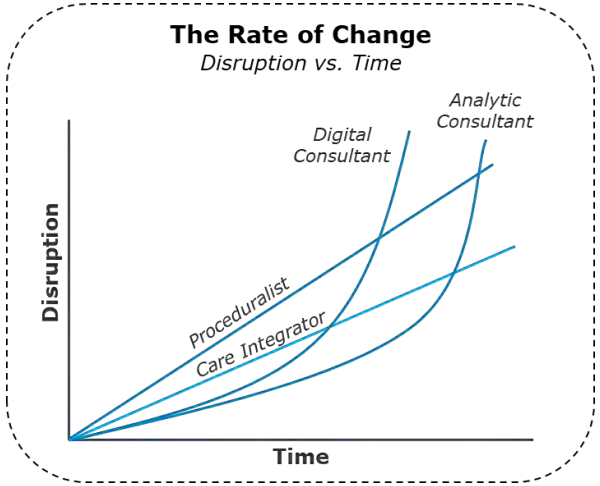
Physician Archetypes



10-year future | Archetype distributions (per 100,000 population)

Archetype distribution over time calculated based on the national physician landscape. These numbers and estimates will differ based on the specific market





In alignment with our hypothesis on technological disruption over time across Physician archetypes, we predict that **Analytic Consultant** and **Digital Consultant** Physicians will see their roles most radically altered by the accelerated integration of technology and healthcare. Over the next 10 years, these roles will see their numbers decline, as AI transforms these roles radically.

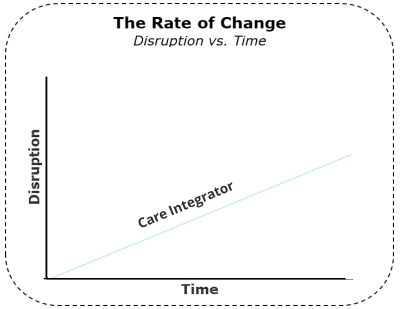
With delayed and more gradual technological disruption anticipated, **Complex Care Managers** can expect an increase in their Physician workforce, and **Proceduralists** may anticipate slight/moderate growth over the next 10 years within Community Health Systems.

Complex Care Manager: Transition to the Future

Job Description

Physicians who support patients and populations in taking control of their health and will manage the entire network of healthcare providers for ill patients that need individualized care and for populations that require health and wellness initiatives

Catalyst for Change: Increasingly, as the work of Specialists is supplemented by AI and digitization, current physician specialty roles will transition to the archetype of Complex Care Manager / Integrator, providing patients with holistic care and human touch enabled by EQ and irreplaceable by technology



What do I look like today?

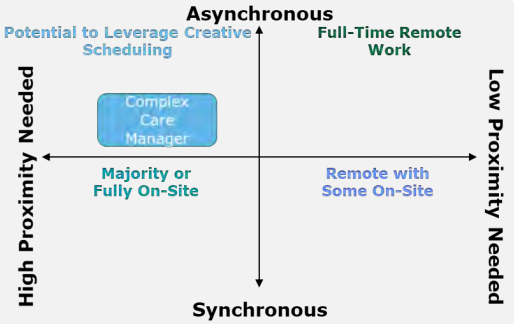
Currently, I occupy the following physician roles:
Family Practice, Infectious Disease, Internal Medicine, Critical Care/Emergency Medicine, Obstetrics/Genecology, and Pediatrics

I see a **high volume of patients** daily, serving as the primary and first point of contact in the healthcare system; and am responsible for **opening the door to my specialist peers**, when needed. However, documentation of these visits is significant, and reflects a career pain point

How and where will I work?

My work is predominately **asynchronous**, but requires **high proximity** to my patients to deliver care

While I require the **access to equipment** and **proximity to patients** provided by on-site work, the individual nature of my day-to-day role may allow for the employment of creative scheduling to limit exposure



How can I prepare for tomorrow?

SKILLS TO DEVELOP:

- Excellent data & **AI management skills**
- **High EQ** (Emotional Quotient) skills and empathetic communication of data
- Ability to leverage big data and external knowledge
- Capacity to excel within and **manage teams**
- Awareness of **holistic patient care** and preventative medicine

TECHNOLOGY TO MASTER:

- **Natural language processing technology**, to generate detailed notes through spoken or written sentences and minimize documentation burden
- **Video communication technology**, to facilitate regular telehealth appointments
- **Sensors and wearables** to monitor patient health and facilitate continuous holistic care

IDEAS & COMPANIES TO WATCH:

Ciox Health: Machine learning tool used to enhance health information management and exchange, aimed at modernizing workflows, and facilitating access to clinical data[1]

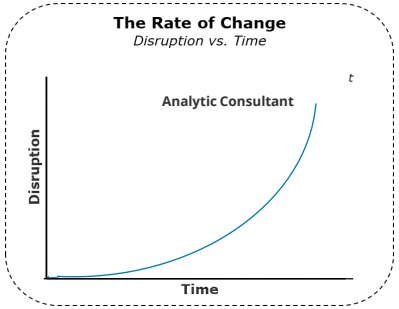
1 https://www.cioxhealth.com/about-us

Analytic Consultant: Transition to the Future

Job Description

Physicians who leverage enhanced AI/algorithms to supplement the care team with complex diagnostic and therapeutic recommendations

Catalyst for Change: Physician specialist roles can expect to see their work transformed in the 20-year future, as technology radically disrupts Analytic Consultant work over time (see *Rate of Change* graph). Specialties will transition to the work of Analytic (and Digital) Consultants, shrinking in number as enhanced AI is used to supplement work and quickly and accurately address patient needs



What do I look like today?

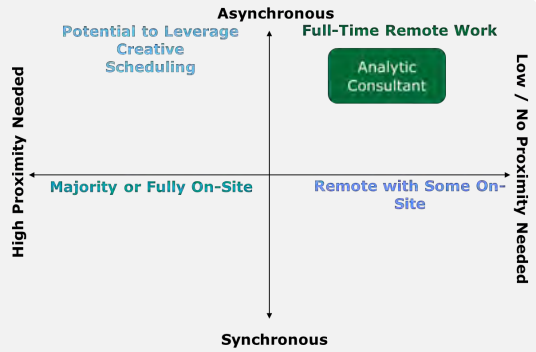
Currently, I occupy the following physician roles: Psychiatry, Oncology/Hematology, Neurology, Pulmonology, Allergy/Immunology, Cardiology, Endocrinology, Gastroenterology, Rheumatology

I utilize a deep personal specialty knowledge to perform **individual consultations** based on primary care physician referrals. Large portions of my time are spend ordering and interpreting tests to diagnose, and working to **stay up-to-date in my specialty field** by attending trainings and seminars

How and where will I work?

My work is predominately **asynchronous**, and requires **low proximity** to my patients to deliver care

Primarily, my role requires **no office presence**, allowing for **full-time remote work** enabled by videoconferencing and telehealth technology



How can I prepare for tomorrow?

SKILLS TO DEVELOP:

- Ability to **remotely communicate** and add value to care teams
- Capacity to leverage AI technology to **pinpoint diagnoses** and identify patient issues
- Articulation of the importance of data application, and ability to **guide care teams** to this methodology

TECHNOLOGY TO MASTER:

- **Crowd-sourcing** and virtual technology that allows asynchronous, geographically distributed input
- Artificial intelligence that provides **innovative methods** to better diagnose and treat patients

IDEAS & COMPANIES TO WATCH:

KenSci: A machine learning tool used to predict illness and treatment to facilitate early intervention, by monitoring population health risks to identify future patterns of clinical and cost outcomes[1]

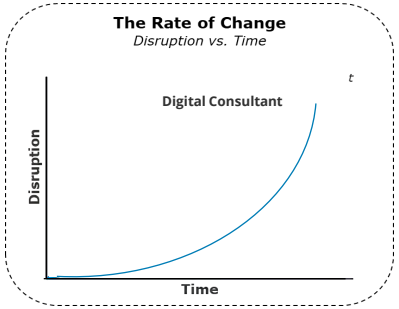
1 https://www.kensci.com/platform/overview/

Digital Consultant: Transition to the Future

Job Description

Physicians whose function will primarily be digitized, creating opportunities for efficiency and eventual AI substitution of function

Catalyst for Change: Physician specialist roles can expect to see their work transformed in the 20-year future, as technology radically disrupts Digital Consultant work over time (see *Rate of Change* graph). Specialties aligned to digital consultant work can expect to see their roles increasingly replaced machine learning and pattern recognition software



What do I look like today?

Currently, I occupy the following physician roles:
Radiology, Dermatology, Pathology

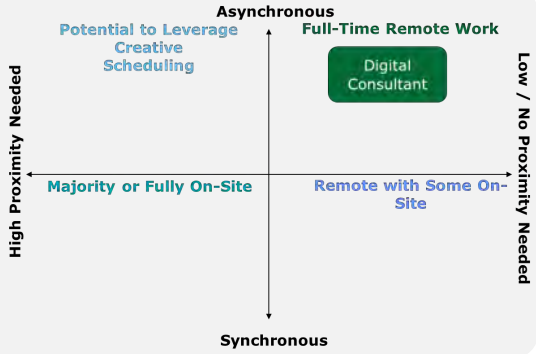
Today, my role centers on to **visually diagnosing and interpreting data**, to catch and communicate disease conditions. Attention to detail is paramount, as I work to **track patterns and read scans manually**. In the future, pattern recognition software will diagnose and sort, eliminating diagnostic error, and enabling me to monitor this network of machines and communicate results to patients

How and where will I work?

My work is predominately **asynchronous**, and requires **low proximity** to my patients to deliver care

My chief tasks will be **applying technology-enabled recommendations** to scale, and **communicating across a network of machines** to deliver accurate diagnoses and treatment plans

In this role, no office presence will be necessary, enabling **full-time remote work**



How can I prepare for tomorrow?

SKILLS TO DEVELOP:

- Excellent **technological literacy**
- Advanced **data aggregation and synthesis** skills
- **Machine learning** expertise and understanding

TECHNOLOGY TO MASTER:

- Machine learning and artificial intelligence tools (including bots and apps) to coordinate and monitor the **large-scale analysis of patient data** (see featured case studies below)

IDEAS & COMPANIES TO WATCH:

FirstDerm: A dermatology search engine powered by artificial intelligence able to scan for skin 43 skin diseases, all forms of skin cancer, inflammatory diseases, and all visual STDs, allowing patients accurate and timely results without physician contact[1]

DeepPath: Cloud-based software application using cutting-edge deep learning algorithms to provide 'real-time' solutions at the point-of-care. Providing an accurate and efficient diagnostic platform to would allow detailed quantitative assessment of various disorders and related outcomes within Pathology[2]

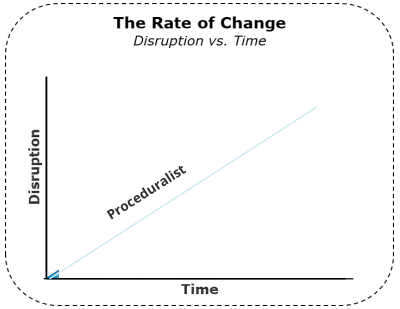
1 https://www.firstderm.com/mission/
2 https://www.deeppath.ai/

Proceduralist: Transition to the Future

Job Description

Physicians who perform diagnostic or therapeutic procedures that will be supported by robotics enabling Nano-surgery, remote, and other machine-enabled intervention

Catalyst for Change:
In the 20-year future, as technologically disrupts specialist roles, Proceduralists will see the least radical change, and can expect a workforce increase in step with the population growth, working to integrate technology in the form of nano surgical interventions



What do I look like today?

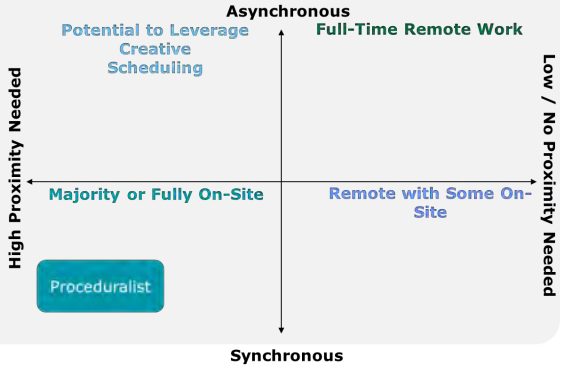
Currently, I occupy the following physician roles:
Surgery, Vascular, Otolaryngology, Physical Medicine/Rehabilitation, Otolaryngology

Today, I act as the medical center's **precision expert**, providing the highest level of skilled procedures. My work depends on **manual dexterity**, visual/spatial awareness, and execution under pressure. My role will increasingly ask me to utilize **robotics and nano surgery**

How and where will I work?

My work is predominately **synchronous**, and requires **high proximity** to my patients to deliver care

Given these constraints, my work will continue to be conducted either **majority or fully on-site**. To be effective, I require access to equipment and **hands-on patient care**, and the nature of my role collaborative and patient-facing



How can I prepare for tomorrow?

SKILLS TO DEVELOP:

- Performing **therapeutic or diagnostic procedures** with the help of technological aids
- Coordinating delivery of **technological interventions**
- Continual mastery of new technology and surgical techniques

TECHNOLOGY TO MASTER:

- **Augmented reality**, used to access digital images and data quickly
- **Robotics to enable** more reliable performance, precision, and flexibility during complex procedures

IDEAS & COMPANIES TO WATCH:

CorPath System: The first FDA-cleared robotic platform designed for interventional physicians. During a CorPath Robotic-assisted intervention, physicians sit in a radiation-shielded workstation and use a set of joysticks and touchscreen controls that translate the physician's movements into device control[1]
Osso VR: Osso VR uses virtual reality to provide the platform, content and tools to bridge the surgical training gap. The mission is to improve patient outcomes, increase the adoption of higher-value medical technologies and democratize access to surgical education around the globe[2]

1 https://www.corindus.com/corpath-grx/what-is-robotic-assisted-intervention#:~:text=The%20CorPath%20System%20is%20the%20first%20FDA-cleared%20robotic,that%20translate%20the%20physician%E2%80%99s%20movements%20into%20device%20control.
2 https://ossovr.com/the-osso-story/

Deep Dive: IT Job Canvases

Software Engineer

Job Canvas Deep Dive: Software Engineer

Name: New Hire Henry

Role: Software Engineer

Team: Hub Operations

Tenure: New Hire – 1 Month

Role Summary:
Software engineers are product engineers that design the software component of a physical product. This may include embedded firmware or software applications / systems intended to integrate with the product.

Shifting Responsibilities

From...	To...
Work in a **silo** on agile software development teams, interacting with design teams on **an ad-hoc basis**; design teams will design a product and reach out to software engineers to build specific software components, as needed	Fully embedded in the design teams to deliver product solutions covering software, electrical and mechanical design (software being the competitive differentiator), participating in all the **agile design iterations using 3D models, rapid / 3D printed prototypes, and digital twins** to optimize product designs
Limited to **front-end and/or back-end development** of code and does not need a systems level perspective	Could evolve into the **'IoT Engineer or the CPS Engineer'** and will not just require front an/or backend knowledge, rather would have a systems level perspective of how all pieces fit (mechanical, software, firmware etc.) **to create mature products**
Receive requirements from project manager/team through either **inconsistent or standardized document-centric processes**	Partner with the project manager / team to help drive **Model-based Systems Engineering** to develop, analyze and test systems

What's Enabling the Change?

- **The role of Software Engineering** evolves towards providing thought leadership and viable technology solutions to the Business
- **Agile team structures require co-location with delivery teams,** creating need for individuals who can be deployed offshore and onshore
- **A focus on the Future of Work** of will allow investment in people's near-term skills and enduring capabilities

Required Skills and Attributes

Specialized Skills:

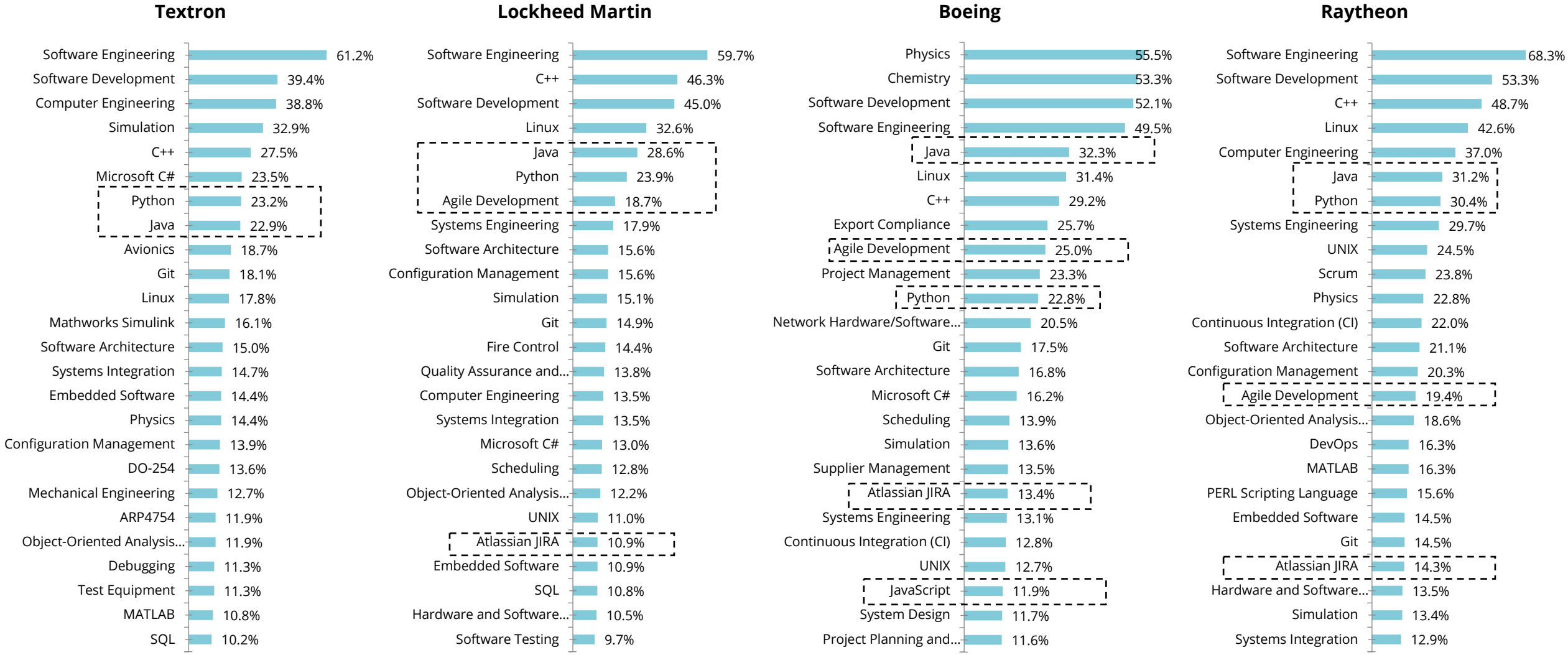
- ✓ Agile / Hybrid Agile Development
- ✓ Continuous Improvement
- ✓ IoT Testing
- ✓ AI/RPA Testing
- ✓ Data Analytics/Visualization
- ✓ Free/Open Source/Libre Software
- ✓ Design Thinking
- ✓ Data Science/Machine Learning
- ✓ Big Data

Human Skills:

- ✓ Excellent Communication
- ✓ Testing/Validation Acumen/Critical Thinking
- ✓ Teamwork/Collaboration
- ✓ Organizational Skills

Software Engineer | Textron & Direct Competitors

When it comes to leading skills of the future, Textron's direct competitors have prioritized hiring software engineers with experience in coding languages and agile methodology



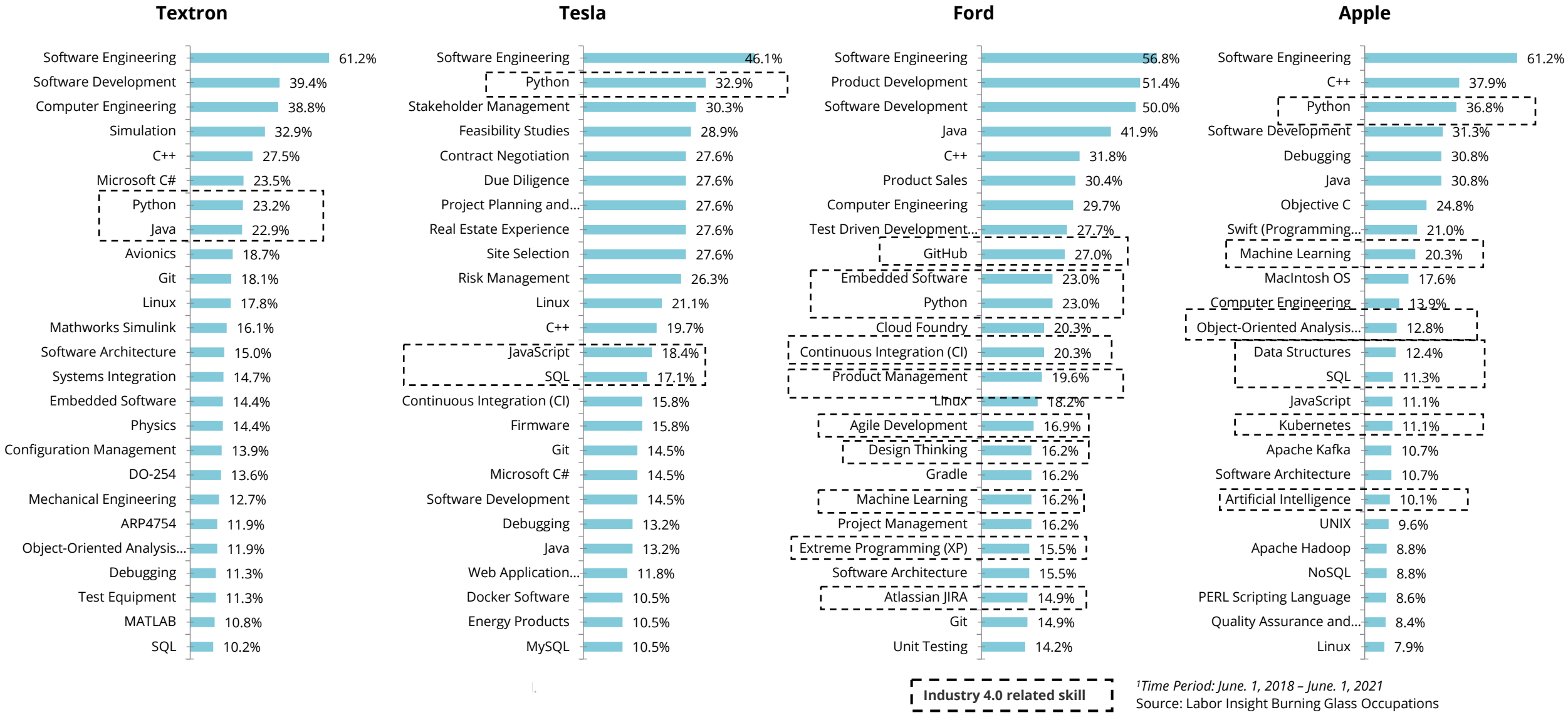
Key: Industry 4.0 related skill

[1]Time Period: June. 1, 2018 – June. 1, 2021

Source: Labor Insight Burning Glass Occupations

Industry 4.0 Leaders' (U.S.) Recruiting Strategies

Industry leaders' recruiting strategies for 2021 has placed greater emphasis on hiring talent skilled in agile methodology and specialized data languages



[1]*Time Period: June. 1, 2018 – June. 1, 2021*

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Systems Engineer

Systems Engineer

ROLE SUMMARY

Systems Engineers, or "Chief Engineers," are the technical lead accountable for the validation and verification of the product.

EVOLUTION SUMMARY

Today, this role at Client Co. is primarily carried out by Product Managers/Engineers who capture system requirements as part of requirements gathering.

In the future, as Client Co.'s product complexity increases, Systems Engineers will become formalized roles on every project. They will exclusively work in 3D models. Downstream collaboration will be formalized during agile design iterations where 3D models, rapid prototyping, and additive manufacturing techniques will be used to validate designs. Intelligent writing tools will help them write smarter requirements faster.

EVOLVING RESPONSIBILITIES

Today	***Tomorrow*** *(Near Term Changes)*	***Future Aspiration*** *(Longer Term Changes)*
Capture system requirements using non-standardized processes across the organization	→ Capture system requirements using **standardized requirements management processes**	→ Write systems requirements using **augmented writing tools** that review and update requirements according to enterprise-wide guidelines (for proper syntax, wording, etc.) in real time; remove need for human peer-review
Write all requirements in text form and store documents in disparate systems across the enterprise	→ Write all requirements in text form in centralized **live docs** in **Polarion**	→ Capture system requirements in process flows/models using **model based Systems Engineering** tools
Write system requirements by searching disparate systems, soliciting tribal knowledge and/or relying personal experience	→ Reuse system requirements using a **centralized requirements library** to quickly find and adapt standard requirements to project needs	→ Reuse system requirements using **AI/ML** models that recommend requirements to be included and flag risky requirements based on what's failed on previous projects

Key: Program X Enabler Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

Systems Engineer

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EVOLVING RESPONSIBILITIES

Today	→	***Tomorrow*** *(Near Term Changes)*	→	***Future Aspiration*** *(Longer Term Changes)*
Capture customer feedback on 2D drawings, the occasional 3D models (where they exist), and physical prototypes	→	Capture customer feedback on 3D models, the occasional 2D drawing (where they exist), and physical prototypes	→	Capture customer feedback during in **agile design iterations** on **3D models** in **AR/VR** environments or **rapid prototypes** created using **additive manufacturing**
Execute rework due to late verification planning and/or downstream feedback from test engineers; reactively update test plans (e.g., costs, resourcing)	→	Reduce rework due to late verification planning by designing products in alignment with **early definition of test/verification plans tied to validated requirements;** use **Polarion** to create traceability between voices, requirements, and test cases	→	Reduce rework due to downstream feedback from testing team by using **model based designs** to conduct **virtual testing** and validation prior to physical test execution
Manually coordinate tasks and information (e.g., governing requirement changes, handing off designs to production/test labs) across the value chain using phone calls and emails	→	Spend less time manually coordinating between stakeholders because all information will be centralized in **PLM and Polarion**	→	All information will be annotated and linked to **3D models** to enable collaboration across the value chain in real time on a single, live instance of the latest product definition

Key: Program X Enabler Industry 4.0 Enabler

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EVOLVING RESPONSIBILITIES

Today		***Tomorrow*** *(Near Term Changes)*		***Future Aspiration*** *(Longer Term Changes)*
Sign off on 2D models (and 3D models, where they exist) to be converted to a pdf for consumption downstream	→	Sign off on 3D models (and 2D models, where they exist) to be converted to a pdf for consumption downstream	→	Drive **model based-definition** by requiring all product definition, modelling, and PMI documentation be done exclusively in 3D; 2D models and pdf drawings will become obsolete
Validate designs within the design team; execute rework due to downstream feedback from Manufacturing Engineers and production teams	→	Use **PLM and Polarion** as sources of truth to enable more efficient downstream collaboration	→	Formalize role of downstream stakeholders in **agile design iterations**; use **3D models, rapid / 3D printed prototypes,** and **digital twins** to optimize product designs (e.g., manufacturability, cost, supply) before sending to production to create physical prototypes
Manually facilitate change requests (e.g., information search in multiple systems, impact analysis using tribal knowledge, phone/email communication)	→	No longer facilitate change control and shift focus to product innovation; follow a **standardized process** facilitated by **divisional change management resources**	→	Follow a **standardized process** facilitated by **centralized change management resources**

Key: Program X Enabler Industry 4.0 Enabler

Note: *Job canvases are not intended to capture full scope of responsibilities for a role; they are focused on identifying and describing select responsibilities which are evolving as a result of Industry 4.0 trends and enabling technologies*

SYSTEMS ENGINEER

	New Skills Needed Tomorrow *(Near Term Changes)*	New / Prioritized Skills for the Future *(Longer Term Changes)*
Human Capabilities	✓ **Digital Learning Agility:** Ability, confidence, and motivation to be a life long learner with regards to technology; continuously learning and applying new technologies at work	✓ **Articulating Value Propositions:** As product development shifts to more proactive ideation and innovation, greater importance will be placed on the ability to articulate a point of view with clear decision making frameworks to various audiences (e.g., functional, technical, customer) ✓ **Remote Meeting Facilitation:** Ability to create an inclusive and productive environment during remote working sessions where people are encouraged to challenge ideas and focus on optimal decision making over consensus building
Specialized Skills	✓ **Technical Change Management:** Proficiency in using structured process for implementing technical changes ✓ **Systems Engineering V-Model:** Understanding of the Systems Engineering v-model and how their role fits into the end to end process, specifically around new product development	✓ **Model Based Engineering:** Understanding of the concepts and enabling technologies ✓ **Agile Methodology:** Understanding of how to collaborate during design iterations as part of an agile team ✓ **Design Thinking:** Understanding of the iterative design thinking and how it can be used to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test
Technology	✓ **Polarion:** Ability to navigate its features, functionalities, and processes which are relevant to their role ✓ **PLM:** Ability to navigate its features, functionalities, and processes which are relevant to their role ✓ **SMART requirements:** Ability to translate voices into SMART requirements	✓ **3D Modeling:** Ability to use 3D models to create system requirements, workflows and models; ability to use models to collaborate digitally across the value chain ✓ **Industry 4.0 Technologies:** Ability to use additive manufacturing techniques, 3D models, rapid prototyping, digital twins, and AR/VR environments to execute design work ✓ **Software Engineering:** Understanding of how software is built and used differentiate products

Note: *New / prioritized skills of the future are intended to guide Client Co.'s upskilling and recruiting strategy. The primary goal is to retain and upskill existing talent.*

SYSTEMS ENGINEER

ILLUSTRATIVE TOOLBOX

Venus
AI-powered, voice-enabled digital assistant provides a conversational interface for all productivity-related tasks, from scheduling/reminders to finding answers to questions and checking the status of products and projects

Pro Write
Automated writing tool that uses machine learning and NLP to review technical writing and recommend updates to improve clarity, minimize risks, and better adhere to industry/enterprise standards for good writing requirements

One Model
A model and simulation based Systems Engineering tool that provides an environment to create dynamic engineering models tied to requirements

Immersive
VR development environment used to create virtual models and experiences (e.g., conceptual factory layouts, machine assemblies, and product demos) for internal and external stakeholders; enables real time collaboration on digital 3D designs and images

FUTURE DAY IN THE LIFE

6:30 am	Your alarm goes off. You get dressed, make yourself a quick breakfast, and drop your kids off to school. As a remote employee you have the flexibility to tend to your personal commitments before starting the work day.
8:30 am	You dial into your first meeting of the day which is with a Product Manager named Joe, to discuss a voice for a new product which you have been assigned to. During the meeting, Joe shares his screen and walks you through the customer voice in Polarion and you work together to translate voices into SMART requirements. As Joe documents the customer requirements, Pro Write recommends additional requirements to include and flags risks based on what has failed on previous projects. At the end of the meeting, you offer to take some time to create the system requirements and meet with Joe this afternoon for sign off. You ask Venus to set a meeting with Joe after lunch.
10 am	After your meeting, you assign system requirements to Product Engineers for decomposition into sub-system requirements, where applicable. You then mock up a systems model in One Model. As you annotate requirements throughout the model, Pro Write conducts real-time peer review and provides recommendations to clarify and standardize the wording and syntax for product specifications, part numbers interface requirements, and system designs.
1 pm	After lunch, you meet again with Joe to review the systems model. He reviews and approves the model. After the meeting, you ask Venus to set up a meeting tomorrow with your design team and Joe to review the customer and system requirements.
2 pm	Next, you dial into a design review for a new automotive sensor product you are assigned to. During this review session, you review the product's latest virtual 3D prototype. The Manufacturing Engineer in attendance provides feedback on manufacturability of the product. You then spend majority of the meeting viewing the model from multiple perspectives and discussing technical risks with the design team.
4 pm	You wrap up for the day by reviewing your calendar for tomorrow. Your first meeting is a customer review session intended to capture feedback on the latest virtual prototype for a new cable assembly product. You put on your VR goggles and open the latest virtual prototype in Immersive. As you flip through various perspectives of the model, you note a few talking points for the Product Manager to share during her presentation. Before logging out for the evening, you ask Venus to set a 10 minute connect with the Product Manager 15 minutes prior to the review session to clarify your notes and facilitation roles.

Note: *The Future Day in the Life is not meant to capture every task a role may execute in the future; it is intended to describe select tasks / ways of working which are evolving as a result of Industry 4.0 trends and enabling technologies*

Appendix III: Skills-Based Organization Overview

Skills-based organizations use skills as the fuel for a wide range of talent and business decisions, accelerating business agility and growth

These organizations meet business needs and better compete in this new world of work by unleashing the full potential of the workforce to build a more resilient organization.

- **Provide data** needed to drive workforce decisions
- **Enable rapid assessment and deployment** of skills
- **Improve career mobility** opportunities
- **Empower the workforce** to own their development

Building a skills-based organization means creating a shared "hub" as well as integrating skills through the "spokes" of various talent processes

SKILLS "HUB"

1 TALENT PHILOSOPHY

A shared approach across the organization regarding the value and prioritization of skills as the "red thread" of talent management – and how they will inform key talent decisions

2 SKILLS FRAMEWORK + COMMON LANGUAGE

A common language for skills and framework for skills across the organization – including human and specialized skills

3 DATA + TECHNOLOGY ENABLERS

A single source of truth regarding skills data – and a common and integrated suite of tools that enable you to sense evolving skill needs, track and evaluate skill levels in your workforce, match skill supply and demand, and develop and grow abilities

4 GOVERNANCE

A clear understanding of skills "ownership" across the enterprise, along with the structures and processes to enable skills-based organization adoption and drive change management efforts

"SPOKE" INTEGRATION POINTS

... And others, including Organizational Design and Culture

Talent Philosophy

A shared approach across the organization regarding the **value and prioritization of skills as the "red thread" of talent management** – and how they will inform key talent decisions

Key Considerations: Talent Philosophy

Organizations with a **more mature** skills-based talent philosophy:

- Develop an increased visibility and understanding of their workforce by assessing and incentivizing multidimensional skill-building
- Apply workforce strategy to drive business outcomes and create additional value
- Create the right governance processes to provide strategic direction, maintain alignment, and ensure cross-functional synergy
- Place skills at the center of the employee value proposition and use skills as an enabler of a broader workforce ecosystem
- Embed purpose and/or diversity, equity, and inclusion into skills-based talent practices

Talent Philosophy Maturity Continuum

Traditional	Developing	Integrating	Bold
Talent processes are **designed and conducted in silos without an overarching philosophy or approach**	**Some talent processes are connected and dynamic** – but decisions are still based on static elements such as roles, rather than dynamic business and talent needs	Talent processes are designed with a **consistent talent philosophy in mind** – but still operate without a clear "through line"	Talent processes are deeply interconnected, with **skills as a key data point weaving together the talent experience and informing key decisions**

Skills Framework

A **common language for skills and framework** for skills across the organization – including human and specialized skills

Key Considerations: Skills Framework

Organizations with a **more mature** skills framework:

- Introduce a cohesive language for skills that anticipates how work and skills will evolve
- Formalize a skills framework and common language that includes both human and specialized skills and a process to evaluate each type of skill using different approaches
- Assess and measure the workforce's ability to deliver
- Activate the workforce architecture needed to create new value
- Communicate broadly about the differences between each type of skill and how they should be measured and developed differently, and manage updates through a central governing body

Skills Framework Maturity Continuum

While many parts of the organization have created skills frameworks, **there is not a consistent approach, language, or method of application**

Some attempts have been made to define a **common language and skills framework** – including both skills and capabilities

A common skills framework, including both capabilities and skills**, is consistently applied to talent management activities**

Common, consistent framework and language across the organization, **woven into talent processes** and **used by leaders, managers, and workers**

Data and Technology

A single source of truth regarding skills data – and a **common and integrated suite of tools** that enable you to sense evolving skill needs, track and evaluate skill levels in your workforce, match skill supply and demand, and develop and grow abilities

Key Considerations: Data and Technology

Organizations with **more mature** skills-based data and technology:

- Architect an experience-based skills technology stack that enables the full adoption of skills across all talent processes and enhances the talent experience / value proposition
- Integrate technology partners that provide real intelligence around internal *and* external skills, enabling job matching and broad-ranging talent insights
- Place an emphasis on leading, future-focused skills data and sensing over lagging indicators of skills supply / demand
- Demonstrate the value of skills data to the business to drive decision-making
- Create meaningful, strategic data and technology governance to drive outcomes

Data and Technology Maturity Continuum

Traditional	Developing	Integrating	Bold
Skills data is unavailable or inconsistent for most workers	While skill evaluations and some skill data are being captured, **there is not a consistent approach to gathering and leveraging skills data**	There is an **integrated approach** to capturing skills data and making it available to the business and individuals in order to create better visibility across the organization	There is a **single source of truth regarding skills data** – which allows for sensing evolving skill needs, evaluating skill levels, and matching supply and demand, often through AI and ML

Governance

A clear understanding of **skills "ownership"** across the enterprise along with the structures and processes to **enable skills-based organization adoption** and **drive change management efforts**

Key Considerations: Governance

Organizations with **more mature** skills-based governance:

- Prioritize skills transparency and information sharing throughout the organization
- Make clear, centralized decisions around skills based on work outcomes with representation from each business unit/function
- Take a future-focused approach to owning and managing skills
- Drive impact and adoption of skills-based approaches throughout the organization
- Involve key stakeholders with decision-making power to influence business and talent decisions
- Engage with market alliances and partners outside of the organization to inform decisions

Governance Maturity Continuum

Traditional	Developing	Integrating	Bold
Skills ownership is non-existent, without key stakeholders or decision-making processes identified	**Skills ownership is unclear**; some key stakeholders are identified but decision-making processes are inefficient and/or ineffective	**Skills ownership is clear but highly decentralized** by business unit/function	**Skills ownership is very clear and centralized across the organization,** with robust processes, communications, and accountability mechanisms

Skills-based organization maturity model aligned to "hub" components

LEVEL 1: Traditional	LEVEL 2: Developing	LEVEL 3: Integrating	LEVEL 4: Bold
• **Talent Philosophy:** Talent processes are designed and conducted in silos • **Skills Data:** Skills data is unavailable or inconsistent • **Skills Framework:** Not a consistent approach, language, or method of application around skills • **Skills Governance:** Skills ownership is non-existent, without key stakeholders or decision-making processes identified	• **Talent Philosophy:** Some talent processes are connected, but decisions are still based on static elements such as roles • **Skills Data:** Some attempts have been made to define common language around skills • **Skills Framework:** Some skill data is captured, but there is no consistent approach around data • **Skills Governance:** Skills ownership is unclear; some key stakeholders are identified but decision-making processes are inefficient and/or ineffective	• **Talent Philosophy:** Talent processes are designed with a consistent talent philosophy in mind, but still operate without a clear "through line" • **Skills Data:** A common skills framework is consistently applied to talent management activities • **Skills Framework:** There is an integrated approach to capturing skills data and making it available to the business and individuals in order to create better visibility across the organization • **Skills Governance:** Skills ownership is clear but highly decentralized by business unit/function	• **Talent Philosophy:** Talent processes are deeply interconnected, with skills as a key data point informing decisions • **Skills Data:** Common, consistent framework across the organization, woven into talent processes • **Skills Framework:** Single source of truth regarding skills data – used for skill needs, evaluating skill levels, and matching supply and demand, often through AI and ML • **Skills Governance:** Skills ownership is very clear and centralized across the organization, with robust processes, communications, and accountability mechanisms
You might hear from your workforce…			
"I **don't have visibility into the degree to which my current skillset is a match for my current role** or any other role I might want to pursue. When I think about my organization's approach to skills, it **feels like a black box**."	"**I do a skills assessment once a year, but I have no idea where that data goes or how it informs my experience at my organization**. Is this even worth doing if I can't understand the value of it?"	"**I understand how my current skills map to the next level** in my current career progression, but I **do not have visibility into how that aligns to another position** in a different part of the organization."	"**I have a skills passport that I can use to understand how my current set of skills aligns to any other opportunity** in the organization**. I know how my organization is using my skills data** to predict and inform business decisions."

Where to start: skills-based organization roadmap to "spoke" components

Igniting the Future of Work through Skills

Leveraging Skills to Transform Talent Strategies

Using Skills to Inform Talent Management

4 Actualize the skills-based organization to reimagine the future of work and society

Strategy and Risk
Skills inform strategy; the Board risk Committee oversees risks related to skills gaps

Work Re-Architected
Rearchitecting work for purpose, potential, and perspective

Workforce Ecosystems
Work performed by a plurality of resources based on skills required to achieve work outcomes

Stakeholder Capitalism
Creating value for all including workers as human beings, enabled by skills development

3 Transform talent management into a new skills-based operating model

Performance Management
Data-driven, flexible, continuous, and development-oriented performance management

Rewards
Skills-based pay and rewards with frequent adjustments as skill and work needs evolve

Culture and DEI
Democratized opportunity, greater equity, and a more human-centric, diverse culture that better unleashes purpose

2 Progress toward a skills-based organization by expanding into talent adjacencies

Workforce Planning
Continuous skills planning based on more granularly predicting what skills and work will be needed in the future

Job Architecture & Levelling
Flexible work and skills architecture based on a simplified set of fewer and broader roles and levels based on type of work and skills

Leadership & Succession Planning
Continuous, data-driven, transparent, and inclusive identification of potential leaders

1 Inch toward a skills-based organization by transforming core talent practices

Learning & Development
Targeted upskilling and reskilling development experiences based on data-driven skills assessment and gap analysis

Talent Acquisition
Accessing talent to fill skills gaps, and selecting based on verified skills, capabilities, and potential

Mobility and Careers
Career exploration of opportunities – including roles, projects, mentors, and tasks – based on skills and enabled through marketplaces

Appendix IV: Sources

Data Sources

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