

The background of the slide features a complex, abstract graphic. It is composed of numerous thin, wavy lines in shades of blue and red. These lines originate from a dense, vertical column of small dots on the left side of the page and flow outwards towards the right, creating a sense of movement and connectivity. The overall effect is reminiscent of a data visualization or a network diagram.

How HR Can Look Ahead During Uncertain Times

A Draup Perspective

Conceptualized and Developed: September 2022

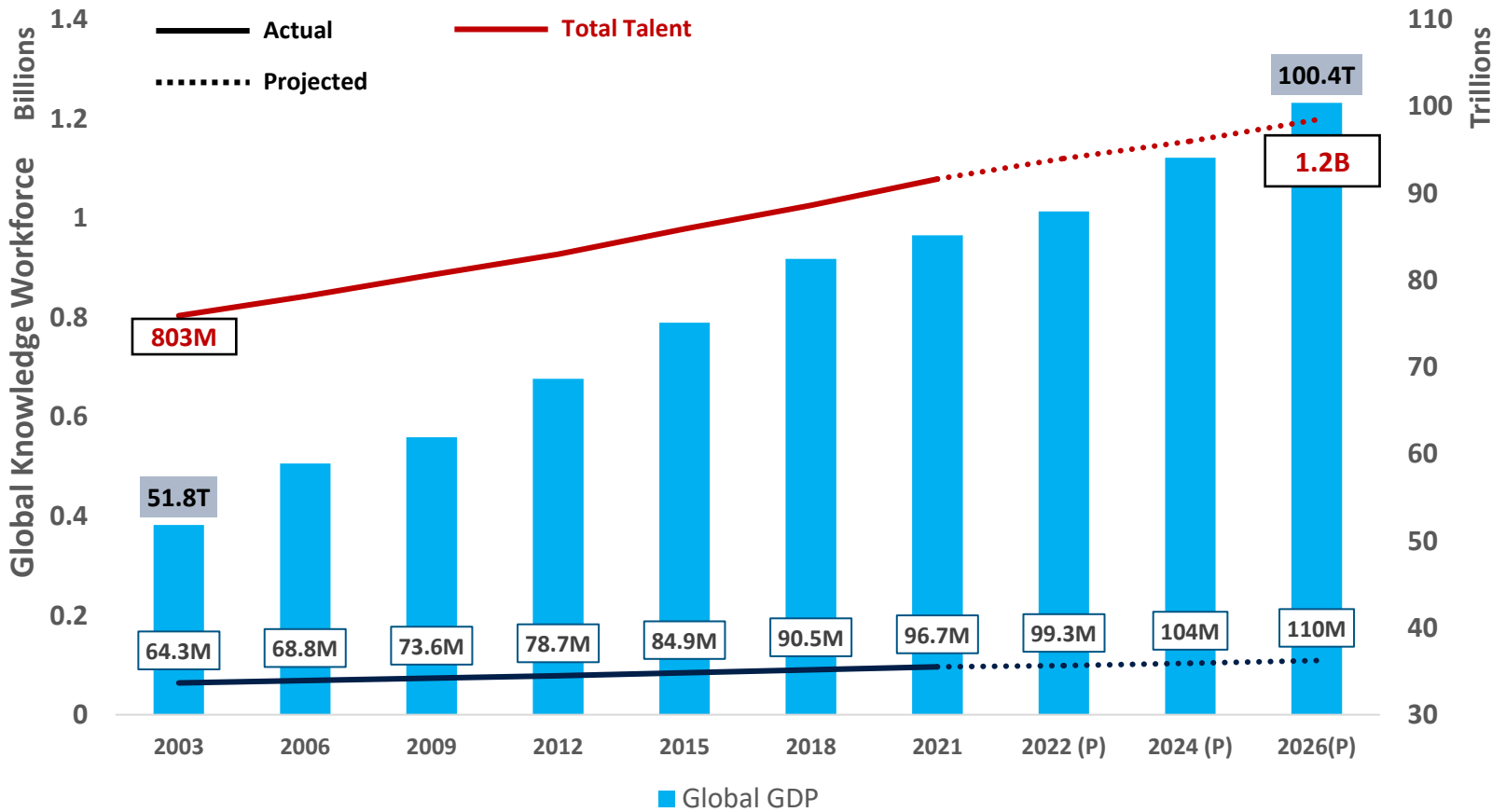
Supply of knowledge worker vis-à-vis global GDP - While the Total Knowledge Workforce has expanded over the period (1.65% CAGR), its growth has been slower than the GDP growth



Global GDP CAGR (2003-2021) 2.8%

Projected Knowledge Workforce – 1.2B (2026)

Global GDP and the Supply of Knowledge Workforce (2003-2022)



Key Insights

- While the **Global GDP** has grown at a **CAGR of 2.80%** (2003-2021), the talent pool of **Knowledge Workers** has only grown at **1.65%**, indicating the scarcity of skilled talent globally

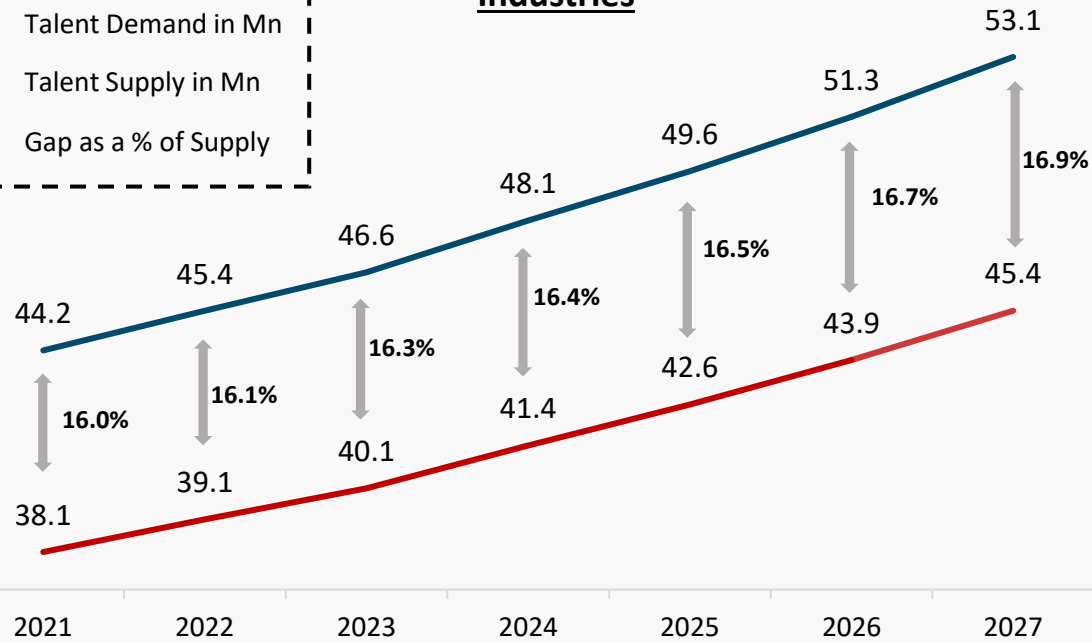
Source: The represented data is derived from Draup’s Proprietary Talent Module, World Bank national accounts data, and OECD National Accounts data files. The demand and supply data of knowledge workers has been triangulated based on Draup’s Talent module, secondary reports, news articles and research papers
 Note: Global GDP Data has been provided at constant prices based on US\$ 2015 value, from World Bank (<https://data.worldbank.org/>)

Frontline Workforce Demand Supply Gap in the US: Demand is expected to increase at a faster rate than the supply thus the demand-supply gap is expected to go on increasing over the years



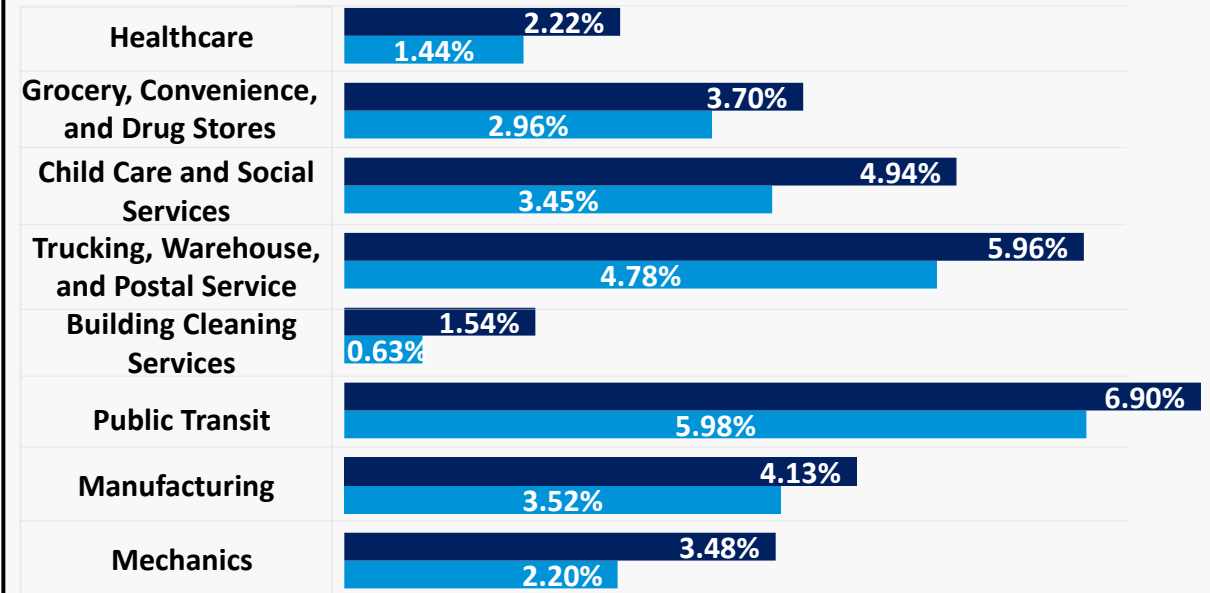
Workforce Demand-Supply Gap (In Mn) – major Frontline Industries

— Talent Demand in Mn
 — Talent Supply in Mn
 ↑↓ Gap as a % of Supply



Trend in workforce Demand-Supply Gap across major industries

■ Demand Supply Gap Growth CAGR1 ■ Employment Growth CAGR1



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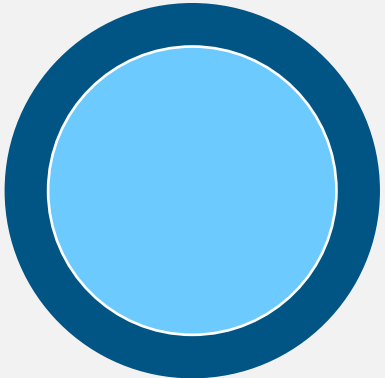
Note: ¹CAGR is for the period 2021-27

Source: The demand and supply analysis has been conducted using employment and job vacancies data from Draup's Proprietary Model and BLS (Bureau of Labor Statistics - USA).

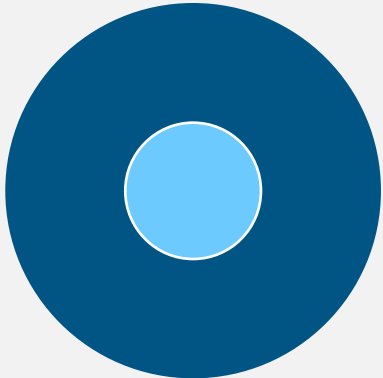
The pandemic has made employees re-evaluate jobs - >70% of the employees want flexible work to stay post-pandemic while the importance of pay and benefits has reduced in the post-pandemic period



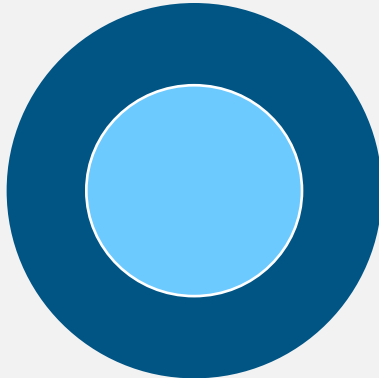
How are employees evaluating job opportunities?



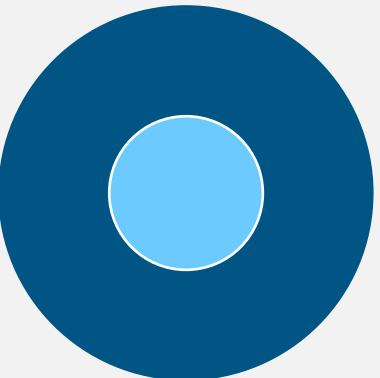
Work Hours Flexibility



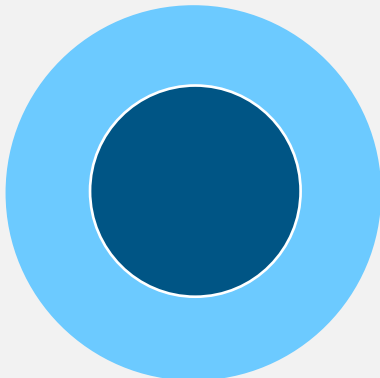
WFH/Remote Work Opportunity



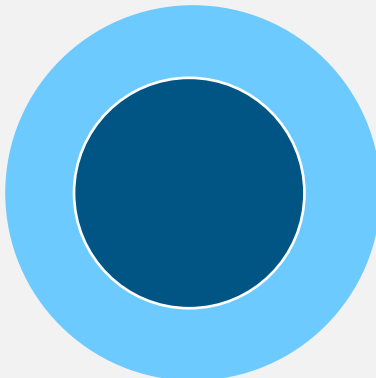
Work-Life Balance



Employee Wellness



Pay and Benefits



Job Security

Pre-Pandemic

Post-Pandemic

The size of the bubble denotes the importance given by the employees while evaluating new job opportunities

26%
workers are planning to reassess career goals¹ as per Microsoft Work Trend Index

64,000
fewer women employed or looking for work, indicating child-care issues are still in play²

55%
of employees say their productivity increased while working remotely⁴

Key Insights

73%
of employees want flexible, remote work options to stay¹

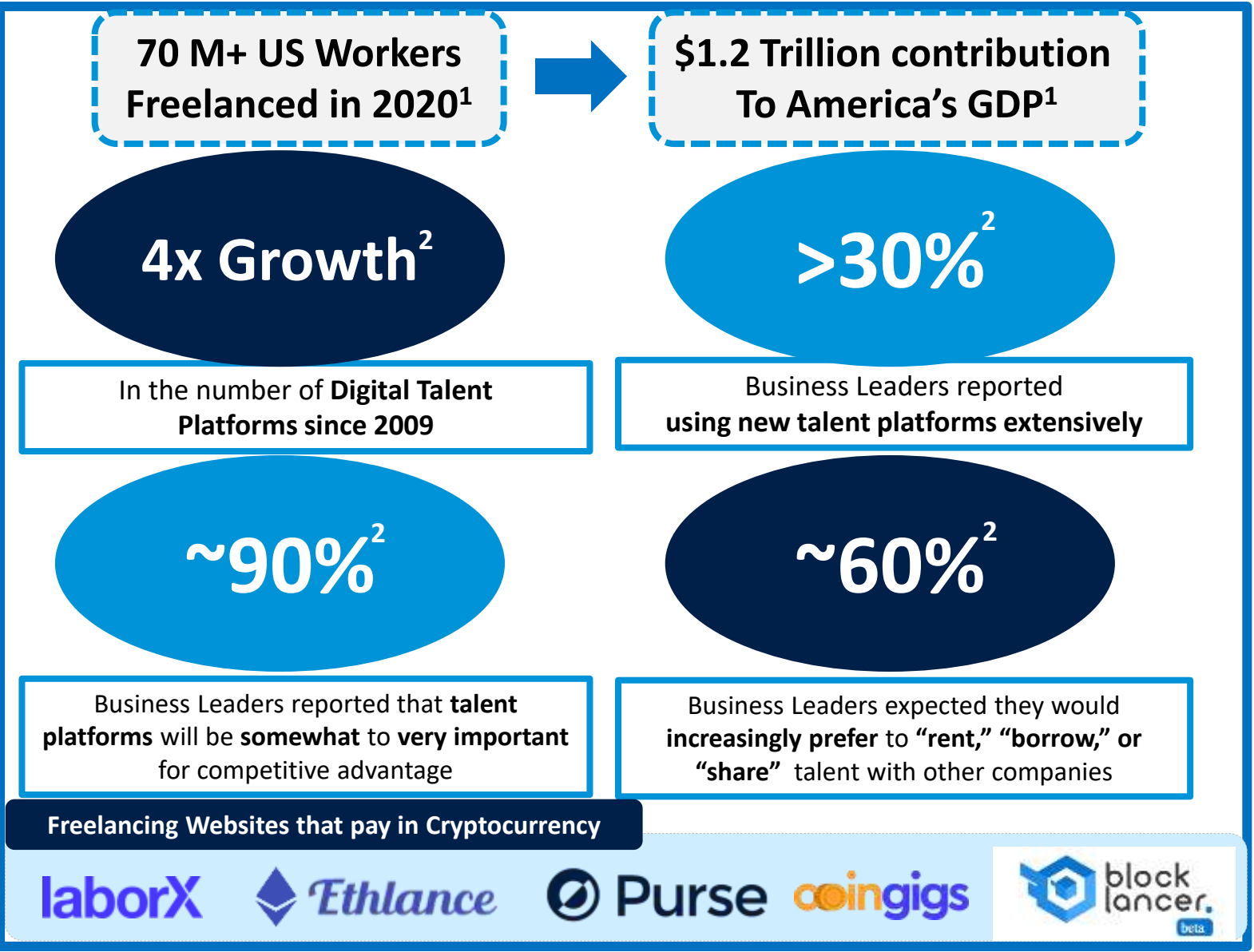
87%
of employees are more likely to stay with an employer who looks after their well-being and health³

71%
of employees said they are concerned about less flexibility in working hours⁵

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Source: Draup's ML model that tracks 2M+ News articles, reports, business intentions, business leaders' statements, and press releases etc., on a periodic basis
1. Microsoft Work Trends Index, 2. Washington Post (05/07/2021), 3. Forbes Business Council survey, 4. FlexJobs survey, 5. The Limeade Institute's Employee Care Report 3.0

On-demand Workforce, Freelancing and Crypto: In the Post-Covid-19 era, talent platforms like TopTal, TalMix, BrainTrust, UpWork are gearing up to play a more significant role in closing the skills gap



Marketplaces for Premium Talent

- Experts can be hired for project work or embedded in project teams.
- The project assignments can range in length from a few hours to more than a year.
- Hard-to-find capabilities, such as software engineers, UI/UX designers, project managers and scrum masters, financial modelers, and even interim CEOs

Digital Freelancing Marketplaces

- Match individuals with companies for discrete, task-oriented projects—for instance, designing a logo or writing a project proposal
- Wide variety of skills, and payment is often based on per completed task

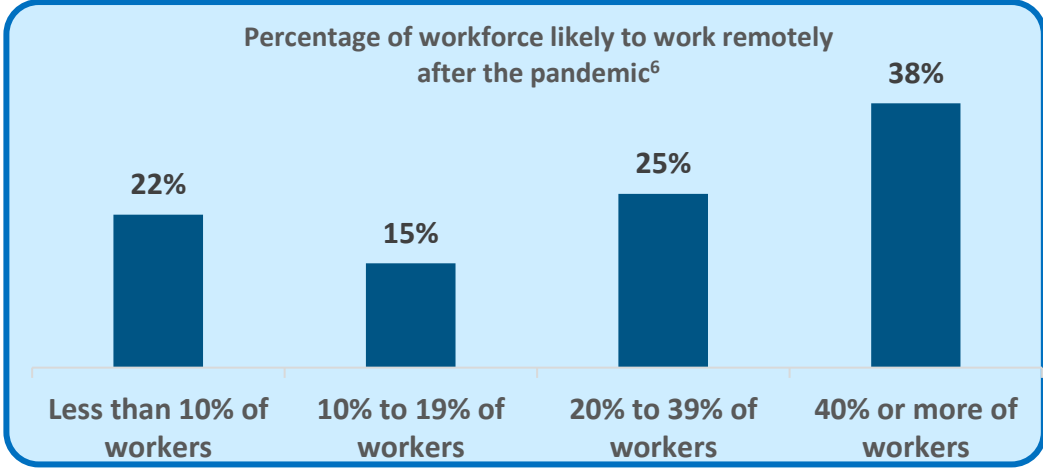
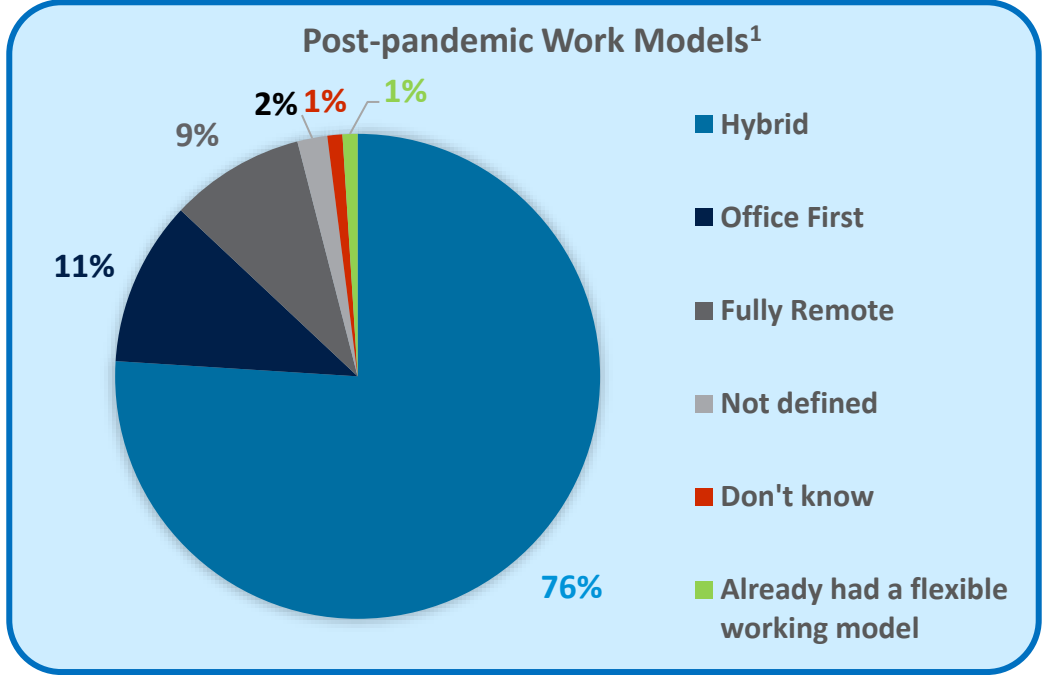
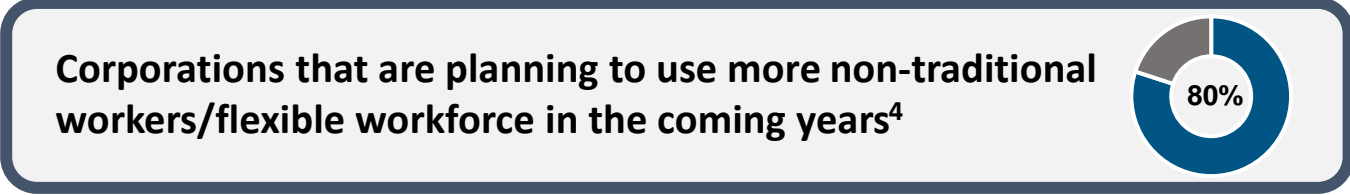
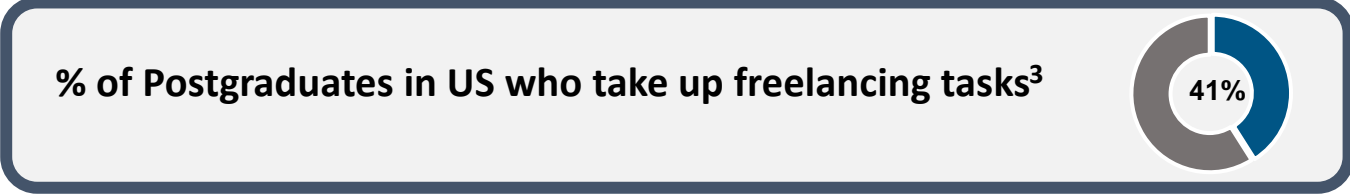
Crowdsourcing Innovation Platforms

- Reach large user communities with sophisticated technical skills, and thus tap into a worldwide pool of experts to generate solutions to specific challenges
- Allow immediate exposure to a web of external experts with highly specific skills
- Offer prizes as a reward for the winning solutions

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Source: 1. "The MBO state of Independence report", 2. "Building the On-Demand Workforce," by Harvard Business School and BCG

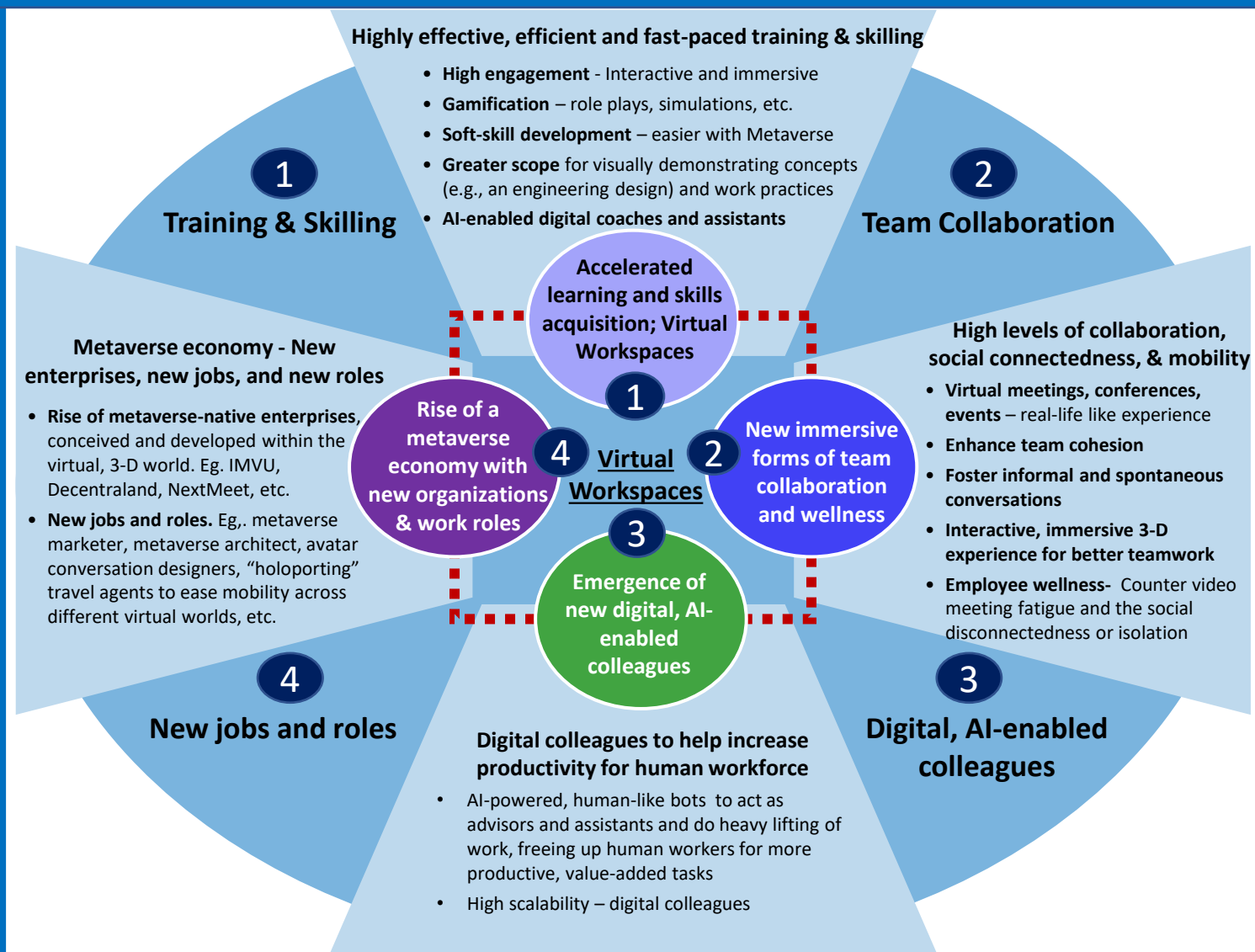
By 2027, 86.5 million people will be freelancing in the US



Source: 1. "Top hybrid work trend stats from global companies for 2022" by TravelPerk, 2. Report by Gallup, 3. "Financial Services Hiring Trends 2022" by Empaxis, 4. Intuit 2020 report on the future of gig work, 5. Wonolo and Statista, 6. The Conference Board Online Survey, 2021

Metaverse is poised to revolutionize the future of work through new dimensions to workforce training, skilling, team collaboration, addition of digital AI-enabled colleagues, and the rise of a metaverse economy with new jobs and roles, in virtual workspaces...

Metaverse to re-define the way workforce learns, works and becomes future ready











Increasing adoption of Metaverse - Illustration

User	Metaverse Application
	<p>Virtual Workspace Nth Floor by Accenture, based on Microsoft's Mesh application</p> <p>Virtual Training Purchased 60,000 virtual reality (VR) headsets for virtual training</p>
 	<p>Virtual Training Startups like Zepeto build VR training worlds</p>
 	<p>Virtual Music Concerts FORTNITE</p> <ul style="list-style-type: none"> • In Fortnite, popular musicians such as Travis Scott and Ariana Grande have performed in virtual concerts. • In April 2020, Travis Scott became a digital avatar for Fortnite with >12 mn fans
 	<p>Start-ups</p> <p>Metaverse Application</p> <p>Avatar-based immersive reality platform for interactive working, collaboration, and learning solutions</p> <p>Digital Humans - AI-powered customer experience ambassadors</p> <p>Emotionally-responsive digital humans</p> <p>Uses ECG electrodes to decode neural signals so that users can control objects with their minds</p>

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...and as metaverse draws on an ensemble of different technologies, including AI, blockchain, AR, VR, digital humans, 3D reconstruction, wearable tech, digital currency/ cryptocurrency, and Internet of things (IoT), **there are consequential benefits and challenges, but as Metaverse moves from being nascent to mainstream, challenges will be addressed**

		Benefits	Challenges
Artificial Intelligence (AI)		<ul style="list-style-type: none"> • Avatars made possible for Metaverse; language processing • Talent marketplaces • Research, education assistance e.g. NAO, Astra, Spot, Optimus 	<ul style="list-style-type: none"> • Bias problem/ trust-deficit • Data security and storage • High computational power
Blockchain		<ul style="list-style-type: none"> • Easy employee records and skill verification • Inter-operability and decentralization • Decentralized Autonomous Organization (DAOs) & NFTs* 	<ul style="list-style-type: none"> • Scalability • Inefficient technological design • Lack of Privacy – public ledger system
Augmented & Virtual Reality		<ul style="list-style-type: none"> • Efficient and effective hybrid and remote learning and skilling • Virtual workplaces - spontaneity, interactivity, fun of teamwork • "Metaverse" employee experience 	<ul style="list-style-type: none"> • Harassment • Cybersecurity • Addictive design • Privacy & data rights • Ubiquity****
Digital Humans/ Social Bots		<ul style="list-style-type: none"> • Human like AI and ML driven conversational bots • Ability to read and understand emotional cues/ body language • Highly scalable; play roles of coaches/assistants/ colleagues 	<ul style="list-style-type: none"> • Social values driven design and responsible development of technology
Internet of Things (IoT)		<ul style="list-style-type: none"> • Data management • Integration • Real-time simulations • Smart buildings & desks • Efficiency & productivity • Mobility and agility 	<ul style="list-style-type: none"> • Connectivity/ limited bandwidth • Inter-operability • Scalability; Cyber-security
Digital Currency/ Cryptocurrency		<ul style="list-style-type: none"> • Enable users to transfer value while they work and socialize in the 3D digital world • Financial gains – Eg. crypto can be used to buy virtual real-estate 	<ul style="list-style-type: none"> • Inclusion and ubiquity • Inter-operability • Economic factors
Wearables Tech		<ul style="list-style-type: none"> • Virtual locomotion & sensing technologies** Eg. Haptic Glove • "Quantified self" development • Network insights e.g, heatmaps 	<ul style="list-style-type: none"> • Risk of misuse • Manipulation/ fraud • Health impact • Distraction Vs. Intention
3D reconstruction		<ul style="list-style-type: none"> • Ability to create 3D from 2D. Eg. RawNeRF, Instant NeRF with AI • Digital Twins; real time tracking of physical objects in 3D*** • Vivid, real-life - metaverse highly depends on 3D reconstruction 	<ul style="list-style-type: none"> • Realism – Eg. physical properties of materials like weight, fold etc. • Inter-operability; Scalability

The foundational challenges of today's digital experiences need to be tackled before the metaverse can realize its full potential.

- World Economic Forum

Despite its vast future promise, the metaverse is still in its infancy in many respects. Significant obstacles could stymie its future progress: the computing infrastructure and power requirements for a full-fledged working metaverse are formidable. Today's metaverse consists of different virtual worlds that are not unified.

- Mark Purdy, Economics and technology advisor London, UK

Employers might also fear harassment in metaverse platforms with collaborative features — a longstanding challenge in the workplace. Research shows that biased behavior and sexist comments don't dissipate when more meetings take place virtually.

- Venture Beat article (Jan '22)

The lack of interoperability and uniformity between the various metaverse platforms is one of the biggest challenges.

- Saeed Elnaj, Forbes Councils Member

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*Non-Fungible Tolens; **Eg. leg attachments to create realistic walking experiences; ***Eg. Perceptus Platform enables real time tracking of physical objects in arbitrary 3D environments; ****ubiquity of identity and access, of devices, etc.

Data and Analytics skills emerging prominence across functions

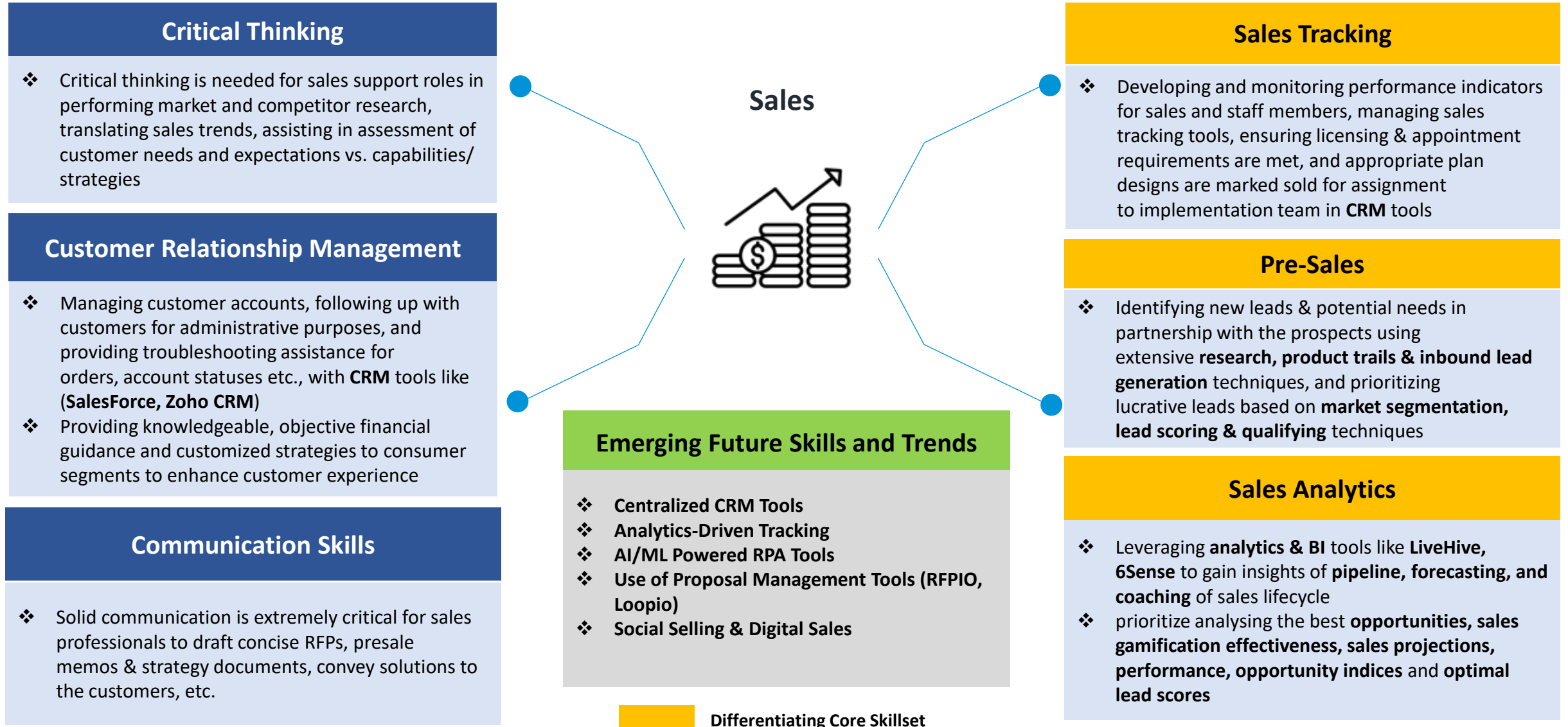
Skills Clusters / Job family	Finance	HR	Sales	Digital Marketing	Procurement
Data mining and Data analysis (Skills)	Job Role Financial Analyst Transaction analysis, Credit analysis, Risk analysis, Fraud analysis, Customer sentiment analysis, Cost tracking, Risk Forecasting	Employee behavior analysis, Performance analysis, Candidate sorting, Employee retention analysis	Sales target tracking, Sales per channel analysis, MRR Inspection	Digital/Web Analytics, Consumer behaviour analysis, Promotions Planning, Visitor conversion rate analysis,	Rogue spending analysis, Vendor management, Order processing
Data Forecasting and Predictive Analytics	Algorithmic trading, Cashflow prediction, credit worthiness prediction, P&L forecasting, Budget forecasting	Attrition Forecasting, Churn prediction, Hiring Difficulty forecasting	Sales growth projection, Deals slippage forecasting, Sales quota prediction	Product life cycle analysis, Sales & Volume projection, Marketing Budget forecasting	Order fulfilment prediction, Inventory forecasting, Demand forecasting
Big data	Fraud risk monitoring, Transaction monitoring, Stock Monitoring	Application tracking, Resume shortlisting	Price optimization, Lead tracking	Consumer insights monitoring, Web traffic monitoring	Order risk mitigation, Market trend tracking
Digital tools	TradingView, Asset-Map, Capital IQ, Bloomberg, Reuters, Pitchbook data	Oracle HR Analytics, Visier People, IntelliHR, Performyard	Salesforce Sales Cloud, Hubspot Sales Hub, Gong, Groove	Google Data Studio, Oracle OBI, Datorama, SAP Marketing Cloud	SAP Ariba Procurement, Oracle Cloud ERP, Zycus

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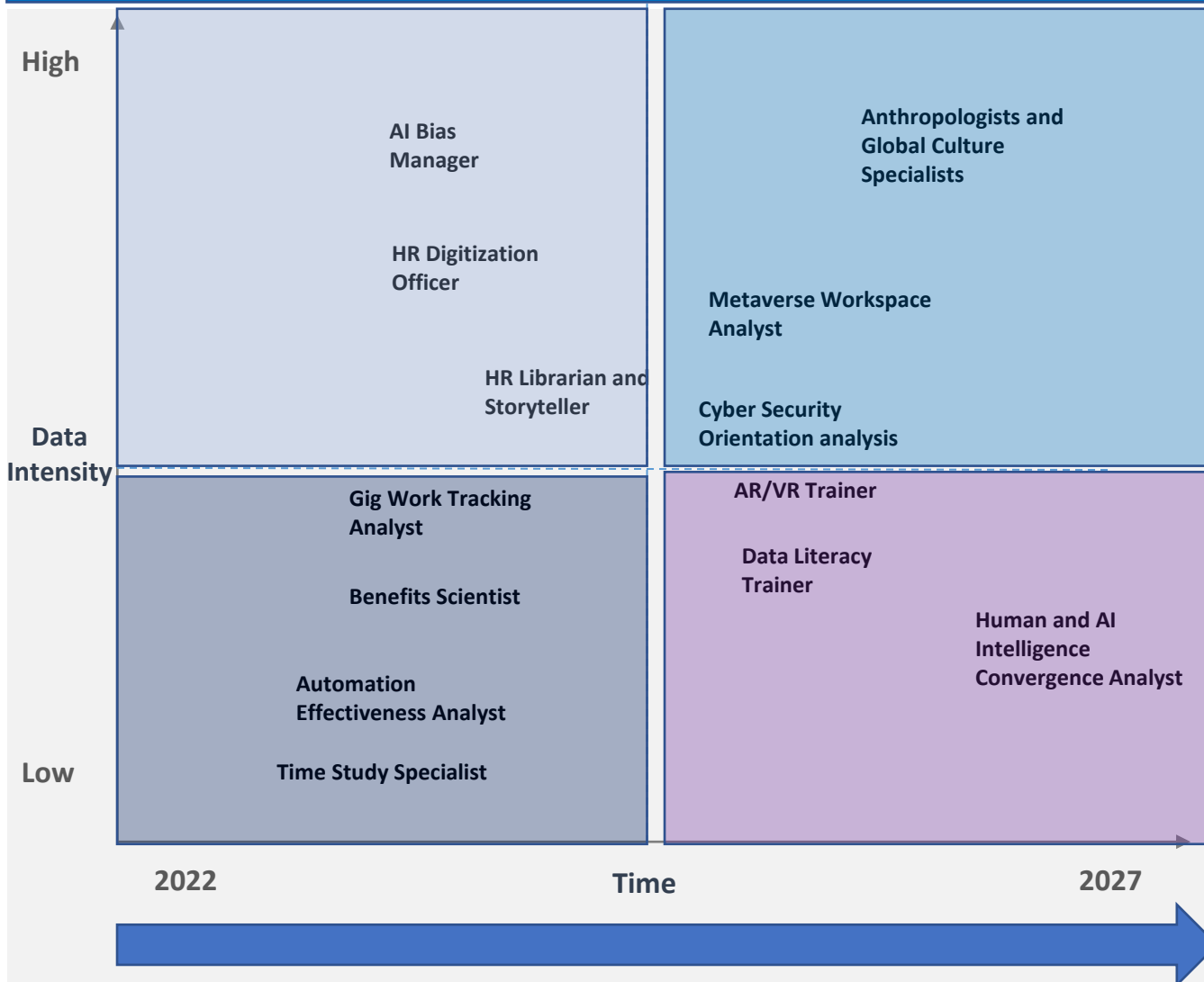
Source: Draup's proprietary database; Draup tracks skills of 4,500 job roles and tracks data for 700 Mn professionals globally

Note: Above mentioned skills for individual job functions are not exhaustive. Digital tools mentioned are illustrative and not necessarily in-demand tools. Skills such as Data modeling, Data wrangling, Visualization are underlying skills across functions and hence not been considered

Skill Clusters for Sales job family: Through the study of JDs, six skill clusters were identified, of which three skill clusters are core to Sales job family; Centralized CRM Tools, Proposal Management Tools and Social and Digital Sales are some of the emerging Future skills in the functions



Future HR Roles – Draup Hypothesis



Illustrative Roles

(based on limited forward-looking interviews n = 10 HR leaders)

Some exciting roles that came up on our interviews → May have a transformative effect on data/AI journey of companies:

- **Benefits Science** - We know we have to compete hard in benefits across global locations, so evolving that into a structured science may be advantageous (a lot of this is currently outsourced to administrators). Taking in-house responsibility for this may play a competitive advantage (the analysis part and not the administration)
- **Data Literacy Training** - HR will play a more significant role in Data Literacy
- **Cyber Security Responsibilities**
- **Anthropologists and Global Culture Specialists** - As the complexities of working across cultures increase, HR may need roles such as these
- **Automation Effectiveness Measurement, etc.**



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