HOW AUTOMATION AND AUGMENTATION WILL CHANGE THE FUTURE OF HR

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HOW AUTOMATION AND AUGMENTATION WILL CHANGE THE FUTURE OF HR

In the last decades, new technologies have revolutionized and challenged the business world. Robots are now assisting workers in heavy-duty tasks; communication software is enabling virtual team collaboration; and RPA technologies are automizing processes. Technologies have fundamentally changed the way we work and made our daily challenges easier to tackle. The current pandemic has underscored the importance of digitized working for continuing and accelerating business operations.

HR, as the "people" department, faces prominent challenges that require rapid reaction and decision making. For one, HR needs to support organizations in responding instantly to changing demands in the workplace – such as enabling remote work, virtual leadership and collaboration and designing safe work environments. Secondly, it needs to be prepared for the challenges to come once the pandemic subsides – such as supporting organizations in recovering from harsh business impacts, rethinking the employee experience and boosting onand offline workforce productivity.

To fulfill these additional requirements, HR must accelerate its own technological development. In doing so, it will be able to speed up operations and focus on value-adding tasks, such as building a future-oriented employee experience. However, most HR departments stagnate in their technological development because they insist on sticking to established methods and processes and are slow to implement innovative approaches and applications despite the numerous benefits of using new technologies.

Automation technologies, for instance, have the potential to improve operational efficiency by taking over monotonous activities. Since automation encompasses the use of technology to conduct repetitive, rule-based tasks previously operated by humans, it could be applied to HR jobs such as payroll clerks. HR assistants and recruiting assistants. Employees whose tasks will be automated could dispose of free capacity and, ideally, be redeploved into other activities.

Augmentation technologies, on the other hand, could improve HR decision quality. Augmentation is defined as the use of technology to assist humans in processing their tasks and could be applied to knowledge-loaded roles in HR, such as labor relations specialists or talent managers. It benefits especially from the collaboration between humans and technologies to achieve enhanced performance (Matarić, 2017). Employees impacted by augmentation keep the essence of their job while realizing it in a more effective or efficient way.

Overall, automation and augmentation technologies have the potential to accelerate HR and its organizational role as we know it and sustainably shape the future of job roles in that field (Forbes, 2019). But is it necessary for HR to act now? The answer is easy – yes, it is! Many jobs will become redundant due to automation or enriched by augmentation in the coming years (The Future of Jobs Report, 2018), requiring the right and early preparation for both employees and organizations. The HR department is no exception. Additionally, for HR to contribute to organizations, it must become familiar with the use of new technologies, equip the workforce with future-proof skills and transition into a successful future.

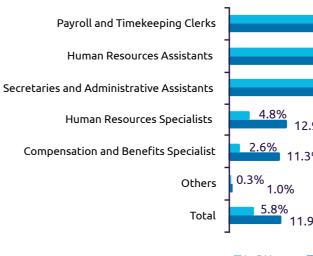


With the rapid expansion of automation and augmentation, it is necessary to assess the specific impact on HR and determine its status quo – particularly since the HR department should not only be able to boost its own value-creating performance but also support the organization in shaping its technological future.

We analyzed a database of over 87,000 HR jobs with our partner Faethm (see www.faethm.ai) to assess the impact of emerging

Traditional HR roles under threat

The HR workforce can be sorted into roles that will be highly impacted by automation and those that will mostly be affected by augmentation. However, depending on specific characteristics, some roles can be affected by both.



In 5 Years
In 10 Years

Figure 1 Automation impact on traditional HR roles

Figure 1 shows the predicted impact of **automation** on a variety of traditional HR roles in five and ten years as well as an overall prediction concerning HR roles. Automation includes technologies such as process automation or mobile robotics substituting tasks operated by humans in today's world.

"Overall, automation technologies have a moderate impact on the HR workforce with approximately 12% of HR jobs being automized within the next ten vears."

Then there are certain job roles in HR, such as the labor According to our analysis, **5.8%** of HR job roles will be automated in the next five years. This number will increase to relations specialist, that are affected by automation to a almost 12% in the next ten years, indicating a need for action very small extent: less than 0.3% of those job roles will be when it comes to renegotiating tasks or reskilling affected HR automated in the next five years and only 1.0% will be replaced employees. For example, the payroll and timekeeping clerk by automation technologies in ten years. HR roles like these are a traditional role defined by repetitive and administrative typically those that will be impacted by, but will also profit from, tasks, including the processing of time and payroll data and the augmentation since they require extensive human interaction preparation of paychecks (O*NET, 2019), will largely be replaced and knowledge to carry out non-repetitive, complex tasks. by automation technologies. Within the next five years, 43.7% of this role will be affected by automation, most of which will be driven by process automation technologies. In ten years, almost 70% of this role will be redundant, calling for awareness and action. 5



technologies on HR roles and determine whether the common HR target operating model still fits the changing demands (see Appendix A for details). As a base for our analysis, we collected information on current HR job roles in the market and assessed the impact of various automation and augmentation technologies via Faethm on them.

43.7%	69.9%
45 1%	
	43.7% 45.1% 43.4%

Administrative roles such as the HR assistant will be equally affected by automation, with more than 20% of these roles being automated in the next five years and around 45% of the job roles becoming redundant in the next ten years. As with the payroll and timekeeping clerk, much of the automatized tasks will be operated by process automation technologies.

Other roles that include some repetitive tasks, such as the compensation and benefits specialist, face a much smaller impact of automation. The specialist will face only 2.6% of his or her role being automized within five years, and 11.3% in ten years, leaving some room to take on additional tasks.



Figure 2 Augmentation impact on traditional HR roles

Augmentation is the use of technology to assist humans in completing their tasks. It comprises technologies such as people analytics to facilitate decision making or the use of augmented reality, for assisting training courses, for example. Augmentation will predominantly impact HR roles that are knowledge-based and require human interaction and complex problem solving. One example is the labor relations specialist, with tasks typically including contract negotiations and consultations on labor relations issues. This role will be augmented by 15.7% within five years and 47.7% in only ten years (see Figure 2). It will profit from the increasing augmentation of tasks thanks to massive capacity gains through fast decision-support (e.g. researching new court rulings) and new technologies taking over time-consuming administrative tasks, such as compiling contracts or collecting data from legal documents (through OCR).

This development is akin to the predicted augmentation impact on HR roles, such as the industrial-organizational psychologists or training and development managers. Such roles will be enhanced with augmentation technologies, resulting in around 15% being augmented in the next five years and close to 43%–45% in the next ten years.

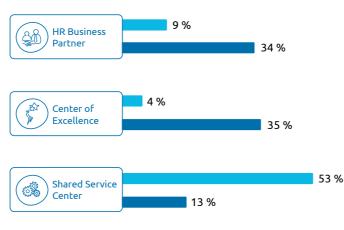
A dissolving target operating model?

Closely connected to the impact on job roles is the question how "future-proof" the prevalent HR operating model is. The way HR departments operate is often based on a model by Ulrich (2005; 2012) with three columns: Shared Service Center, Center of Excellence, and HR Business Partner. Ulrich argues that the HR department should, first and foremost, add value to the business and its structure should be based on the business model. However, reality rarely reflects this. Today, HR is mostly stuck to administrative roles, creating cost within the company, but generally not engaging in value-creating activities for the company or any strategic roles.

Taking the HR roles associated with this type of target operating model, Figure 3 illustrates the impact of both automation and augmentation on the three-column model (see Appendix B for details). In total, over **15%** of today's HR job roles will be supported by augmentation technologies in the next five years. This number will increase to more than **35%** in the next ten years, calling for the urgent development of specific training programs to upskill the affected workforce.

"Within only 10 years over 35% of the traditional HR workforce will face massive changes due to augmentation."

The results indicate that traditional HR roles are impacted by both automation and augmentation making the necessity to change the way HR works even more prominent. However, not only traditional HR job roles will be affected by automation and augmentation in the future, but also the HR operating model.



Automation risk in 10 years
Augmentation risk in 10 Years

Figure 3 Technology impact on the traditional TOM

"New technologies will challenge the HR organization by making parts of the traditional operating model obsolete."

Over **50%** of HR roles within the **Shared Service Center** will become obsolete within the next ten years. This is not surprising since most of the tasks handled within a Shared Service Center are administrative, repetitive and can be replaced by process automation and other technologies. Augmentation plays a less prominent role however, with an impact of 13% within a ten-year time span.

Equipping the HR workforce with future-proof skills

HR employees will need new skills to tackle the challenges ahead and shape the HR department and organization of the future. Among the most-needed skills are analytical skills enabling employees to interpret data (for example on workforce productivity and containment) both for onsite and remote work provided by machines, entrepreneurial spirit to drive organizational change and digital literacy to make use of

Zoom: The evolution of a labor relations specialist



Figure 4 Transition path with augmented technologies

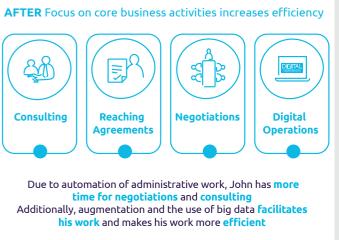
Imagine John, a typical labor relations specialist at a center of excellence. He is mainly responsible for advising HR on compliance, consulting management and drafting contracts. In addition, John spends a substantial amount of time on administrative work (gathering information, researching changes in policies and running errands). The administrative tasks often consume more time than planned, which leads John to neglect his core responsibilities or switch tasks frequently, resulting in lower productivity.

New technologies will help employees like John focus on value-adding activities such as negotiations and consulting and increase their productivity immensely. For example, providing John with figures on recent court rulings via a specifically developed algorithm will save him a considerable amount of time. Now, John can focus on reviewing the results instead of compiling the information. This allows him to reach agreements faster, concentrate on his core responsibilities and work more efficiently. Augmentation of his job as a labor relations specialist will facilitate his work and shift his focus to valuecreating core business activities. Quite the opposite impact can be observed for the **Center of Excellence** and the **HR Business Partner**. Both will face an augmentation impact of over **34%**, underlining that knowledge workers will profit from balanced collaboration between technologies and humans. Augmentation will support their efficiency and decision-making quality through, for example, analytics support and freed-up capacity to focus on complex tasks that require their full knowledge and expertise.

This massive impact of emerging technologies emphasizes that HR needs to reinvent itself – not only its roles and necessary skills, but also the way it operates.

new technologies. Three possible approaches will ensure that HR employees develop the necessary skillset for the future: upskilling, reskilling, and recruiting.

If the current HR role is mainly impacted by augmentation, **upskilling** measures will allow the workforce to stay up to date and perform better (See Figure 4).



To ensure that employees with jobs affected by augmentation develop the right skillset for the future, a customized upskilling approach allows them to acquire additional skills and develop into their changing roles. The starting point on the path to iob augmentation is a comprehensive gap analysis between current and required skills before designing specific training programs for the relevant role. John's journey could start with a mindset workshop to help him develop a digital mindset and boost his digital skills by offering tailored online courses. The acquired knowledge could then be enriched by face-toface training, including tool-related case studies to boost his technological literacy. In this training environment. John can try new tools, receive feedback on his development, and take part in additional coaching sessions. Thanks to continuous learning, John will constantly update his skills, which will support him in being highly efficient at his job.

Certain jobs will be heavily impacted by automation. The challenge for these jobs will be to find other roles that include the smallest skill gap compared to the current position. **Reskilling** measures make it possible to train the current workforce for new roles (See Figure 5).

Zoom: Reskilling from payroll clerk to job analyst

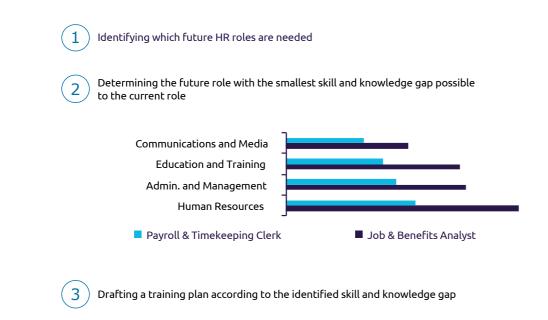


Figure 5 Transition path into new roles

Imagine Clara, a payroll and timekeeping clerk at a shared service center. Her job mainly consists of compiling time and payroll data. Due to its repetitive character, this specific role is heavily affected by automation technologies and will become redundant in a few years. To offer Clara a promising perspective, it is important to first identify HR roles needed in the future. Secondly, the future HR roles with the smallest skill and knowledge gap compared to Clara's current role must be identified. Our analysis shows that payroll and timekeeping clerks could transition into the role of a job and benefits analyst since the knowledge and skill gap is manageable. To best develop into her new role, Clara will have to improve her human resources knowledge and analytical skills. A customized reskilling approach can be drafted to help Clara identify individual skill and knowledge gaps and support her in transitioning into a new role.

The first reskilling step in Clara's case could be a future role dialogue where she will set up an individual development plan with her talent manager, before participating in a data mindset workshop. Afterwards, Clara could improve her skills via specifically designed virtual courses, for example on analysis methods and interpretation of data. Additionally, phygital trainings with participants, both on site and virtual, could support her development by enabling her to use new tools and techniques. To ensure a sustainable and successful reskilling, Clara could be supported with coaching sessions to reflect on her competency development.

REINVENTING HR TO STAY RELEVANT AND ADD VALUE TO THE BUSINESS

Without a comprehensive and considered approach, the HR department known today will become obsolete due to automation and augmentation technologies. Administrative work will be automized and employees will carry out HR tasks

Future HR strategies

We have identified three essential strategies for HR to react to current and future challenges and move forward, remaining a relevant and competitive part of the organization (Capgemini, 2018). Figure 6 illustrates the selected strategies and showcases three exemplary future HR roles that both fit these strategies and require the skills necessary for an innovative, strategic HR department.

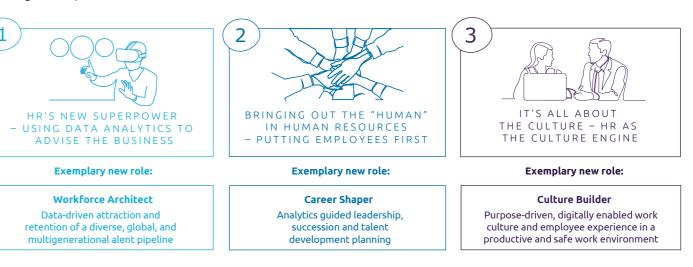


Figure 6 Future HR strategies (Capgemini, 2018)

The first strategy centers around the use of data analytics in Finally, the third strategy for the HR department of the future advising the business. An exemplary future role is the workforce builds on HR as the digital culture engine. This strategy will architect, whose responsibility will be the attraction and direct HR in establishing a purpose-driven, innovative and digital retention of a global, multigenerational, and diverse talent work culture to increase organizational efficiency and employee pipeline. This role will also be able to deliver real-time data to contentment while building a safe and productive physical fast-forward decision making and react instantly to changes in work environment that fosters well-balanced on- and offline the workforce. collaboration. An exemplary future role is the culture builder, who supports employees in shifting from an "employee" The second strategy puts emphasis on the "human" part of experience to a digitally enabled human experience in a changing, heavily digitized world.

The second strategy puts emphasis on the "human" part of human resources. That is, improving the employee experience by anticipating and understanding the workforce's needs. An exemplary future role is the career shaper, who guides leaders via the use of analytics and oversees succession and talent management planning. with self-service applications and AR applications. In order to make HR, as a department, fit for the future and able to shift towards a model that delivers value to the company, a change in strategy is needed.

A glimpse into the future of HR operations

The future HR strategies build on a data and technologydriven approach that will reshape the HR department as we know it today. But how will HR operations change leveraging the potential of new technologies and what aspects does a future-proof operating model need to incorporate them? Figure 7 illustrates HR operations along the employee lifecycle that benefit immensely from the use of automation and augmentation technologies.

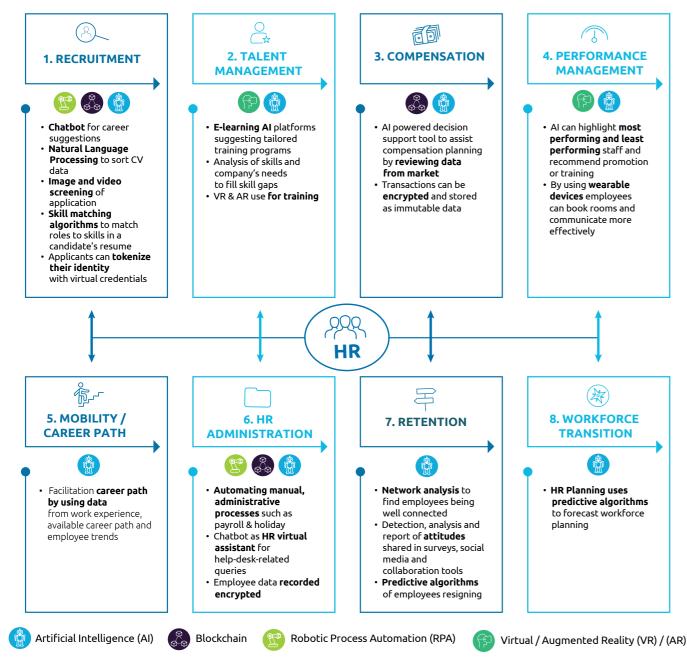


Figure 7 Overview of HR Technologies

Within recruiting operations, automation technologies such as natural language processing (NLP) can be used for matching CV data with job profiles, which is the most time-consuming activity of a recruiting specialist. Shifting these activities to automation technologies (e.g. RPA, OCR, NLP), not only makes traditional roles redundant, but also unleashes resources and time that can be used in value-adding tasks. Recruiting operations could further change using predictive analytics. For example, if the business strategy focuses on the development of cloud-native products requiring special know-how, HR experts such as a workforce architect could derive talent gaps and training needs based on predictive workforce analysis, offering proactive recommendations on hiring and talent development needs. Additionally, technologies such as NLP offer the opportunity for an objective application to job match. This is a chance for recruiting operations to move from intuition-based hiring to data-supported decisions, enhancing both objectivity as well as bias-free and diverse hiring.

The same applies to workforce planning. Predictive workforce analytics (e.g., deep forest algorithms) can calculate the probability of employees resigning and the impact on the company. Additionally, AI technologies can help identify possible reasons and help HR determine proactive retention measures, for example offering different bonus schemes or flexible workspaces.

Talent management operations will change even more through automation and augmentation technologies and enhance the learning experience. For one, talent specialists could be supported by RPA in training administration through automated participant and facilitator management. Moreover, AI technologies could support HR in predicting which trainings to conduct on site or remotely and proactively suggest when to reschedule or cancel a training session. Besides improving training management, the learning experience could be enhanced through AR- and VR-supported training formats since they help create a real-life training experience while enabling remote training.

Since numerous administrative tasks will be handled by automation technologies, HR experts such as a career shaper, could focus on designing training systems, such as intelligent E-learning platforms, which could offer tailored training programs with the help of deep learning and provide easily accessible courses to support employees on their individual development journeys. Through new technologies, it is also possible to connect different HR streams and roles by, for example, including skill analysis results into the intelligent learning platform or suggesting special training programs on most-needed skills to employees.

A future-proof HR operating model

The change in HR operations requires not only a new twist on HR roles and responsibilities. It also needs to be supported by an adaptive HR operating model. Rather than working in silos or fixed column models with HR business partners only focusing on consulting leadership and employees and Centers of Expertise working in one specific area, diverse project teams in a connected HR ecosystem could lead to business success and, ultimately, reinvent HR operations.

A future-proof operating model should enable HR to work as connected, technology-driven department and provide high adaptivity to changing economic and business demands. While an operating model must reflect each organization's individual needs, three universally applicable cornerstones are fundamental in shaping such a model:

 Business centricity – Adapt your HR operating model to your individual business requirements, starting with the future HR roles necessary to achieve your long-term business goals.

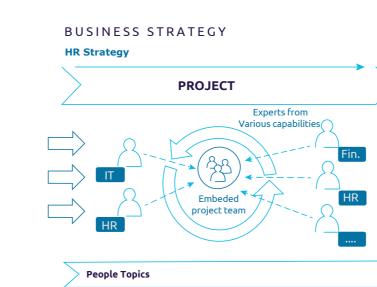


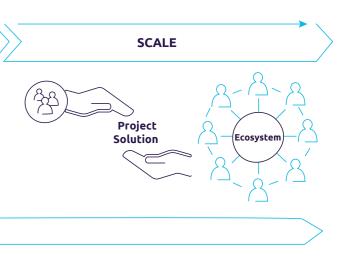
Figure 8 Capgemini's Agile Project & Scale Model for HR

The Project & Scale Model serves as an example of an operating model that can support HR in becoming technology-driven, flexible, and proactive. Since every organization is different, any business needs to first think about its priorities and suitable future HR roles and then consider which underlying operating

One technology that has the potential to transform HR Operations along the employee's lifecycle is smart chatbots. Chatbots can assist HR in various activities (onboarding new joiners, providing them with on-demand information, etc.). Through integrated learning algorithms, the chatbot can learn from users' inquiries, offering frequently searched topics and more specific answers over time. This technology has the potential to replace manual answers to repetitive inquiries that would traditionally be sent by administrative HR staff in a Shared Service Center. In the future, it is likely that employees will use chatbots or other self-service applications within an HR ecosystem rather than requiring a Shared Service Center for administrative tasks.

- 2. Agile mindset and behavior Develop and adopt an agile mindset and practices to become flexible in responding to business demands and in shaping an inspiring and productive work environment.
- 3. HR ecosystem Building an HR ecosystem with data and AI experts within your company and creating capability-focused project teams to speed up HR operations.

An operating model embodying the three cornerstones, is our Agile Project & Scale operating model (see Figure 8). At the heart of this model is an interdisciplinary team that develops solutions for business-driven HR topics ("Project") before scaling them into the organization through the HR ecosystem ("Scale"). To ensure a close fit to the business requirements, the HR product owner (e.g. workforce architect) defines priorities with the business and feeds them into a project backlog. Interdisciplinary experts with diverse capabilities and skills are then staffed on project teams and work in sprints to ensure an adaptive, business-oriented development of new topics. Due to its agile way of working, priorities are continuously evaluated, developed, and tested before moving into the HR ecosystem.





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It is apparent that HR cannot stick to established strategies and processes and needs to embrace the potential of automation and augmentation technologies to speed up operations and free capacity to focus on employee well-being and experience. If HR does not act now, it will not only dissolve itself but also challenge the organization in successfully mastering the challenges of the current pandemic and transitioning the workforce into a successful future. It is therefore important to develop a coordinated technology and workforce strategy now that fits short- and long-term business needs and builds up the workforce accordingly. Additionally, HR needs to evaluate which future HR roles fit its strategy and shape a potentially virtual operating model that addresses the current and postpandemic challenges. This will not only make the workforce and organization future-ready, but also lift the potential of HR to become a strategic engine for the workforce.





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APPENDIX A

Our approach

Three steps were taken in preparation for the present article to gather information on how automation and augmentation will influence the HR department of the future. First, HR job advertisements on several job websites were screened to gather present requirements of different job roles in HR. The acquired information was then used to match the identified positions in HR with HR profiles listed on the Occupational Information Network Platform O*Net. O*Net is a free online database that helps understanding today's work environment by providing users with hundreds of job definitions including relevant knowledge areas and required skills.

After matching the identified HR positions with the job descriptions on O*Net, a data analysis was conducted in cooperation with Faethm to compute the impact of automation and augmentation on those positions. Faethm runs an AI Analytics SaaS Platform that enables users to predict the impact of emerging technology on several jobs. The results can then be used to prepare employees for change, recruit for the future, create customized learning and development plans or identify career paths for employees at risk of becoming redundant due to automation and augmentation.

The present article comprises the essence of those results and forms the starting point of a better understanding of how jobs in the HR department of the future will change. Early and sophisticated solutions as well as clear guidelines for employees impacted by possible automation or augmentation of their jobs will be crucial to keep the workforce motivated and well-prepared for future challenges.

APPENDIX B

Selected data

			5 y	ears	10 y	ears
том	Role	FTE	Automation (FTE)	Augmentation (FTE)	Automation (FTE)	Augmentation (FTE)
	Human Resources Assistants, Except Payroll and Timekeeping Clerks	4667,2	999,4	734,6	2102,7	1014
	Payroll and Timekeeping Clerks	4667,2	2038,8	372,7	3263,9	31
SSC	Secretaries and Administrative Assistants	4667,2	1105,6	257,5	2025,6	515
	Total in FTE	14002	4143,8	1364,8	7392,2	1849
	Total in %		29,60%	9,75%	52,80%	13,21
	Training and Development Specialists	10404	1,2	717,6	6,9	27
	Training and Development Managers	3586,6	2,6	519	11,2	15
	Compensation and Benefits Managers	3586,6	91,3	573,9	243	1281
CoE	Compensation, Benefits and Job Analysis Specialists	10404	266,9	1513,1	1171,2	305
	Labor Relations Specialists	10404	30,6	1634	124,3	4965
	Total in FTE	38384	392,6	4957,6	1556,6	13502
	Total in %		1,02%	12,92%	4,06%	35,18
	Human Resources Manager	3586,6	11,7	604	41,4	120
HR Business Partner	Human Resources Specialists	10404	494,4	1972,3	1300	36
	Total in FTE	13990	506,1	2576,3	1341,4	48
	Total in %		3,62%	18,42%	9,59%	34,31

Table 1 Detailed numbers for the traditional TOM

Appendix - Table 2 Job corridor from payroll clerk to job analyst					
Knowledge Gap	Reskilling Gap	From (current skill level)	To (required skill level)	Importance to the Future of Work	
Personnel and Human Resources	28,8	35,9	64,7	4 - Important	
Administration and Management	19,4	30,7	50,1	4 - Important	
Education and Training	21,4	27	48,4	4 - Important	
Communications and Media	12,3	21,6	33,9	4 - Important	
Customer and Personal Service	13,6	46,1	59,7	3 - Moderate Importance	
English Language	7,9	45	52,9	3 - Moderate Importance	
Law and Government	18,2	23,2	41,4	3 - Moderate Importance	
Computers and Electronics	3,2	41,4	44,6	2 - Somewhat Important	
Mathematics	10,3	43,9	54,2	1 - Less Important	
Economics and Accounting	6,4	32,3	38,7	1 - Less Important	
Clerical	2,6	60,8	63,4	0 - Not Important	

Table 2 Job corridor from payroll clerk to job analyst

Capgemini I invent

About Capgemini Invent

As the digital innovation, consulting and transformation brand of the Capgemini Group, Capgemini Invent helps CxOs envision and build what's next for their organizations. Located in more than 30 offices and 25 creative studios around the world, its 7,000+ strong team combines strategy, technology, data science and creative design with deep industry expertise and insights, to develop new digital solutions and business models of the future.

Capgemini Invent is an integral part of Capgemini, a global leader in consulting, digital transformation, technology, and engineering services. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. A responsible and multicultural company of 265,000 people in nearly 50 countries, Capgemini's purpose is to unleash human energy through technology for an inclusive and sustainable future. With Altran, the Group reported 2019 combined global revenues of €17 billion.

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