High-potential sectors in Belgium for an AI-driven software startup include **Healthcare**, **Finance (Fintech)**, **Public Administration**, **Business Services (ICT and Professional Services)**, and **Education**. Other promising areas are **Manufacturing**, **Logistics and Supply Chain**, **Smart Cities and Mobility**, **Telecommunications**, and **Retail**. These sectors demonstrate a strong need for AI, align with national priorities, and show significant investment and growth potential.

High-Potential Sectors for AI Startups in Belgium

1. Healthcare

1.1 AI Needs and Opportunities

The **Belgian healthcare sector presents substantial opportunities for AI-driven software solutions**, driven by a pressing need for innovation to enhance patient outcomes, optimize operational efficiency, and manage complex healthcare data. AI applications are diverse, ranging from **diagnostic support and personalized medicine to administrative automation and drug discovery**. For instance, AI can analyze medical images like X-rays or MRIs with high accuracy, potentially detecting diseases at earlier, more treatable stages. It can also assist in predicting patient risk for various conditions, enabling proactive and preventative care strategies. Furthermore, AI-powered tools can streamline hospital operations, such as patient scheduling, resource allocation, and managing electronic health records, leading to cost reductions and improved patient flow. The development of AI solutions that ensure data privacy and ethical considerations, such as **"trust-by-design" platforms**, will be crucial in gaining the trust of healthcare providers and patients. The complexity and volume of healthcare data make it an ideal candidate for AI and machine learning applications, offering vast potential for startups to develop novel solutions that address unmet needs in the Belgian healthcare system. The focus on **diagnostic AI projects by Belgian companies, with 67% exploring such initiatives**, underscores this demand . A study by Actiris, Brussels' employment service, highlighted that medical and nursing professions could greatly benefit from AI's ability to improve diagnosis and certain medical procedures . While human skills remain vital for direct care and clinical decision-making, AI can augment these capabilities, leading to more efficient and accurate healthcare delivery. The national AI plan also emphasizes the importance of AI in healthcare, aiming to support institutions in implementing high value-added technologies such as **robotic surgery and diagnostic assistance** . Furthermore, the plan calls for the adoption of effective governance of medical data and the study of a regulatory platform for AI in medicine to review and monitor technology solutions . This indicates a clear need for AI solutions that can integrate seamlessly into existing healthcare workflows while adhering to strict ethical and regulatory standards. The focus on training healthcare professionals in AI and continuing education for those already active

underscores the growing importance of AI literacy within the sector . Startups developing AI solutions for healthcare must navigate major ethical issues, including accountability for errors and data protection, which are critical concerns in this domain . The potential for AI in Belgian healthcare extends to various applications, including AI-powered monitoring systems and machine learning tools for predictive analytics. For instance, B12 Consulting has been involved in projects such as an AI-powered monitoring system for Brussels' tram network and machine-learning tools for energy production forecasting, demonstrating the cross-applicability of such technologies which could be adapted for healthcare monitoring or predictive diagnostics . Sensidev also highlights HealthTech AI solutions, such as **diagnostic imaging (analyzing CT scans and X-rays) and healthcare management systems for patient records and appointment scheduling** . The **Belgian AI in Bioinformatics market is projected to grow at a significant CAGR of 33.62% between 2024 and 2032**, indicating a strong demand for AI in areas like genomics and personalized medicine . This growth is fueled by Belgium's leading position in the biotech and pharmaceutical field, with R&D spending in this sector increasing by 166% over the past decade, reaching over 5 billion EUR in 2020 . AI's ability to accelerate therapy development and improve diagnostic accuracy makes it a crucial technology for maintaining and enhancing Belgium's competitive edge in life sciences. The development of AI solutions that can assist in standardizing protocols and improving treatment outcomes is a key area of opportunity .

1.2 Alignment with National Priorities

The Belgian government's **"National Convergence Plan for the Development of Artificial Intelligence" explicitly identifies "AI at the heart of health" as one of its nine key objectives** . This objective underscores the strategic importance placed on integrating AI into the healthcare system to improve patient outcomes, enhance operational efficiency, and support Belgium's strong biotech and pharmaceutical industries. The plan outlines specific actions, such as accompanying healthcare institutions in implementing high value-added technologies like robotic surgery and diagnostic assistance, and training healthcare professionals in AI applications . This governmental focus creates a **favorable environment for AI startups targeting the healthcare sector**, as it signals a commitment to fostering innovation and adoption. The plan also emphasizes the need for effective governance of medical data and the potential establishment of a regulatory platform for AI in medicine, which, while introducing compliance requirements, also provides a framework for trustworthy AI development and deployment . This aligns with the broader national objective of **promoting trustworthy AI**, which is crucial in a sensitive sector like healthcare where data privacy and ethical considerations are paramount . The national AI plan's emphasis on developing a data-driven economy and efficient infrastructure further supports the growth of AI in healthcare . By encouraging the opening of data and infrastructure to entrepreneurs and SMEs, the plan aims to facilitate the development of new AI solutions. This is

particularly relevant for healthcare, where access to high-quality, diverse datasets is essential for training robust AI models. The plan's focus on improving access to cloud services and strengthening national and European AI infrastructure will also benefit healthcare AI startups by providing the necessary computational resources and platforms . Moreover, the objective to **"Provide better services and protection to citizens"** through AI-driven social policy and improved public services can be directly linked to enhancing healthcare services . AI applications that improve the accessibility of social protection, support administrative processes in the social protection sector, or help identify the needs of target groups can have a significant impact on public health and well-being. The alignment of AI development in healthcare with these national priorities ensures that startups in this space are contributing to broader societal goals, potentially making them more attractive for government support and collaboration.

1.3 Investment and Growth Potential

The **healthcare sector in Belgium, particularly when combined with AI, shows strong investment and growth potential**. The Belgian AI in Bioinformatics market, for example, is projected to experience a compound annual growth rate (CAGR) of **33.62% during the forecast period of 2024 to 2032** . This rapid growth indicates a significant market demand for AI solutions in areas like genomics, drug discovery, and personalized medicine. Belgium's established strength in the biotech and pharmaceutical industries further fuels this potential, with substantial R&D investments creating a fertile ground for AI applications that can accelerate research and development processes . The national AI plan's focus on "AI at the heart of health" also signals governmental support and a conducive environment for investment in this area . Startups developing AI solutions for diagnostic imaging, patient data management, robotic surgery, and personalized treatment plans are likely to find a receptive market. Recent investment trends in Belgian AI startups also point towards significant capital flowing into the broader AI ecosystem. In the first half of 2024, **AI startups in Belgium attracted over 70% of the total capital invested in startups, amounting to over €470 million**, with the year on track for a record funding year . While this figure encompasses all AI sectors, the healthcare sector is a prominent area for AI application. Companies like **CluePoints, which provides AI-driven software for clinical data review, have received significant investment**, indicating investor confidence in healthcare AI solutions . CluePoints, founded in Belgium in 2012, secured a majority stake acquisition by EQT Healthcare Growth Strategy and EQT Growth Fund, with management and existing shareholders like Summit Partners reinvesting . This investment aims to support CluePoints' continued growth in the Risk-Based Quality Management (RBQM) and data quality oversight market for clinical trials, a market expected to experience strong growth due to increasing R&D spend and data complexity . The fact that CluePoints has helped de-risk over 1,600 studies and detected over 142,000 issues for top pharma companies demonstrates the tangible value and scalability of AI in

healthcare . The **overall AI market in Belgium is projected to reach US$1.16 billion in 2024 and grow at a CAGR of 28.28%, reaching US$5.17 billion by 2030**, with healthcare being a key sector . Reports indicate that generative AI alone could have a substantial economic impact on the Belgian healthcare sector . Venture capital firms in Belgium are actively investing in healthtech and biotech startups, indicating a strong investor appetite for innovations in this domain . For example, **V-Bio Ventures focuses on life sciences, including healthcare and biotech, while HERAN PARTNERS invests in MedTech and Digital Health** . The potential for AI to revolutionize areas like drug discovery, personalized treatment plans, and remote patient monitoring attracts significant investment. As AI technologies mature and demonstrate tangible benefits in improving healthcare delivery and reducing costs, the investment flow into AI-driven healthcare startups is expected to grow. The high stakes and complex challenges within healthcare create a continuous demand for innovative solutions, positioning AI startups in this sector for significant growth and market penetration, especially those that can demonstrate clear ROI and address critical pain points for healthcare providers and patients.

2. Finance (Fintech)

2.1 AI Adoption and Opportunities

The **Belgian financial sector is actively embracing Artificial Intelligence**, moving beyond experimental phases to focus on tangible results and measurable returns on investment . A 2025 AI Barometer report by FinTech Belgium and Sailpeak reveals that **85% of surveyed financial institutions now have a dedicated AI unit or competence center**, a significant increase from 37% in the previous year . This indicates a strong commitment to integrating AI into their core strategies. The primary drivers for AI adoption are **"Productivity Gain" (a high priority for 92% of institutions) and "Process Efficiency" (75% high priority)**, where real benefits are already being observed . **Generative AI (GenAI) is rapidly moving from trials to widespread use**, with over 60% of relevant institutions deploying GenAI for customer service chatbots and coding assistance . Furthermore, 85% of institutions are running AI literacy campaigns, and 77% are providing employees with AI assistants like Microsoft Copilot, showcasing the integration of AI into daily workflows . The applications of AI in the Belgian financial sector are diverse. **Predictive AI is widely implemented, with 84% of institutions using it for customer segmentation, fraud detection, and risk modeling**, particularly in marketing (61%) and insurance operations (58%) such as underwriting and claims processing . Generative AI, while in earlier stages, is being explored by 79% of institutions, especially in marketing and customer-focused areas like personalized communication . The 2025 AI Barometer, based on insights from 13 leading Belgian financial institutions including major players like BNP Paribas Fortis, KBC, Belfius, and Ethias, confirms that AI is no longer just a pilot project but a fundamental part of their strategy . Over

60% have a validated AI roadmap or are actively updating one . This proactive adoption creates numerous opportunities for AI startups to develop solutions that address specific needs in areas like **advanced fraud detection, personalized financial advice, automated customer service, risk assessment, and regulatory compliance (RegTech)**. The focus on ROI means that startups offering clear value propositions and demonstrable efficiency gains will be well-positioned.

2.2 Market Readiness and Growth

The **Belgian financial sector demonstrates a high level of market readiness for AI solutions**, driven by a strong desire for productivity gains and process efficiencies . The establishment of dedicated AI units in 85% of surveyed institutions and the active development or updating of AI roadmaps in over 60% of them signify a mature approach to AI integration . This maturity is further evidenced by the shift in focus from experimentation to achieving clear, measurable returns on AI investments . **Almost 45% of institutions expect their AI investments to at least break even or even generate exceptional ROI in 2025** . The widespread adoption of Generative AI for customer service chatbots and coding assistance, along with the implementation of AI literacy campaigns and AI assistants for employees, indicates that the sector is not just investing in technology but also in building internal AI capabilities and fostering a culture of AI adoption . The growth potential for AI in the Belgian financial sector is substantial. The 2024 AI Barometer highlighted that **nearly 84% of participating financial institutions were already deploying at least one AI application**, with predictive AI being mature in areas like marketing and insurance operations, and Generative AI gaining traction in customer-facing roles . This existing adoption provides a strong foundation for further growth as institutions seek to expand AI applications across more functions and processes. The increasing complexity of financial data, the need for enhanced cybersecurity, and the demand for more personalized customer experiences are all factors that will continue to drive AI adoption. The **EU AI Act is also a significant legislative development** that will shape the AI landscape in banking and insurance, prompting institutions to seek compliant and trustworthy AI solutions . This regulatory environment, while posing challenges, also creates opportunities for AI startups that can provide solutions ensuring transparency, fairness, and accountability, aligning with the national objective of promoting trustworthy AI . The **overall AI market in Belgium is projected for significant growth, with an annual growth rate (CAGR 2024-2030) of 28.28%, resulting in a market volume of US$5.17 billion by 2030** , and the financial sector is poised to be a key contributor to this expansion. The Statista Market Forecast also identifies finance as a key industry where the rising need for efficient and intelligent solutions is driving AI market growth in Belgium .

2.3 Investment Landscape

The **investment landscape for AI in the Belgian financial sector is robust**, reflecting the sector's strong adoption and focus on AI-driven innovation. Financial institutions are making significant strategic investments in AI, evidenced by the establishment of dedicated AI units and the development of comprehensive AI roadmaps . The expectation that 45% of AI investments will at least break even or generate exceptional ROI in 2025 demonstrates a confident and proactive investment stance . This internal investment by financial institutions creates a direct market for AI startups offering specialized solutions. The broader Belgian tech ecosystem is also experiencing a surge in AI-related funding. In the first half of 2024, **AI startups attracted over 70% of the total capital invested in Belgian startups, amounting to over €470 million** . This trend indicates strong investor appetite for AI ventures across the board, with the financial sector being a prime area for application. The "State of Belgian Tech Report" for H1 2024 highlights that the **average investment per round per stage has steadily increased, tripling at the seed and Series B stages and more than doubling at Series A between 2018 and 2024** . This suggests a maturing ecosystem with increasing capital availability for promising AI startups. While the report notes that early-stage funding rounds still account for a large portion of capital raised in Belgium compared to Europe as a whole, there is a continuous inflow of capital from foreign investors (averaging 66% of total funding since 2020) and renewed momentum among local funds and VCs . **Belgian VCs raised over €200 million in new funds in 2024 to date** and are projected to close the year with over double that amount . This growing pool of venture capital, combined with the financial sector's own investment in AI, creates a favorable environment for AI startups in FinTech. Companies like **TechWolf, an AI-driven skill intelligence platform for enterprises, secured a $42.7 million Series B investment in June 2024**, showcasing the potential for significant funding rounds for Belgian AI companies . While TechWolf is not exclusively FinTech, its success indicates the investor confidence in B2B AI solutions, which are highly relevant to the financial industry. Venture capital firms like **BlackFin Tech specialize in backing fintech, insurtech, and regtech companies** across Europe, including Belgium, helping them accelerate growth through funding and M&A strategies . Another firm, **Finance&invest.brussels, fuels the Brussels regional economy by backing startups in sectors including fintech and AI** . The strong performance and high valuation of fintech companies like Banqup Group, which operates a cloud-based platform for administrative and financial services, further illustrate the investment appeal of this sector .

3. Public Administration and Government Services

3.1 AI for Public Sector Efficiency

Artificial Intelligence offers **significant potential to enhance efficiency and improve service delivery within Belgian public administration and government services**. The "National

Convergence Plan for the Development of Artificial Intelligence" explicitly aims to position the public service as an AI player, focusing on citizens and public sector agents . The plan highlights several ways AI can contribute: by providing advice and services that better meet citizen needs; rationalizing processes and reducing costs through automation of repetitive tasks, allowing staff to focus on higher-value work; improving the quality of processes and services via automatic anomaly detection; identifying trends and making predictions from large datasets; and sorting and categorizing diverse data types like text, speech, or images . Already, **56% of Belgian government organizations have implemented AI solutions**, indicating that AI is already a priority for Belgian public services . This existing adoption provides a foundation for further integration of more advanced AI solutions. The national plan also details specific applications where AI can be beneficial for the public sector. For instance, AI systems could be used to check a person's eligibility for a program, identify the needs of a target group, or perform complex calculations . In compliance applications, AI could help collect decisions on similar cases, update regulatory frameworks, or monitor compliance with standards . For user interaction, **AI-powered chatbots could assist users in preparing files, pre-filling forms, answering questions about subsidies, or referring citizens to appropriate government services** . The plan also calls for the adoption of a governance framework for AI use in federal public services, including an advisory committee on ethical AI use, which is crucial for building trust and ensuring responsible deployment . The focus is on leveraging AI to provide better services and protection to citizens, including developing AI applications to guarantee social rights, strengthen social protection accessibility, and support administrative processes in the social protection sector . This creates numerous opportunities for AI startups to develop solutions that address these specific public sector needs, with an emphasis on transparency, fairness, and citizen-centric design.

3.2 National AI Plan Focus

The **"National Convergence Plan for the Development of Artificial Intelligence" in Belgium places a strong emphasis on leveraging AI to transform public administration and government services**. Objective 9 of the plan is specifically dedicated to **"Provide better services and protection to citizens,"** aiming to position the government as an active AI player . This objective underscores the commitment to using AI to enhance the efficiency and quality of public services, placing citizens and public sector staff at the center of these efforts . The plan acknowledges that government departments are already analyzing the potential of AI to carry out their tasks and that a significant portion (56%) have already implemented AI solutions . This indicates a proactive stance from the public sector in adopting AI technologies. The plan outlines a multi-faceted approach, including identifying citizen needs, promoting social acceptability of AI, developing human-centered public services, and strengthening the AI skills of administrative agents . A key aspect of the national plan's focus on public administration is the **development of**

a governance framework for the use of AI in federal public services. This includes the establishment of an advisory committee on the ethical use of AI in the operation of public services, which aligns with Objective 1 of the plan: **"Promote a trustworthy AI"** . This focus on ethical and responsible AI is critical for maintaining public trust, especially when AI is used in sensitive areas like social protection and citizen services. The plan also calls for developing tools to accompany users of AI systems, identify algorithmic biases, and combat discrimination, which is essential for ensuring fairness in public sector AI applications . Furthermore, the plan aims to develop AI applications to guarantee the social rights of citizens, strengthen the accessibility of social protection, fight against non-use of services, and support the processing and controls in the administrative processes of the social protection sector . This detailed focus provides a clear roadmap for AI startups looking to develop solutions for the Belgian public sector, highlighting areas where AI can deliver significant societal and operational benefits.

3.3 Expected Economic Impact

While direct figures for the economic impact of AI specifically within Belgian public administration are not detailed in the provided snippets, the **broader economic benefits of AI adoption in Belgium suggest a positive impact on the public sector as well**. **Generative AI alone is projected to boost Belgium's economy by up to €50 billion over the next decade, potentially increasing GDP by 9%** . A significant portion of this value is expected to come from increased productivity, as AI can free up workers from repetitive tasks, allowing them to focus on more value-creating activities . The public sector is explicitly mentioned as an area where Generative AI is expected to have substantial impacts, particularly in public administration, education, and healthcare . This suggests that efficiency gains and improved service delivery through AI in public administration will contribute to this overall economic uplift. The national AI plan's objective to "Strengthen Belgium's competitiveness and attractiveness through AI" also implies that a more efficient and technologically advanced public sector will contribute to a better business environment and overall economic health . The national AI plan aims to stimulate AI adoption by companies and facilitate research and technology transfer, with a target adoption rate of cloud/big data/AI technologies at 75% by 2030, up from an estimated 20-25% currently . While this target is for companies, a more AI-literate and AI-driven economy will inevitably influence and benefit the public sector. The plan's focus on developing a data-driven economy and efficient infrastructure, including encouraging the reuse of public service data and improving access to cloud services, will also create a more favorable environment for AI adoption in public administration . By **automating routine tasks, optimizing resource use, and improving decision-making through data analysis, AI can help reduce operational costs within government agencies**. These cost savings, coupled with improved service quality and citizen satisfaction, contribute to a more effective and economically sound public sector. The emphasis on using AI to

provide better services and protection to citizens, such as improving social protection accessibility and fighting fraud, also has indirect economic benefits by ensuring more equitable distribution of resources and maintaining the integrity of social systems .

4. Business Services (ICT and Professional Services)

4.1 Role in AI Adoption Across Sectors

Business services, particularly Information and Communication Technology (ICT) and professional consulting, play a crucial role in driving AI adoption across various sectors in Belgium. These service providers are often at the forefront of AI implementation, helping other industries understand, integrate, and leverage AI technologies. For instance, consulting firms like Implement Consulting Group and PwC Belgium are actively involved in analyzing the economic impact of AI and advising companies on their AI strategies . Implement Consulting Group's report, commissioned by Google, highlighted the **€50 billion economic opportunity Generative AI presents for Belgium**, emphasizing productivity gains in sectors like IT and business services themselves . This indicates that these service firms are not only facilitators but also beneficiaries of AI adoption. They develop AI-driven solutions, offer AI consulting, and help businesses navigate the complexities of AI integration, including data management, talent acquisition, and regulatory compliance. The "National Convergence Plan for the Development of Artificial Intelligence" also implicitly relies on a strong ICT and professional services sector to achieve its objectives. The plan aims to **intensify information and support initiatives for SMEs in the field of AI** by involving research centers and setting up a regulatory framework for "sandboxes" to allow companies to experiment with AI applications . Professional service firms are key players in delivering these support initiatives and guiding SMEs through the experimentation process. Furthermore, the plan's objective to "Develop a data-driven economy and an efficient infrastructure" necessitates robust ICT services for data management, cloud computing, and cybersecurity . Companies specializing in AI software development, data engineering, and AI integration, such as those listed by AI Superior and Sensidev, provide the essential tools and expertise that enable other sectors to adopt AI . For example, GAC Business Solutions provides Microsoft Dynamics 365 software alongside AI consulting, helping industries like retail, education, healthcare, and production to streamline processes and enhance decision-making . This intermediary role makes the business services sector a critical enabler of Belgium's broader AI ambitions.

4.2 ICT-Intensive Industry Adoption

The **ICT sector itself is a primary adopter and developer of AI technologies in Belgium**. As a core component of the digital economy, ICT companies are heavily invested in leveraging AI to

enhance their own products and services, as well as to create innovative AI-driven solutions for their clients. The economic impact of Generative AI is notably high in the IT sector, which is expected to see significant productivity gains . This suggests that ICT companies are actively integrating AI into their operations, from software development and data analytics to customer support and infrastructure management. The presence of numerous AI startups in Belgium, many of which are ICT-focused, further underscores this trend. **Tracxn lists 474 Artificial Intelligence startups in Belgium, with 171 of them funded**, indicating a vibrant ecosystem of ICT-driven AI innovation . These startups are developing solutions across various AI domains, including machine learning, natural language processing, and computer vision, catering to diverse industry needs. The "National Convergence Plan for the Development of Artificial Intelligence" emphasizes the need to strengthen Belgium's competitiveness through AI and to develop a data-driven economy supported by high-quality infrastructure, including data centers and cloud services . The ICT sector is central to achieving these goals. The plan calls for encouraging companies and knowledge institutions to open their infrastructure and data to entrepreneurs and SMEs to develop new AI solutions, and to improve access to cloud services . This directly involves ICT providers in expanding the AI ecosystem. Furthermore, the plan's focus on cybersecurity (Objective 2) is critical for the ICT sector, as AI systems process large amounts of sensitive data and require robust protection at all stages . ICT companies specializing in cybersecurity are therefore essential for enabling safe and trustworthy AI adoption. The demand for AI skills within the ICT sector is also high, reflecting its active engagement with AI technologies. The **overall AI market in Belgium, which includes software, hardware, and services, is projected for substantial growth**, with the ICT sector being a key driver and beneficiary of this expansion . Sectors such as computer programming, consultancy, information services, telecommunications, and IT products have shown the **highest uptake of AI tools and development of AI solutions** . For instance, **41.6% of large Belgian companies in these ICT-intensive industries use AI tools, and a further 25.2% are involved in developing AI solutions** .

4.3 Economic Impact and Growth

The **business services sector, particularly ICT and professional services, is poised for significant economic impact and growth due to AI adoption in Belgium**. Generative AI alone is expected to contribute substantially to this sector, with the **IT and business services industries identified as main areas where Gen AI will make a big difference** . The potential **€50 billion boost to Belgium's economy from Gen AI over the next decade** will be partly driven by productivity gains within these service industries . As AI automates repetitive tasks and augments human capabilities, professionals in ICT and business services can focus on higher-value activities, leading to increased efficiency and output. This not only benefits the service providers themselves but also has a ripple effect across the economy, as these services are crucial inputs

for other sectors. The national AI plan's objective to "Strengthen Belgium's competitiveness and attractiveness through AI" will likely lead to increased demand for advanced business services that can support AI integration and innovation . The growth of the AI market in Belgium, projected to reach **US$5.17 billion by 2030 with a CAGR of 28.28%** , will directly benefit ICT and professional service firms. These companies provide the foundational technologies, consulting, and implementation services required for AI adoption. The increasing number of AI startups in Belgium 474AIstartupswith171funded also contributes to this growth, as many of these startups operate within or serve the business services domain. For example, **TechWolf, an AI-driven skill intelligence platform for enterprises, secured $42.7 million in Series B funding**, highlighting the investment potential in B2B AI solutions within the professional services space . The demand for AI expertise is creating new service lines and specializations for consulting firms, IT service providers, and software developers. As Belgian companies across all sectors increasingly adopt AI, the need for specialized AI consulting, custom AI software development, data analytics services, and AI talent acquisition will continue to grow, fueling further expansion in the business services sector. The focus on developing a data-driven economy and efficient infrastructure, as outlined in the national AI plan, will also spur demand for ICT services related to data management, cloud computing, and cybersecurity, all of which are integral to successful AI deployment .

5. Education

5.1 AI's Potential Impact

Artificial Intelligence holds **significant potential to transform the education sector in Belgium**, impacting both teaching methodologies and administrative processes. The "National Convergence Plan for the Development of Artificial Intelligence" includes **"Better and lifelong learning" as one of its nine key objectives**, recognizing that AI will impact the labor market and necessitate skills upgrading and retraining . The plan calls for creating a framework for skills development, including basic AI skills, and strengthening lifelong learning programs provided by educational institutions . This indicates an understanding that AI can be a tool for educational enhancement as well as a subject of study. **Generative AI is also expected to have a substantial impact on the public sector, including education**, contributing to the projected €50 billion boost to Belgium's economy over the next decade . This suggests that AI could be used to personalize learning experiences, automate administrative tasks for educators, provide intelligent tutoring systems, and offer new ways of assessing student progress. The national AI plan's focus on "Better and lifelong learning" aims to address the evolving demands of the labor market due to AI-driven automation . This involves not only equipping students with AI-related skills but also using AI to improve the quality and accessibility of education. For instance, **AI could help in developing**

adaptive learning platforms that tailor educational content to individual student needs and learning paces. It could also assist in identifying students who might need additional support or provide teachers with insights into student performance through data analysis. Furthermore, AI-powered tools could streamline administrative tasks such as grading, scheduling, and managing student records, freeing up educators to focus more on teaching and student interaction. The plan also mentions organizing foresight workshops called "Bright Mirrors" on the future of work, which will likely explore the role of AI in education and skills development . The emphasis on lifelong learning implies that AI could be used to create flexible and accessible learning opportunities for adults seeking to reskill or upskill, aligning with the national objective of an "Adults Reskilling Program" . The development of AI-driven software solutions that are trustworthy and ethically sound will be crucial in gaining acceptance within educational institutions, ensuring that student data is protected and that AI tools are used to augment, rather than replace, human educators. The focus on **"trustworthy AI" in Belgium's National AI Plan** is particularly relevant for applications in the sensitive context of education.

5.2 Opportunities for Innovation

The **education sector in Belgium presents numerous opportunities for AI-driven innovation**, aligning with the national goal of fostering "Better and lifelong learning" . Startups can develop AI solutions that personalize the learning journey for students. This could involve **adaptive learning platforms** that adjust content and pacing based on individual student performance, **AI tutors** that provide instant feedback and support, or tools that help educators identify learning gaps and tailor their instruction accordingly. Another area for innovation is in **automating administrative tasks**. AI can be used to streamline processes like grading, attendance tracking, scheduling, and resource allocation, allowing educational institutions to operate more efficiently and enabling teachers to dedicate more time to pedagogical activities. Sensidev, for example, lists "EducationTech AI" as one of its areas of expertise, suggesting opportunities for AI in personalized learning paths, automated grading systems, and intelligent tutoring systems, although specific Belgian examples are not detailed in the snippet . Furthermore, there is a significant opportunity in developing **AI tools for skills assessment and development**, particularly in the context of lifelong learning and reskilling, as emphasized in the national AI plan . AI platforms could help individuals identify relevant skills for future job markets, recommend appropriate training programs, and even provide micro-credentials based on demonstrated competencies. The plan's call for strengthening lifelong learning programs and creating an "Adults Reskilling Program" opens doors for AI solutions that support continuous education . Innovation can also focus on creating **immersive and engaging learning experiences using AI-powered technologies like virtual reality (VR) or augmented reality (AR)** for simulations and interactive content. Given the national focus on promoting trustworthy AI and addressing ethical

considerations , there is also an opportunity to develop AI solutions for education that prioritize data privacy, algorithmic fairness, and transparency, ensuring that AI tools are used responsibly within educational settings. The need to train healthcare professionals in AI, as mentioned in the national plan , also suggests a specific niche for AI-powered educational tools tailored to medical and nursing education. The emphasis on open innovation in Belgium, with companies looking to collaborate on projects , could extend to the education sector, fostering partnerships between AI startups, universities, and schools to co-develop and pilot innovative AI solutions. The need for educational communication to explain AI technologies and their impact, as mentioned in the National AI Plan , also creates an opportunity for startups to develop educational AI tools and platforms.

5.3 Alignment with Broader Economic Impact

The **integration of AI into Belgium's education system is closely aligned with the broader economic impact goals** outlined in the national AI strategy. By fostering "Better and lifelong learning," the education sector directly contributes to developing a skilled workforce capable of driving and adapting to AI-driven economic transformations . The national AI plan acknowledges that AI will significantly impact the labor market, with automation leading to job displacement in some areas while creating new opportunities in others . To navigate this transition, a strong emphasis is placed on skills upgrading, retraining, and the development of basic AI literacy across the population . An AI-enhanced education system can more effectively equip individuals with the necessary competencies, thereby increasing overall productivity and innovation capacity within the Belgian economy. The projected **€50 billion economic boost from Generative AI, part of which is expected in the education sector itself**, further highlights this connection . A more educated and AI-literate workforce is essential for realizing such economic gains. The national AI plan's objective to "Strengthen Belgium's competitiveness and attractiveness through AI" is also supported by advancements in AI within education . A well-educated population, proficient in AI and digital technologies, makes Belgium a more attractive location for high-tech industries and foreign investment. Furthermore, by promoting lifelong learning and reskilling programs, the education system can help mitigate the negative impacts of job automation and ensure that the workforce remains adaptable and competitive in a rapidly changing global economy . The development of AI tools and platforms within the education sector can also spur innovation and create new business opportunities for EdTech startups. These innovations can then be exported, contributing further to economic growth. The focus on creating a framework for skills development and strengthening educational programs is not just an educational goal but a **strategic economic imperative** to ensure Belgium can harness the full potential of AI across all sectors . The success of AI adoption in other priority sectors like healthcare, finance, and

manufacturing will heavily depend on the availability of a skilled workforce, which the education sector, empowered by AI, can help provide.

6. Other Promising Sectors

Beyond the primary sectors, several other industries in Belgium show significant promise for AI-driven software solutions. These sectors are characterized by evolving needs, technological advancements, and increasing openness to AI adoption.

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Sector	Key AI Needs & Opportunities	A
Manufacturing	Quality control, predictive maintenance, product design, virtual prototyping, operational efficiency, overcoming data quality & skills shortage challenges	E t
Logistics & Supply Chain	Route optimization, warehouse management, demand forecasting, fleet management, real-time tracking, predictive analytics for disruptions, automated documentation	S e
Smart Cities & Mobility	Traffic management, public transport optimization, energy management for buildings, public safety, environmental monitoring, MaaS (Mobility as a Service)	S e
Telecommunications	Network optimization, predictive maintenance, enhanced customer service (chatbots, personalization), network security, enabling 5G/6G for AI applications	D c
Retail	Personalized recommendations, targeted marketing, inventory optimization, supply chain efficiency, customer analytics, dynamic pricing, fraud detection	S e

Table 1: Overview of Other Promising Sectors for AI in Belgium

6.1 Manufacturing

The **manufacturing sector in Belgium presents significant opportunities for AI-driven solutions**, particularly in enhancing operational efficiency, quality control, and predictive maintenance. PwC Belgium's survey of over 400 operations executives, including over 50 from Benelux, revealed a strong belief in AI's potential to enhance profitability, with **nearly 60% of participants in Benelux expecting at least a three-percentage point increase in operating profits by 2030 due to AI** . While this is slightly more guarded than the EMEA average, it still indicates substantial

anticipated benefits. AI is already being used in the Benelux manufacturing sector for quality control, product design, documentation, and work instructions, with further potential in virtual and 3D product prototyping . Examples include forecasting applications and predictive models at Reynaers (aluminum solutions), predictive analytics at a chemical company, and an AI vision-based quality inspection system at Kapernikov . These use cases demonstrate how companies are leveraging existing data from their digitalization journey to create additional value with AI. However, the adoption of AI in Benelux manufacturing faces challenges. Compared to the wider EMEA region, **fewer Benelux manufacturers report achieving significant financial benefits and ROI from AI (2% in Benelux vs. 4% in EMEA)**, and fewer have moved beyond initial pilot phases (30% in Benelux vs. 40% in EMEA) . The most cited obstacles are **data quality, cybersecurity, and skills shortages**, which are particularly acute for Benelux's export-oriented SMEs that often work with legacy systems . Over 90% of organizations in Benelux are SMEs, which tend to have tighter cash resources and smaller AI budgets . Furthermore, **72% of employers in Benelux struggle to fill technical roles**, limiting their ability to execute complex AI programs and nudging them towards cheaper, lower-scope projects . The EU AI Act is also a consideration, as regulatory compliance costs could add significantly to an SME's project budget, potentially stifling innovation . Despite these hurdles, the potential rewards of AI integration, such as enhanced decision-making, boosted productivity, improved efficiency, and reduced costs, are significant, especially for "AI Operations Champions" who effectively scale and integrate AI . This creates a clear need for AI solutions that are accessible to SMEs, address data quality and legacy system integration, and potentially offer managed services to overcome skills shortages.

6.2 Logistics and Supply Chain

Logistics and supply chain management are key areas for AI application in Belgium, driven by the need for optimization, efficiency, and resilience. The "National Convergence Plan for the Development of Artificial Intelligence" highlights the importance of AI in supporting more sustainable mobility, which includes optimizing logistics . The plan recommends developing the basis for a **"Logistics as a Service" (LaaS) approach** and exploring the potential of AI to improve road safety and optimize logistics in consultation with the Regions . This governmental focus indicates a strategic priority for enhancing the logistics sector through AI. Globally, the demand for freight transport is expected to significantly increase, impacting quality of life and climate change, making proactive and AI-driven logistics policies essential . AI can play a crucial role in **route optimization, warehouse management, demand forecasting, and fleet management**, leading to reduced costs, improved delivery times, and lower environmental impact. Sensidev explicitly lists "AI Solutions for Logistics and Supply Chain Optimization and Efficiency" as one of its offerings for Belgian companies, including AI-driven systems for optimizing logistics operations and predictive maintenance to minimize downtime in manufacturing and distribution

centers . PwC's research also indicates that supply chain use cases are the most widespread AI applications across EMEA manufacturers, although there are variations across industry sectors . For Belgium, with its strategic location in Europe and significant port activities (e.g., Port of Antwerp–Bruges), AI can offer substantial competitive advantages in managing complex international supply chains, customs procedures, and last–mile delivery. The challenges in the Belgian logistics sector that AI can address include congestion, fluctuating fuel prices, driver shortages, and the increasing complexity of global trade. **AI–powered solutions for real–time tracking, predictive analytics for disruptions, and automated documentation processing** can help logistics companies navigate these challenges more effectively. The focus on developing a data–driven economy and efficient infrastructure, as per the national AI plan, will further support the adoption of AI in logistics by improving data availability and connectivity .

6.3 Smart Cities and Mobility

Smart cities and sustainable mobility are emerging as significant areas for AI deployment in Belgium, aligning with national objectives for urban development and environmental protection. The "National Convergence Plan for the Development of Artificial Intelligence" includes **"Serve a more sustainable mobility" as a key objective**, aiming to address the increasing demand for urban passenger and freight transport, which impacts quality of life and accelerates climate change . The plan recommends developing and implementing a national vision of **"Mobility as a Service" (MaaS)** and exploring AI's potential to improve road safety, optimize logistics, and guide the transition to more efficient, safe, inclusive, and sustainable mobility . This creates a strong impetus for AI solutions in traffic management, public transport optimization, and infrastructure planning. Sensidev also identifies "AI Solutions for Smart Cities," including **traffic management algorithms to optimize flow and reduce congestion, and energy management solutions for buildings** . The development of smart cities in Belgium will rely heavily on AI to integrate and analyze data from various urban systems, such as transportation, energy, public safety, and environmental monitoring. AI can enable more efficient use of resources, improve public services, and enhance the overall quality of life for citizens. For example, AI–powered systems can optimize traffic light sequences in real–time, manage public transport fleets more effectively, predict and mitigate environmental pollution, and enhance public safety through intelligent surveillance and emergency response systems. B12 Consulting's work on an **AI–powered monitoring system for Brussels' tram network** is a practical example of AI in urban mobility . The national AI plan's objective to "Preserve the environment" also intersects with smart city initiatives, as AI can contribute to a circular economy and help ensure that urban development does not lead to an increased ecological footprint . Startups developing AI solutions for smart city applications, such as intelligent infrastructure, connected vehicles, and citizen engagement

platforms, will find a supportive policy environment and growing market demand in Belgium. The focus on trustworthy AI and data protection will be crucial in these public-facing applications .

6.4 Telecommunications

The **telecommunications sector in Belgium is a key enabler of AI adoption across all other industries** and is itself a significant user of AI technologies. AIworld.eu identifies telecommunications as one of the key AI sectors in Belgium . The increasing demand for data connectivity, high-speed internet, and reliable network performance, driven by AI applications and the proliferation of IoT devices, places the telecom sector at the heart of the digital transformation. AI can be leveraged by telecom companies to **optimize network operations, predict and prevent outages, enhance customer service through AI-powered chatbots and personalized offerings, and manage network security**. For instance, AI algorithms can analyze network traffic patterns to dynamically allocate resources, improve bandwidth efficiency, and ensure quality of service. Predictive maintenance, powered by AI, can help identify potential network issues before they impact customers, reducing downtime and operational costs. The "National Convergence Plan for the Development of Artificial Intelligence" emphasizes the need for an efficient infrastructure, which includes robust telecommunications networks . The plan aims to improve access to cloud services and strengthen the development of a competitive national and European AI infrastructure, all of which rely heavily on the capabilities of the telecom sector . As AI applications become more data-intensive and require low-latency connectivity (e.g., for autonomous vehicles or industrial IoT), the role of telecom providers in delivering 5G and future 6G networks will be critical. The Deloitte "Digital Consumer Trends 2024" report for Belgium indicates **rising satisfaction with internet quality, with 74% of surveyed Belgians satisfied with their connection, and increasing adoption of 5G, now used by 45% of Belgians** . However, the report also notes that 62% of Belgians do not know their internet speed, and younger users have higher demands, reinforcing the need for reliable and high-performance networks . AI startups can find opportunities in developing solutions for telecom operators that enhance network intelligence, automate customer interactions, improve cybersecurity, and enable new AI-driven services for both consumer and enterprise markets. The focus on data privacy and cybersecurity within the national AI plan is also highly relevant to the telecom sector, which handles vast amounts of sensitive user data .

6.5 Retail

The **retail sector in Belgium is increasingly adopting AI to enhance customer experiences, optimize operations, and drive sales**. AI applications in retail range from personalized recommendations and targeted marketing to inventory management and supply chain optimization. Sensidev lists "RetailTech AI" as an area of focus, offering **AI-powered**

recommendation engines for retail products based on customer behavior and preferences, and AI systems for optimizing inventory levels to reduce stockouts and improve supply chain efficiency . These applications can lead to increased customer satisfaction, higher conversion rates, and reduced operational costs for retailers. For example, AI algorithms can analyze purchase history, browsing behavior, and demographic data to provide tailored product suggestions to online shoppers or through personalized in-store digital displays. In inventory management, AI can predict demand fluctuations with greater accuracy, helping retailers maintain optimal stock levels and minimize overstocking or understocking. The "National Convergence Plan for the Development of Artificial Intelligence" aims to "Strengthen Belgium's competitiveness and attractiveness through AI" and to "Develop a data-driven economy" . Both of these objectives are relevant to the retail sector. By adopting AI, retailers can gain a competitive edge through improved efficiency and more engaging customer experiences. The plan's focus on facilitating research and technology transfer, and setting up "sandboxes" for AI experimentation, could also benefit retail startups looking to innovate with AI . Furthermore, the increasing use of e-commerce and omnichannel retailing in Belgium generates vast amounts of data, which AI can analyze to provide valuable insights into consumer trends, preferences, and purchasing patterns. This data-driven approach allows retailers to make more informed decisions about product assortment, pricing, promotions, and store layouts. The Deloitte "Digital Consumer Trends 2024" report notes that **38% of working Belgians use AI for professional purposes**, with tasks like idea generation and information retrieval being main uses . While not specific to retail, this indicates a growing familiarity with AI tools that could translate into adoption within retail operations and marketing. AI startups focusing on retail can develop solutions for customer analytics, dynamic pricing, fraud detection in online transactions, and AI-powered visual search, among other applications.