

CHAPTER I

The World of Work and AI: Integrating Catholic Social Principles in the Technology Industry

Reyner Pejunis (raynerpejunis92@gmail.com)
Angelo Luciani Moa Dosi Woda (serafim.cse@gmail.com)

STIKAS St. Yohanes Salib – West Kalimantan

Abstract

Artificial intelligence (AI) is transforming various fields including the world of work, promising to increase efficiency and productivity but also raising ethical dilemmas. This paper analyzes the challenges and opportunities of implementing AI in the workplace based on the principles of the social teachings of the Catholic Church. The impact of AI on the nature of work is discussed, including the risks of technological unemployment and shifting patterns of employment relationships. Core principles of Catholic social teaching such as human dignity, solidarity, and social justice are outlined for their relevance in guiding the ethical implementation of AI. The role of the Church and Catholics in the technology industry is also explored as a form of digital spirituality. It was concluded that the integration of Catholic social principles in AI can mitigate threats and maximize the benefits of this technology for humanity.

Keywords: Artificial intelligence, Catholic social teachings, World of work, Digital spirituality, Technology Ethics

Introduction

Artificial intelligence (AI) is shaking up the landscape of modern life, evolving into a digital transformation force that is changing various sectors, including the world of work. Like a double-edged sword, on the one hand, AI promises huge leaps in terms of productivity, efficiency, and innovation; but on the other hand, it raises complex ethical dilemmas and challenges. AI technology is capable of surpassing human capabilities in discrete tasks, but a deeper understanding of how AI as a whole will impact the future of human work and livelihoods (Liang and Yu, 2022). Some studies suggest that in aggregate, AI's

impact on employment will likely be neutral, with slow adoption rates and job creation in new sectors (Acemoglu and Restrepo, 2022).

The use of artificial intelligence (AI) is increasing. According to IDC, 75% of commercial company applications will use AI in 2021. From the banking sector, leading banks in the country utilize digital technology as much as 50% according to the IDC report, at least 40% of customers will get services via digital by 2025 (Sudaryanto, 2023).

The increasingly rapid increase in public interest is not without reason. The use of AI has several benefits, namely saving operational costs, improving services, managing data & information more quickly and efficiently, and making it easier to access information. However, the potential of AI in the RI 4.0 era, brings several challenges that should not be ignored. These challenges can be seen from concerns about employment because automation and the use of robotics replace human jobs (Posner and Weyl, 2018). This has the potential to cause unemployment due to the loss of many jobs. So, parties involved in the technology sector must immediately take proactive steps in making decisions and ensuring AI is applied ethically for the benefit of everyone.

This article analyzes the impact of (AI) in the workplace and explains how principles of Catholic social teaching in the world of work with AI, the application of Catholic social principles in a technological context, and digital spirituality to realizing human values in the Era of Advanced Technology

Literature Review

Principles of Catholic Social Teaching in the World of Work and AI

the principles of the Church's social teaching can make a critical contribution, namely personal dignity, justice, subsidiarity, and solidarity. In his message, the Pope observed that the complexity of the technological world demands an increasingly clear ethical framework to make our commitment to serving each individual in his integrity, and all people, without discrimination or exclusion, truly effective.

Moreover, the Pope pointed out that algorithms can be a bridge that allows these principles to enter digital technology through effective interdisciplinary dialogue. However, he underlined that in the encounter between various world visions, human rights must become an important meeting point in seeking common ground.

Religious institutions, in this case, the Catholic Church, are the only institutions that, in detail, continuously formulate their attitudes and teachings in the face of constantly changing social and societal realities. His attitudes and teachings are contained in the Association of Social Teachings of the Catholic Church (ASGK). Although the principles and points raised in ASGK are very fundamental, because they concern humanity, this does not necessarily mean that these teachings are binding on all Churches. The Catholic Church demands that scientific and technological advances, such as artificial intelligence be used to promote social justice and human well-being (Rome, 2020).

ASGK highlights the basic rights of workers that must be upheld, such as the freedom to organize and strike as well as the right to honorable work, fair compensation, job security, and rest time (XVI, 2018). ASGK advocates a type of work that fully integrates employees to foster creativity, rejecting exclusive contractual relationships in the workplace that separate people from their work (XVI, 2018). One of them is the principle of the common good, which demands that the application of AI does not ignore human rights or widen socio-economic disparities in society (Rome, 2020). In addition, the principles of natural law in ASK emphasize that the development and use of AI must be in line with moral principles that can be universally understood by the human mind, such as justice, freedom, and human dignity (Communication, 2023).

Although less specific, the ASK principles can provide direction for AI-related policies and actions to be ethically appropriate (Hall, 2019). It is important to ensure that AI's impact on human rights is always taken into account and that this technology continues to serve the public interest, not just the profits of a few capital owners. In responding to the rapid pace of development of AI, ASK invites all parties to work together to advance technology for the common good by upholding human dignity.

The Catholic Church emphasizes that AI and automation must not make humans mere means of production or mere commodities in the wheel of the modern economy. Human workers have a dignity that deserves respect, so they cannot be completely replaced by machines (Francis, 2020).

Therefore, the application of AI in the workplace must continue to involve humans in important decision-making processes that impact the work and livelihoods of many people. Here the principle of subsidiarity is also relevant, which emphasizes that decision-making should be carried out at the level closest to the people affected (Sullivan, 2008). In this way, the negative threat of AI to

employment and the risk of increasing socio-economic inequality can be prevented or at least minimized. Meanwhile, the positive potential of this technology can still be optimized for the welfare and prosperity of all mankind, in line with the spirit of universal solidarity taught by the Catholic faith.

Catholic Social Teaching Supports Workers' Rights In The Industrial World

Catholic Social Teaching (ASK) firmly supports the basic rights of workers, which are seen as superior to the rights of capital. ASK teaches that every worker has the right to decent work, fair wages according to family living needs, job security, adequate rest and holiday time, limited working hours, health and safety protection, prohibition of discrimination, the right to organize and strike as a last resort (Vivit et al. al., 2022). The Church rejects the view that treating work solely as a commercial contract separates workers from the nature of their work. On the contrary, the form of work must integrate the worker as a whole and encourage the actualization of the individual's creative potential (Compend. Soc. Doctrin. Church, 2004).

The Catholic Church has consistently condemned the practice of exploiting workers and violating their rights throughout history (XVI, 2018). The Church's Social Magisterium responded to the injustices experienced by workers in the era of the Industrial Revolution by affirming universal and eternal principles in supporting workers (Kristiyanto, 2012). The Church also reminds Catholic company owners and entrepreneurs to be responsible for treating workers fairly and guaranteeing their rights, rather than opposing the trade union movement or obstructing the spread of the Church's social teachings (Sullivan, 2008) (Ho & Caals, 2021).

Thus, Catholic Social Teaching firmly defends the human rights of workers in the modern industrial world. The principles taught by the Church are universal and relevant throughout time to protect individual dignity and prevent dehumanization due to unjust economic or technological systems. The Church continues to work to ensure that workers' voices are heard and their rights are fulfilled.

Application of the Principle of Solidarity and Social Justice Values in the Use of Artificial Intelligence The principle of solidarity is applied in the use of artificial intelligence through several aspects. First, the development and implementation of AI must be inclusive by taking into account the needs of all

groups so that no one is discriminated against based on their background (Hall, 2019). Second, to protect human rights, the application of AI must be able to improve human living standards, not vice versa to oppress disadvantaged marginalized groups of society (Compendium, 2004).

Third, AI developers and users have a high sense of responsibility to consider the impact of the emergence of new products resulting from AI processes on society, so AI development must work transparently, and ensure guaranteed reliability and security of AI systems (Vivit et al., 2021). Fourth, to prevent discrimination in the use of AI from exacerbating social inequality, strict supervision, and legal accountability are needed (XVI, 2018). Therefore, it is very important to apply the concept of solidarity to AI under the social teachings of the Catholic church to maximize the benefits of AI for the welfare of all humanity.

By avoiding injustice, social manipulation, or prejudice because of algorithms, AI upholds the ideal of social justice. AI usage must uphold human dignity and universal principles like forgiveness and mercy (Rome, 2020). Furthermore, a transparent ethical and regulatory framework founded on the concepts of justice is required to protect human rights in the digital space (Sullivan, 2008). Adopting international agreements that control the ethical development and application of AI and promote a variety of creative applications for it would require global collaboration between countries (Communication, 2023). It is envisaged that AI would enable social justice principles to be upheld while also fostering a more compassionate and just world.

Discussion

The Impact of AI Transformation on the Nature of Work

The swift progress of artificial intelligence technology is altering the character of labor in several domains; in the US, 47% of employment could potentially be supplanted by automation (Frey & Osborne, 2017). For example, the driverless car and truck transportation sector utilizes AI technology which has the potential to replace the work of human drivers (Corberán-Vallet et al., 2021). The transformation of jobs with AI successfully imitates human intellectual capabilities through machine learning and natural language processing techniques, such as IBM Watson and AlphaGo. This indicates a large opportunity for replacing human labor in jobs from data analysis, and medical diagnosis, to lawyers and journalists in the future (Kaplan, 2021).

Several researchers assess that AI will change the nature of work, where elements of creativity, collaboration between people, and technical abilities are emphasized more (Brynjolfsson & Mitchell, 2017). Thus, human workers need to improve their technical and soft skills to adapt to the shifting nature of work in the AI era. Furthermore, fundamental changes are also predicted in the employment relationship between workers and the organizations where they work. AI-based digital platforms enable the implementation of flexible work mechanisms such as distributed workforces which change traditional work relationships into short-term project-based contracts (Kaplan, 2021).

This shift in employment relationship patterns is expected to increase job precarization, where workers receive less protection and benefits than permanent employees. On the other hand, the flexibility of working time and work location offered also provides certain benefits for certain groups of workers such as housewives and those with physical limitations (Kaplan, 2021). AI advances are thus fundamentally changing the nature of work relationships, tasks, and the skills required in many areas of work. This shift creates adjustment challenges that are not easy for workers. Therefore, appropriate policies are needed to ensure a just transition, while maintaining workers' rights and welfare, in line with the evolution of the world of work in the AI era.

Catholic Social Integration in the Technology Industry

The Catholic Church views the importance of integrating the values of the Catholic faith in the development of the digital technology industry. Pope Benedict XVI in his 2009 World Communications Day message called on Catholics, especially young people, to bring their testimony of faith to the digital world. According to the Pope, evangelization amidst new technology requires a deep understanding so that technology can serve the Church's mission well (Benedict XVI, 2009).

Pope John Paul II encouraged Catholic scientists and professionals to make competent contributions in sectors that impact human life and health (John Paul II, 1983). This shows the Church's recognition of the role of Catholics in the technology industry to improve human welfare. In addition, Pope Benedict XVI emphasized the importance of fair access to communications technology for marginalized groups. The Pope warned that it would be tragic if new communication tools widened the digital gap between rich and poor (Benedict XVI, 2009). The Church also appreciates the establishment of Catholic universities

in developing countries which provide access to quality education regardless of a person's social or religious background (Benedict XVI, 2009).

Through its compendium of social doctrine, the Catholic Church emphasizes that Catholic educational institutions can make valuable contributions by integrating the Christian message into various disciplines (Council for Justice and Peace, 2004). Pope Francis also views interreligious dialogue as important in questions of ethics and the search for the meaning of life in the digital era (Francis, 2019). Thus, Catholic social integration in technology is expected to take the form of fair access, competent scientific contributions, and constructive dialogue for the sake of humanity.

The Church encourages the active participation of its members in various strategic positions to realize the integration of the ideals of the Catholic faith in digital technology. For example, by being directly involved in development, research, and technological innovation at Catholic universities and research and development institutions. As emphasized by Pope Francis (2019), this involvement is important to ensure that every technological product and service developed is in line with human values and the spirit of serving the common good.

Apart from that, Catholics are also encouraged to play a role in formulating digital technology policies and regulations at the national and global levels that are in line with the principles of Catholic social teaching. For example, regulations that prevent monopolies and protect the privacy and security of technology users' data so that they are protected from potential misuse of personal data for certain commercial or political interests (Justice and Peace Council, 2004).

The role of Catholic entrepreneurs and executives in technology companies is also strategic to ensure their products and services provide benefits to the public and implement responsible business ethics (Benedict XVI, 2009). At the consumer or technology user level, Catholics can also contribute by using and distributing technology products and services that are in line with the values of the Catholic faith. This will create market demand for ethical digital technology products, which in turn will encourage industries to compete to provide better products for the public (Lee, 2021).

Application of Catholic social principles in a technological context

One of the challenges in applying Catholic social principles to technology is the breakneck speed of innovation, which makes it difficult to conduct a thorough evaluation of the ethical implications of new technologies (Vivit et al., 2021).

Therefore, a responsive and anticipatory ethical framework is needed. Principles such as prudence and subsidiarity can assist technology decision-making at various levels to ensure appropriate responsibilities (Scherz, 2021).

As explained in the Church's social documents, principles such as solidarity, social justice, and shared prosperity are relevant to be applied in the context of technology (Francis, 2019). These principles teach that technology should serve the purposes of advancing the common good and respecting human dignity. Technology must be responsible and must not harm or violate human rights. Several key principles that need to be considered are the protection of human life, respect for human dignity, promotion of social justice, and orientation to the common interest/good (Sullivan, 2008).

Engineers, scientists, and technology developers are taught by the individual principles of personalism and solidarity always to consider how their work will affect society and other people in addition to themselves (Vivit et al., 2021). Meanwhile, at the policy level, the state is responsible for protecting people from the dangers of technology through appropriate regulations by the principles of social justice and the common good (Díaz-Rodríguez et al., 2023). By applying a comprehensive framework of thought based on Catholic principles, it is hoped that technological development can be directed toward mutual benefit and the sustainability of human civilization.

Promoting social justice means ensuring that technology is used to expand access to education, health, and economic opportunities for all groups, especially the vulnerable (Fransiskus, 2023). Meanwhile, an orientation towards the common good requires technology to serve the welfare of all society, not just the interests of a few groups (Díaz-Rodríguez et al., 2023). Thus, an ethical evaluation of the impact of technology and efforts to ensure its responsible use is necessary (Rome, 2022)

Digital Spirituality: Realizing Human Values in the Era of Advanced Technology

In responding to the rapid development of digital technology today, the Catholic Church calls on its people to be wise and careful. On the one hand, progress in the digital and information technology fields is something to be grateful for because it brings many benefits to human life. However, on the other hand, this development holds challenges and threats, especially if it is not balanced with true ethical and human values.

The digital spirituality in question refers to efforts to translate human values such as solidarity and justice into the design, development, and use of technology in the digital era. The Catholic Church sees the urgency of digital spirituality to overcome the increasing digital divide between those who have access to information technology and those who cannot access it. The Catholic Church's social teaching views digital technology as part of good creation if used for the common good (Vatican Ministry of Information, 2022). Therefore, the Church seeks to ensure that the development of digital technology is in line with human values and the teachings of the Catholic faith.

Pope Francis (2020) emphasized that digital technology must respect human dignities and evangelical values, such as truth, justice, love, and the protection of human life. The Church also reminds its people to be aware of the bad risks of technology such as internet addiction and online games which can damage morals (Indonesian Catholic Bishops Conference, 2021). Pope Benedict XVI warned that failure to provide equitable access to communications and information technology could create new forms of marginalization of poor and vulnerable groups (Benedict The Church encourages Catholics to be involved in efforts to integrate faith and technology, spreading the values of the Gospel on the 'digital continent' as a form of authentic digital spirituality (Pontifical Council for Social Communications, 2002).

Therefore, according to Pope Francis (2020), digital spirituality is needed, namely serious efforts to ensure that evangelical values and human dignity remain upheld amidst the rapid flow of advanced technology. In the view of the Catholic Church, everyone plays an active role in realizing this digital spirituality, whether as individual technology users, digital industry players, or technology policymakers in society. Several principles in implementing digital spirituality (Vatican Ministry of Information, 2022), namely:

1. Prioritize the common good above individual or group interests
2. Respect privacy and human dignity
3. Protect all levels of society from the negative impacts of digital technology
4. Maintain a balance between online and offline life.

As individuals, everyone is required to be wise in filtering and sorting digital information, be alert to false propaganda, and avoid excessive dependence on gadgets and the internet which damage real social relations (Indonesian Catholic Bishops' Conference, 2022). Apart from that, users need to understand and protect the privacy of personal data, maintain time to interact directly with those closest to

them, and wisely use the money to subscribe to online applications so as not to waste it.

Meanwhile, entrepreneurs and developers in the digital industry must prioritize services for the common good, not just to achieve big profits. They are also required to implement security protocols and protect user data, carry out strict censorship of negatively charged content, and limit features that have the potential to cause digital addiction in users of their applications. The government and information technology policymakers are required by the Church to create regulations and public policies that protect human values in the use of the internet and advanced technology. For example, by enforcing the Personal Data Protection Law, limiting access to negative content, and digital literacy and digital spirituality education programs for the wider community.

Thus, according to the Catholic Church, digital spirituality can only be realized if all components of society—individuals, industry players, and policymakers—collectively strive to maintain human values and human dignity amidst the rapid progress of digital technology. The contribution of all elements is needed so that technology is always intended, developed, and utilized for the true benefit of all.

Conclusion

Many in the world of work have switched to using AI technology because many fields not only cognitive development in the world of education, government, and which have a direct impact are the industrial world. all impacted by automation. The use of human intelligence requires collaboration and solid teamwork so the development of automation technology is expected to benefit humanity as a whole in the future. It is important to consider the advantages and disadvantages of changing patterns of employment relations towards a more flexible approach. Therefore, to face the challenges of AI in the world of work, governments, companies, workers, and the Church need to take steps:

1. The government develops policies that support the transition to a digital economy. These policies include investments in education and skills training, as well as programs to help workers who have lost their jobs due to automation.
2. Companies investing in the development and implementation of AI also provide skills training to workers to help in adapt to AI technology.

3. Workers improve their skills to meet the needs of the labor market in the digital era through formal education, non-formal training, and independent learning.
4. The Catholic Church continues to call for the values of faith to be integrated into technological developments through the active involvement of the faithful, responsible research contributions, and dialogue between stakeholders for the common good.

References

- Acemoglu, D., & Restrepo, P. (2022). Tasks, Automation, and the Rise in US Wage Inequality. *Journal of Economic Perspectives*, 36(1), 3-30.
- Benedictus XVI. (2009). New Technologies, New Relationships. Promoting a Culture of Respect, Dialogue, and Friendship. World Communications Day. https://www.vatican.va/content/benedict-xvi/en/messages/communications/documents/hf_ben-xvi_mes_20090124_43rd-world-communications-day.html
- Brynjolfsson, E., & Mitchell, T. (2017). What can machine learning do? Workforce implications. *Science*, 358(6370), 1530-1534.
- Communication, P. C. for S. (2023). Compendium of the Social Doctrine of the Church. Retrieved from http://www.vatican.va/roman_curia/pontifical_councils/justpeace/documents/rc_pc_justpeace_doc_20060526_compendio-dott-soc_en.html
- Compend. Soc. Doctrin. Church. (2004). Compendium of the social doctrine of the Church. Libreria Editrice Vaticana.
- Compendium of the Social Doctrine of the Church. (2004). Libreria Editrice Vaticana.
- Corberán-Vallet, A., Bermúdez, J. D., & Vercher, E. (2021). Forecasting new technologies: A review and an application to self-driving vehicles. *Technological Forecasting and Social Change*, 166, 120629. <https://doi.org/10.1016/j.techfore.2021.120629>
- Dewan Keadilan dan Perdamaian. (2004). Compendium of the Social Doctrine of the Church. Libreria Editrice Vaticana.
- Díaz-Rodríguez, F., Ferrari, A., Scanziani, M., & Latini, G. (2023). Catholic Social Doctrine and Tech Ethics: Human Dignity and Common Good in the Age of Artificial Intelligence and Robots. *Cultural Heritage in a Changing World*, 233-253.

Synergy of Catholic Ethics and AI in the Modern Technological Landscape
International Book Chapter - ISBN: 978-623-09-7875-3

- Díaz-Rodríguez, F., López-Ruiz, V. R., & Marchiori, D. M. (2023). Technological Innovation Between the Common Good and the Throwaway Culture: Insights from Catholic Social Teaching. *Journal of Business Ethics*, 1-15.
- Fransiskus. (2019). Address of His Holiness Pope Francis to Participants at the Plenary Assembly of the Pontifical Academy for Life.
- Fransiskus. (2023). *Fratelli Tutti: Encyclical on Human Fraternity*. Orbis Books.
- Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerization? *Technological forecasting and social change*, 114, 254-280.
- Hall, P. J. (2019). Human rights and emerging technologies: Catholic social thought and human rights in the age of artificial intelligence and automated warfare. *Journal of Catholic Social Thought*, 16(2), 277-300.
- Ho, D. K., & Caals, J. W. (2021). Personalism in Catholic social teaching: Implications for the employer-employee relationship in Catholic healthcare. *Christian Bioethics*, 27(2), 138-158.
- Ho, J., & Caals, J. (2021). Peter Maurin's Personalist Economics. *American Catholic Studies*, 132(4), 25-44.
- Kaplan, A. (2021). Artificial intelligence and the future of work: Toward a new social contract. In *Toward a New Social Contract: The Quest for Prosperity*. Columbia University Press.
- Kementerian Informasi Vatikan. (2022). Ethics in Digital Technology and Social Communication. <https://www.pccs.va>
- Konferensi Para Uskup Katolik Indonesia. (2021). Pedoman Pelindungan Anak dalam Lingkup Gereja Katolik di Indonesia. <http://dokpen.kawali.or.id>
- Kristiyanto, Y. J. (2012). Ajaran sosial Gereja tentang buruh pabrik: tinjauan etis terhadap enam prinsip dasar hak buruh menurut Rerum Novarum (1891) dan Quadragesimo Anno (1931).
- Lee, J. (2021). Exploring Digital Spirituality. *International Journal of Religion & Spirituality in Society*, 5(2), 78-98
- Liang, Y., & Yu, B. (2022). Artificial Intelligence and the Future of Work: Technological Displacement or Job Transformation? *The Economic and Labour Relations Review*, 33(1), 3-23.
- Moore, J. W., Nolan, J., & Burke, E. J. (2014). The Producerist Discourse of Globalization. *International Journal of Comparative Sociology*, 55(1), 37-58.
- Posner, E. A., & Weyl, E. G. (2018). *Radical markets: Uprooting capitalism and democracy for a just society*. Princeton University Press.

Synergy of Catholic Ethics and AI in the Modern Technological Landscape
International Book Chapter - ISBN: 978-623-09-7875-3

- Rome, P. V. (2020). *Fratelli Tutti: Encyclical on human fraternity*. Orbis Books.
- Sangiorgi, D., & Parisi, S. (2021). Designing AI for social good: A methodological framework to include excluded communities and mitigate negative consequences. *Technologies*, 9(2), 31.
- Scherz, J. (2021). Working Bishops: A Framework for Interrogating Labor and Automation. *Religions*, 12(2), 102.
- Sullivan, G. (2008). The American Catholic Church and Labor Unions. *The Catholic Historical Review*, 94(4), 747–764.
- Vinichenko, M. V., Maloletko, A. N., Frolova, E. V., Rubtsova, M. V., & Bondaletov, V. V. (2020). The impact of the technological revolution on the transformation of the basics of forming human potential. *Entrepreneurship and Sustainability Issues*, 7(3), 2409-2425.
- Vivit, D., Manion, J., Congiu, M. L., Commins, J., & Paré, D. (2021). *Artificial Intelligence Ethics: The Next Frontier in Data and Catholic Social Teaching*.
- Yohanes Paulus II. (1983). *Allocutio Ad Administrationis Consilium Conventus Internationalis Scientifici «De Necessitudine Enitendi Pro Vitae Humanae Integritate Tuenda»*. *Acta Apostolicae Sedis*, 76(2), 188.

Author's Profile



Rayner Pejunis, born in Ranau Sabah, Malaysia, 12 January 1992, email: raynerpejunis92@gmail.com. Education: Graduated from the Bachelor of Theology Program at STIKAS Santo Yohanes Salib, Bandol in 2023. The current functional position is a postgraduate student of the Master of Theology Program at STIKAS Santo Yohanes Salib, Bandol.



ANGELO LUCIANI MOA DOSI WODA, S.S., Lic.Th., born in Jakarta, Indonesia, 30 September 1978, email: serafim.cse@gmail.com. Education: Graduated from Licentiate in Sacred Theology at Pontifical University of Saint Thomas Aquinas (Angelicum) Rome, Italy in 2018. My current functional position is as a lecturer of dogmatic theology at STIKAS Santo Yohanes Salib, Bandol