



A Reformed Perspectives on the Fourth Industrial Revolution

Abstract

The chronicles of Christian history bear witness to the profound impact of the Protestant Reformation, an epochal event characterized by its theological dynamism, fostering the emergence of the Protestant movement and the splintering of the Church. Within the purview of this discourse lies a compelling exploration of the salient question which is how a reformed perspective or Reformed theology wield influence over the Fourth Industrial Revolution? This paper embarked on a succinct journey through the bedrock theological tenets that underpinned the Reformation, endeavoring to discern their continued pertinence amidst the evolving technologies and technological advancements of the present-day. The methodology adopted herein comprises a discerning qualitative analysis of secondary sources, ensuring a robust foundation for the conjectures and insights presented. The paper concluded with some suggestions and calls for a round table discussion or dialogue on pertinent ethical considerations on the Fourth Industrial Revolution, especially the place of Artificial Intelligence (AI).

Keywords: Protestant, Reformation, Emerging technologies, technological advancement, conjectures, Artificial Intelligence.

Mark, Morris

A PhD candidate of the National Open University of Nigeria, Abuja, Nigeria
+2348032004293
ORCID.: 0009-0006-7642-8355

Musa Gaiya, PhD
University of Jos

Michael E. Okoronkwo, PhD
National Open University of Nigeria

Corresponding Author's Email:
Nou215008133@noun.edu.ng,
namkerejudoudo@uniuyo.edu.ng

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Introduction

There have been times in church history when Christendom seemed to be divided, the first was the Great Schism or the East-West split of 1054 AD, which saw the Eastern Orthodox Church and the Roman Catholic church split apart. The other was in 1517 AD when Martin Luther started the Protestant Reformation. Luther's cry for reform drew wide attention to those abuses in the church and soon a movement began, and thus was born Protestantism, the third great branch of Christendom (Michael, n.d). The Reformers stressed the Bible as the ultimate authority in matters of faith and practice. The Reformation began as a religious protest against certain practices and teachings of the Roman Catholic Church in the sixteenth century and

ultimately resulted in various groups of Protestants breaking away from the mother church (Latourette, 1975 p. 211). By the "Reformed," I mean those branches of Christianity that traced their modern origin to the reforms not of Luther but of Ulrich Zwingli, John Calvin, Martin Bucer, John Knox, Thomas Cranmer, and dozens of other architects of national churches on the European continent and in Britain (Conkin, 1995, p. ix). and by extension to Africa and Nigeria in particular.

The Fourth Industrial Revolution (4IR) or Industry 4.0 represents the shift towards computerization and data exchange in manufacturing technologies and processes, encompassing cyber-physical systems, the Internet of Things (IoT), Industrial Internet of Things (IIoT), cloud computing, cognitive

computing, and artificial intelligence. The term refers to the technological advancements of the 21st century (Bai *et al.*, 2020). Notably, in the course of the 4IR, technologies like Artificial Intelligence (AI), gene editing, and advanced robotics have fused the lines between physical, digital, and biological worlds. It also indicates a social, political, and economic amendment from the digital age to an era ingrained in connectivity, marked by the ubiquity of technology in society that changes the ways humans' involvement and the world around them (Alsulaimani & Islam, 2022).

The "4IR will frighten nearly every industry in every country, creating new opportunities and encounters for people, places, and businesses to which we must respond" (Schwab, 2017). It is reforming industries globally by integrating advanced technologies such as AI, blockchain, robotics, and the Internet of Things (IoT) into operational processes. These inventions promise improved efficiency, connectivity, and service delivery (Matsoso *et al.*, 2025). The 4IR's key impacts include increased productivity and efficiency, economic and societal interruption with potential job displacement and growing inequality, enhanced global connectivity through digital platforms, and new security challenges due to cyber risks and data transmission. It necessitates a significant shift in skills and adaptation to rapid technological change for individuals and businesses (Sorooshian & Panigrahi, 2020).

History of Industrial Revolution

The first three industrial revolutions: the steam engine, the age of science, and mass production have changed our contemporary society and reformed the world around us fundamentally (Ndung'u & Signe, 2020). The first industrial revolution began around the 1760s with the start of the steam engine, which powered the manufacturing sectors in relation to agriculture and textiles. The first industrial revolution was slow and required an emergence of mechanization within the industry as the foundation of the economy. A new energy type was created with the mass extraction of coal, together with the discovery of the steam engine that revolutionized the economy, human, and material exchanges.

Second industrial revolution: 1870 to 1969 is the period of the second industrial revolution, where technological improvement in the production of steel and iron, as well as the light bulb, was invented as a source of energy (Viswanathan & Telukdarie, 2022). It focused on the mass production, electrical energy utilization, and labour division (David *et al.*, 2022).

Third industrial revolution: from 1969, the third industrial revolution occurred with the introduction of the programmable logic controller to support digital programming of automation systems (Lee & Lee, 2021). The digital programming brings a highly flexible and efficient automation system. Computer-Integrated Manufacturing (CIM) controlled the whole production process by

integrating computers into planning and production processes (Viswanathan & Telukdarie, 2022).

Fourth industrial revolution, or Industry 4.0 as first applied, refers to the achievement of innovation, developments, and processes in the manufacturing industry, including new technologies in the growing market. 4IR, or Industry 4.0, refers to the rapid evolution of technology, industries, and societal patterns and processes in the 21st century (Yusuf *et al.*, 2020).

Examples of the 4IR include: Quantum Computing, a promising new technology with the potential to accelerate the development of AI. The two most promising branches of AI promoting the 4IR are machine learning and deep learning, which are anticipated to be impacted to ever higher heights by quantum computing and neuromorphic devices (Mpofu & Nicolaides, 2019). Internet of Things (IoT) refers to physical objects (or groups of such objects) equipped with sensors, computing power, software, and other technologies that communicate with one another and exchange data through the Internet or other communications networks (Lee *et al.*, 2021).

The Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the progress of computer systems that can accomplish tasks naturally requiring human intelligence. These AI-powered systems are proficient in understanding natural language, identifying patterns, and making

intelligent decisions. AI enables machines and systems to behave like humans by learning, thinking, resolving problems, seeing, and understanding language. 4IR is about merging the tangible world with the digital and biological ones, and with AI as a key component of them. AI can be seen as the brain for the systems that make things happen. The study of intelligent agents, or any system that comprehends its environment and performs in a way that exploits its chances of succeeding, has been distinct as the focus of AI. Previously, robots that mimic and exhibit "human" cognitive abilities associated with the human mind, like "learning" and "problem-solving," were referred to as "artificial intelligence" (Jin & Shin, 2021).

AI is changing both how and what we do, and who we are, viz. Privacy is one major concern, our concepts of ownership, purchasing habits, the time spent working or doing other things, pursuance of careers, use of talents, social life, meeting people, and relationships in general. The health sector is not left out with its fast-changing patterns, as a result of this, which eventually leads to human enhancement in some way. Some breakthroughs are altering what was seen as human by progressing the present limits of life expectancy, health, intellect, and capabilities. These advances will force us to reevaluate our moral and ethical standards (Evron, 2021). The opportunities are immeasurable because they are only limited by human imagination (Tella *et al.*, 2022).

Ethical Issues of the Impact of 4IR

The technologies of the 4IR are advancing and getting recognition or acceptance at a fast pace, posturing numerous ethical dilemmas such as the weakening key aspects of humanity – ethical agency, human associations, intellectual acuity, freedom, privacy, and the dignity of work. The impact of AI seems to be changing the view of reality and menacing egalitarianism, in part due to the asymmetry of power between Big Tech and users (Peckham, 2021). “The revolutions occurring in biotechnology and AI, which are redefining what it means to be human by pushing back the current thresholds of life span, health, cognition, and capabilities, will compel us to redefine our moral and ethical boundaries (Schwab, 2016).”

Several areas of our humanity are being obstructed and disrupted by 4IR or AI and their practice. Jeremy Burford Peckham summed these ethical issues as:

Cognitive acuity, when AI acquires and transmits out skilled tasks that humans accomplish, reliance on automation may lead to a loss of intellectual power, decision-making insight, and creativity. Many reasoning or skilled tasks, formerly carried out by humans, are now being executed by AI algorithms, such as data analysis in accountancy, medical image explanations, and the ability to relate and interact with others. The over-assignment with digital assistants, robots, health-care technologies, and the use of sex robots (in particular) substitutes personification of objects

and the advancement of non-human relationships that modify our ability to maintain or form true relationships with humanity and God, the creator of humans.

Children’s emotional and social growth is inhibited, and their ability to empathize is reduced, along with the emotional maturity needed in normal human relationships and social interactions. Personification of artefacts leads to feelings of ethical responsibility and the desire to assign rights to personified artefacts, resulting in idolatry (Exo 20:3-5; 1 Jn. 5:21). Lack of Freedom and privacy from the surveillance of its citizens, either through facial recognition and other traits or the gathering of private data for running smart cities and other features.

The free product or service offering model is an abuse of power because consumers are enticed by Tech's offerings without informed agreement to their data use. Moral agency (Ethical activities) is given to robots, such as a self-driving vehicle, to make moral decisions, and we effectively delegate a uniquely human obligation. The dignity of labour is taken away as jobs are partially or completely replaced by AI and robots. AI is now affecting human-acquired skills. There is a loss of a sense of what is tangible through the combination of physical and virtual worlds. Immersion in virtual and augmented reality could lead to addiction, a loss of self-control, loss of independence, and control, with a resulting loss of true community from isolation and virtual relationships. The

worth of life, life expectancy, impermanence, or a loss of the sense of our mortality as age is extended and health improves. Genetic Engineering questions the value of life and seeks to play God (Exo 20:3; Deut 5:7).

Areas that we would have thought of as creative are impacted by software that seems to mimic the human, for example, journalism, music composition, or art. Social media seems to be our friend, connecting us to the world –but it soon easily ends up immersing us into a virtual world that divorces us from reality. How is that possible? How can a civilized society be so gullible? It is all because of 4IR and AI at the heart of social media and other digital platforms that learn from our every word and click online.

The underlying business model that pays for our connecting to others is advertising. This might seem irritating rather than corrupting, but the truth is that profits stem from increased user engagement, and the algorithms used don't care if we are viewing fake news or are being radicalized in the process. Online surfing is drawing us into someone else's view of what the truth is. The more we engage, the more we are sucked into a group with similar views (cookies), isolating us from other views and eventually cutting us off from unbiased reality. This social bubble and the newsfeeds that it generates become our reality. These virtual worlds that we dwell in are gradually destroying our souls, spirits, and humanity.

The Concept of the Reformation

The reformation, from the Latin reformation for improvement, was at the beginning used in a more general sense and was employed in almost all spheres of life, including the ecclesiastical, legal, and political spheres. The term suggests the need to return to the ideal past (Michael, n.d, p. 1). The term Reformation can be seen as a comprehensive renewal of the church, and its followers were called Protestants (Michael, n.d, p.2). Fundamentally, the Reformed Christians or perspectives emphasize the diversity of beliefs within the Reformed tradition, where some adhere closely to confessions, while others hold slightly different opinions but still share the same foundational doctrines. During this era, there was a notable surge in what we now identify as modern science and politics, coupled with significant advancements in printing technology. This development ushered in an information revolution, allowing ideas to circulate more rapidly than ever before. This information revolution played a pivotal role in fueling the Reformation, which unfolded roughly between the fourteenth and sixteenth centuries (Hill, 2006, p. 240). The Reformation can be characterized primarily as a 'revolution,' focused primarily on challenging the authority of the Church, particularly the Papal State, and contesting the hierarchical structure of the Church as the ultimate authority and final arbiter in both secular and religious matters (Pillay, 2017).

The heart of the Reformation was to reform, revive, and renew the church. The reformers saw the church as not standing up to the realities of its time in challenging corruption, sexual

immorality, ethical challenges, and political power (Pillay, 2017, p. 10). "Thus, the 16th-century Protestant Reformation was an attempt to reform and transform both church and society. It establishes that the Reformation embraced several areas of human activity: the reform of both the "morals and structures of church and society, new approaches to political issues, shifts in economic thinking, the renewal of Christian spirituality, the reform of Christian doctrine, and ethical consideration of the effect of the industrial revolutions (Pillay, 2017, p.10).

The Impact of the Reformation

The Reformation changed the religious landscape of the Western world, Africa, and Nigeria, to be precise, where the Roman Catholic Church's hegemony was broken. They opened the door to new profanations and frontier groups that have led to the expansion in the number of Protestant denominations, and as new churches continue to break away from old churches (Michael, n.d., p. 2). Though the split of the church may not be a new phenomenon, Paul the Apostle stated it in 1 Corinthians 11: 18 19 "For first of all, when you come together as a church, I hear that there are divisions among you, and in part I believe it. For there must also be factions among you, that those who are approved may be recognized among you." The Message Bible is clear in its admonition that "These are the ones who split churches, thinking only of themselves. There's nothing to them, no sign of the Spirit! (Jud 1:19).

The emphasis on an individual's relationship with God and each person's ability to interpret The Reformation also prompted "political, academic, scientific, and philosophical revolutions." Humanism, individualism, nationalism, and several others have Reformation connections (Michael, n.d., p. 4.) Through the Reformation, the true gospel and the essential doctrines of the Christian faith were brought back to light, and this was largely through the reformer Martin Luther (Michael, n.d., p. 5). Undoubtedly clear is the fact that the Reformed center continually confronted religious competitors and, in time, also suffered numerous internal schisms and hence, the several Reformed groups (Conkin, 1995, p. ix). The first concern of a Reformed Christian must always be content based on the renewal of the Church in line with the recovery of the authority and theological integrity of the church's message and a renewed emphasis on preaching centered on the life, death, and resurrection of Jesus Christ. Of course, without content, form has no substance (Leith, 1988, p. 13). In line with Michael's submission (Michael, n.d., p. 6). Five vital dogmas emerged, bringing the Church to its biblical roots:

- i. Sola Scriptura - "by Scripture alone" - the Bible is an infallible and authoritative Word of God and appropriate for all matters of life. It is the only standard for the Church's teaching. Therefore, the Scriptures must be given faithfully and carefully to the people in the language of the people and simple to their comprehension (2 Tim 3:16).
- ii. Solas Christus - "by Christ alone" - Jesus Christ is the only mediator

between God and man, salvation from sin's penalty and power is secured by the death and resurrection of Christ alone (Jn 14:6). God's work for our salvation in Jesus Christ cannot be sufficiently stated or potted in neatly inscribed propositions. Our salvation is the work of God in Christ, who did for us what we could not do for ourselves (Leith, 1988, p. 66).

iii. *Sola Fide* - "by faith alone" - Salvation is received by faith alone. We need only believe in the Lord Jesus Christ for the forgiveness of our sins and receive Him as Lord. True saving faith is evidenced by a life of repentance from sin (Rom 10:13). All these confirm that one need not work to be saved or to make him righteous, but faith alone confers all of them on him.

iv. *Sola Gratia* - "by grace alone" - Salvation is solely a sovereign work of God, only received by His grace. There is nothing man can do to save himself from the penalty and power of sin (Eph 2:8).

v. *Sola Deo Gloria* - "to God alone the glory" - God is sovereign over all events of history, including salvation, and all are arranged by Him for His and the glory of Christ alone (1 Cor 10:31). Therefore, every activity of the Christian is to be lived under the Lordship of Christ to the glory of God alone.

Ideals of The Reformed Perspectives:

The Reformed perspectives are primarily in terms of the action of God in the word, sacraments, and their influence on the system. This is made possible through some inherent ethos or motifs of a reformed mind, which are:

i. **Sovereignty of God:** The central theme of the Reformation is that every human being has everything to do with the sovereign living God. He is God beyond limits and description; He is the purpose and will of our existence as His image bearers on the surface of the earth. He alone is the creator of the heaven and the earth and everything therein (Gen. 1 & 2).

ii. **The Glory of God and His Purposes:** This is as imperative as the salvific work. Human beings are religious beings called and created to serve; in all, God is the ultimate, supreme, and majestic. We are fearfully and wonderfully made (Psa. 139:14) indicates the uniqueness of every individual with his unique identity and purpose, which is rooted in eternity with the sole aim of giving glory to God of creation (Gerhart & Udoh, 2007, p. 633).

iii. **Polemical against Idolatry:** The Reformation stands against all forms of paganism and resists every effort to get control of God (Leith, 1981, p. 74). Exo 20: 3 underscores this: "you shall have no other gods before me."

iv. **The Word of God:** The authority of the Bible is recognized by all Christians, yet Christians differ in their analysis of the scriptures. The Reformed emphasized Biblical authority (Leith, 1988, p. 31). The Reformed not only sought freedom to worship God but were on errands to establish a 'kingdom of God' built based on the Word, and demonstrated that a Christian community is possible. The Reformed community has the power of the Word, which they preached, and the Word was the strength of the fathers of the Reformation movement, and should be

the strength of a Christian personality (Leith, 1988, p. 33).

v. A life of Holiness: The reformed perspectives take seriously the issue of Holiness, which is in line with the Biblical injunction to a holy lifestyle (1 Pet 1:14-16). The Reformed mind conforms to the will of God, where forgiveness is key as they aspire to conform to the nature of God, and one way to attain such is by the renewal of the mind (Rom. 12:1-2).

vi. Service to God: "And you shall serve the LORD your God, and He will bless your bread and your water, and I will remove sickness from your midst." (Exo. 23:25). The reformed community is known for its generous services aimed at making the human race better.

vii. Preaching: John H. Leith, quoting James Nicholas, states that "The Reformation was the greatest revival of preaching in church history." (Leith, 1981, p. 82). Preaching is said to be at the center of the Reformation, and such preaching must be able to rebuke, exhort, correct, reprove, and instruct (2 Tim. 4:2).

viii. Church and Care: The reformed mind sees the Church as a body responsible for the care and nurturing of a life of faith and obedience to the word of God. The work of a pastor in a church can neither be quantified nor over-emphasized; "it is preeminently the renewal of life in the image of Christ." (Leith, 1981, p. 85). It is about the redirection of life from grass to grace. Care of souls and their advancement in the image of

Christ is paramount to the Church as an organized setting.

ix. Disciplined life: Personal discipline is a key characteristic of most achievers, including the reformers. Christianity is a life after Christ, which is characterized by a high sense of discipline, as is seen in the life of Christ, the master (Leith, 1981, p.86).

x. Simplicity: Simplicity in this context can be likened to sincerity. It is on record that the reformers opposed all forms of arrogance and complications; rather, they adopted a lifestyle of being bare, direct, and devoid of all forms of waste. Being simple is to be realistic and should apply to all aspects of life and godliness.

Conclusion

The Fourth Industrial Revolution, especially Artificial Intelligence, is altering both what we do and who we are. Our feelings of privacy, perceptions of ownership, procuring habits, the amount of time we spend working and playing, and how we pursue careers, improve our talents, meet people, and foster relationships are all being impacted by AI as they continue to fundamentally change how people live, work, and interact with one another. Every aspect of human existence is changing as a result of the 4IR.

There is a need for the Church of Christ to develop a Christian strategy (Van Geest, 1999, p. 20). Along with the framework of establishing a biblical and theoretical basis for the ethical concerns

A Reformed Perspectives on the Fourth Industrial Revolution

raised with the AI and 4IR in general. We should analyze the key role and impact of AI and proffer a more ethical solution that conforms with the tenets of the Reformed. The Reformed perspective is known to promote an order based on Biblical injunctions. There is a need to address rampant ethical issues, the increasing digital gap, and the relegation of human roles or duties at the expense of AI. This trend, if not checked, will someday also eliminate the role of the clergy in liturgy since AI has the potential to eliminate the human role.

One other concern that must be ethically addressed is the collapse of the distinction between natural and artificial. Historically, the world has always been divided into the natural part of the given world and the artefactual from human purpose and crafts. The world of the artefactual keeps expanding with technology while the natural diminishes (Stott, 2006, p. 426). These technologies are helping the generations to learn the human realities of ageing, illness, infertility, disability, frailty, depression, and death. This is the way we are made-the human condition.

Now technology has advanced to the point of offering a solution to these problems by learning to break free from the limitations imposed by our physical nature or God. In all these, the Reformed understands that God instills his creation with order and his creation imposes limits which technology wants to go against (Stott, 2006, p. 430). We are to live and behave in ways that are consistent with the created moral order of God, which guarantees success, and our lives will flourish. Proverbs 4 10-13

(NIV) states, "Listen, my son, accept what I say, and the years of your life will be many. I instruct you in the way of wisdom and lead you along straight paths.

When you walk, your steps will not be hampered; when you run, you will not stumble. Hold on to instruction, do not let it go; guard it well, for it is your life." This is wisdom, and wise living is living in accordance with God's plan and in line with His words, which implies that technological advancement that will challenge His plans or words for mankind is questionable and should be given another consideration with a view to accommodating it in line with the precepts of the Lord. It is important to note that humans derive their meaning from God in whose image they are made. The pride of humanity is derived from Him whose image we bear. It therefore has become imperative that a council on ethics be formed in line with other councils (such as the council of Nicaea, which saw the formation of the Nicene creed in 325AD) in the face of artificial intelligence and 4IR advancement to come up with ethically acceptable use and application of the AI and 4IR in general.

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A Reformed Perspectives on the Fourth Industrial Revolution

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A Reformed Perspectives on the Fourth Industrial Revolution

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