

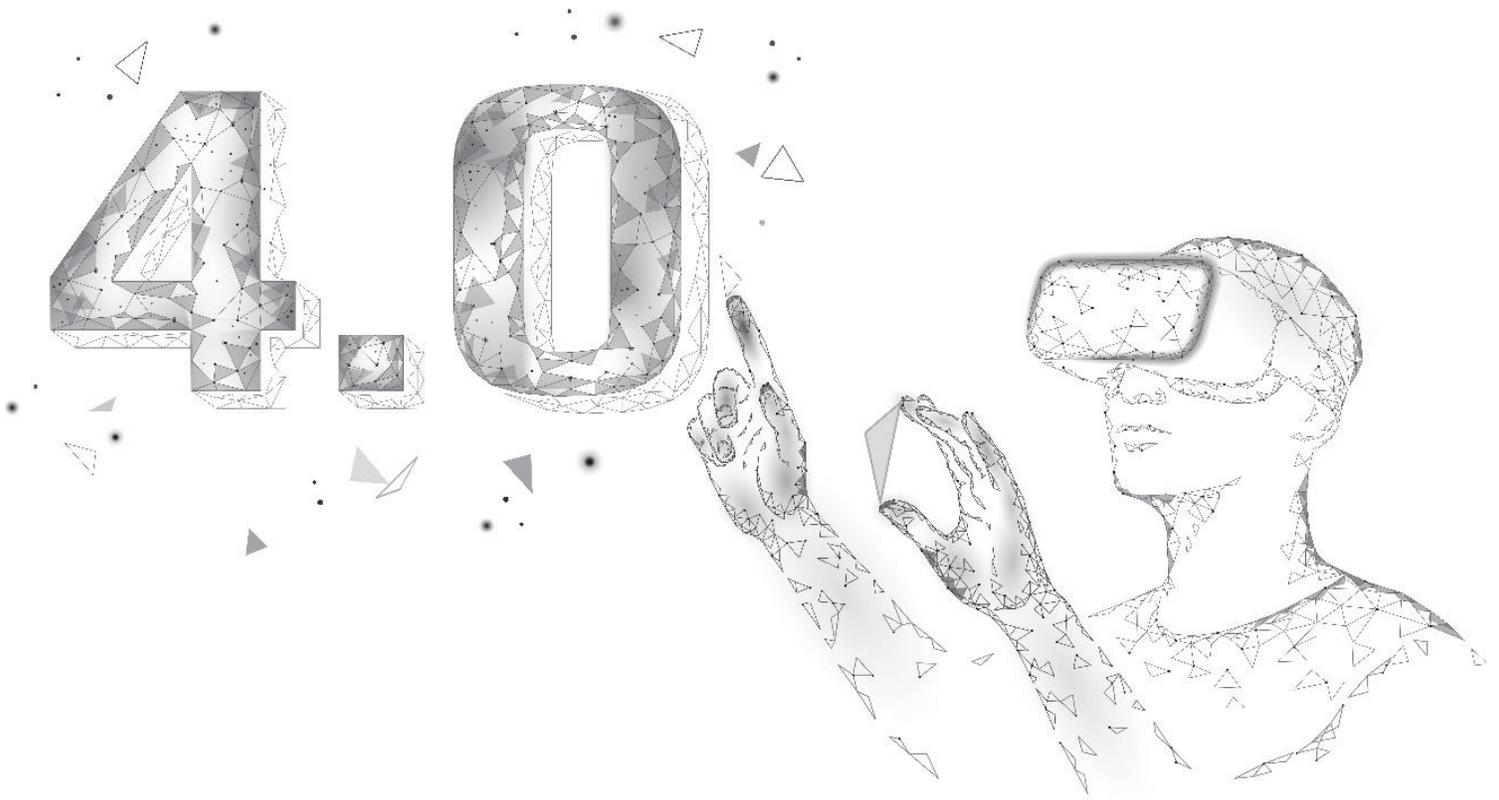
Harnessing the Fourth Industrial Revolution

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Challenges and Opportunities



The Institute for Policy, Advocacy, and Governance (IPAG)



Harnessing the Fourth Industrial Revolution: Challenges and Opportunities

Syed Munir Khasru
Chairman
The Institute for Policy, Advocacy, and Governance (IPAG)

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Foreword

Syed Munir Khasru

Chairman

The Institute for Policy, Advocacy, and
Governance (IPAG)

The advent of technological supremacy is now termed as the *Fourth Industrial Revolution* (FIR) which brings in a splurge of disruption in almost every sphere of our lives. FIR is making us rethink and redo the way we communicate, commute, or even entertain ourselves. It also is happening parallel with other mega-trends which among others include rapid demographic transition and growing consequences of climate change. These forces are forcing countries to fundamentally shake up existing arrangements as governments and citizens face the challenge of embracing new technology without disrupting the old mother nature.

As with all technological changes, their impact will be shaped by the choices we make and the ends to which they are put to use. Just like nuclear fission could create civilian energy or military weapons, these innovations could have a wide range of applications and impacts, both positive and negative, on a whole range of issues which among others include things like democratic governance, the definition of work, privacy, basic citizen rights, and the obligations of the state to its people. To effectively respond to these challenges, we need to embrace predictive decision-making, adapt to emerging sources of growth and employment, and reimagine the modalities of state-citizen engagement.

Against the backdrop of this ground realities, IPAG is pleased to bring about the publication titled, '**Harnessing the Fourth Industrial Revolution: Challenges and Opportunities**', which provides analysis, insights, and food for thoughts on issues related to the FIR and its impact on education, employment, health system, lifestyle & living, governance, and financial system. The publication represents views, notes, tech-stories, best practices, and applications from some of the leading thinkers, industry practitioners, tech-gurus, and

policymakers from around the world. To realize the full potential of societal and economic benefits, the components of FIR need to be adopted in a holistic way that promotes inclusivity, shared understanding, competitiveness and transparency. The book provides adaptive action plans and initiatives that can positively influence the benefits generated from the FIR and suggests response mechanisms for successfully embracing the new lifestyle in the years to come. As part of the IPAG Knowledge Series, we shall continue using our global network and outreach to pool the best of minds across continents in pursuit of intellectual excellence. The book is a culmination of countless hours spent on thought provoking ideas, forward looking strategies, and charting out a life and living that will be unleashed by the FIR so that we are well prepared for it. In that journey, IPAG welcomes comments and suggestions from our colleagues, partners, patrons, and well-wishers as we strive to take our endeavors to the next level of excellence.



Syed Munir Khasru
Chairman
The Institute for Policy, Advocacy, and Governance (IPAG)



Message of Felicitation

Dr. Fahad M. Alturki
Chairman, T20 Saudi Arabia
(think tank consortium under the G20 Saudi Presidency, 2020)
Vice President and Head of Research
King Abdullah Petroleum Studies and Research Center (KAPSARC)
Riyadh, Kingdom of Saudi Arabia

I congratulate The Institute for Policy, Advocacy and Governance (IPAG) on the publication of its book **“Harnessing the Fourth Industrial Revolution: Challenges and Opportunities.”** The Fourth Industrial Revolution (4IR) has the potential to foster sea changes in a number of areas, from health care and education to governance and commerce. The exponential increase in computing power, network, and digital services facilitated by 4IR technologies can unlock significant gains in economic efficiency and access to information and education. Manufacturing seems to be particularly impacted by the 4IR, with a substantial proportion of global research and development spending focused on manufacturing industries. However, mishandling the changes enabled by the 4IR might displace labor if they are not handled correctly. Regardless, technologies and industries disrupted by the 4IR will create important shifts in the global economy.

As noted by the book’s authors, while the benefits of the 4IR are already starting to manifest, the world should proceed carefully to mitigate its emerging negative externalities. Some technologies encompassed by the 4IR can be used to destructive ends. Widespread unemployment, in the transition period or beyond, is another source of serious concern. While social media makes us more interconnected, the veracity of information transmitted through such media is more suspect. Collaboration among government and regulatory stakeholders will be critical in tackling these challenges associated with the 4IR.





I hope this book's insightful commentaries from leading experts will reach a broad swathe of stakeholders, enabling them to have a better understanding of the challenges and opportunities of the 4IR. Authors from around the world have written on topics important for the 4IR, such as its impact on employment, health systems, governance, financial systems, energy and the environment. While some authors examine the present modalities of societal and human-technology interaction, others take a look into the future of the technological disruption, sharing their views on the impact of the disruption taking place in different sectors, including the cybernetic industry, service sectors, and education and agriculture. I hope this book will deepen the understanding of the critical issues emerging from the 4IR and generate dialogue among stakeholders to help mobilize efficiency gains from 4IR technologies. As the 4IR is still in its early stages, I hope this book will inspire further research and analysis in the field.

My very best wishes to the authors and readers of this book.

A handwritten signature in blue ink, appearing to be 'Fahad M. Alturki', written in a cursive style.

Dr. Fahad M. Alturki

Chairman

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