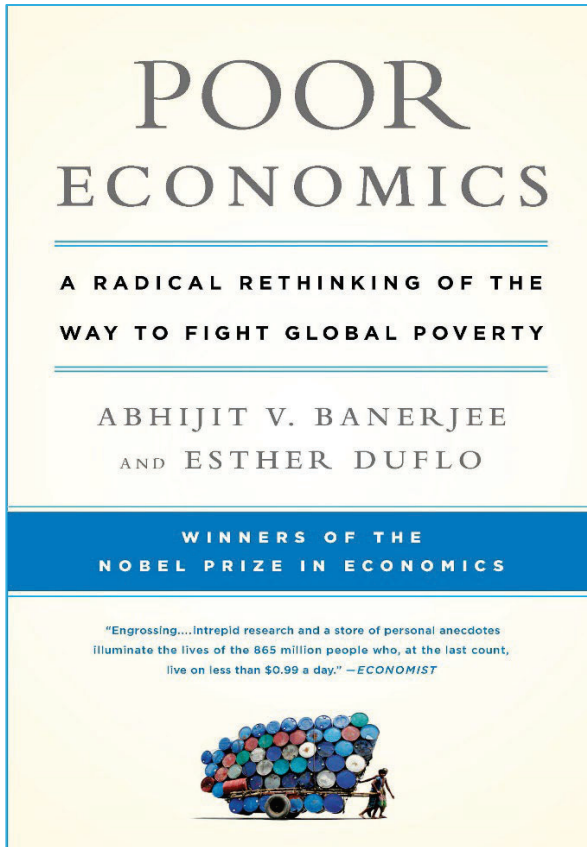
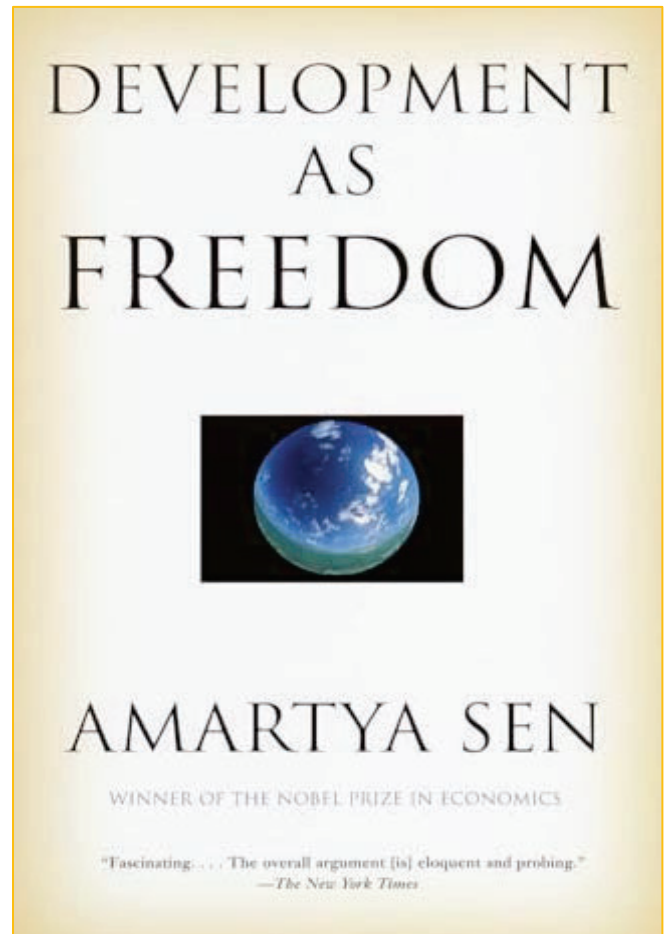
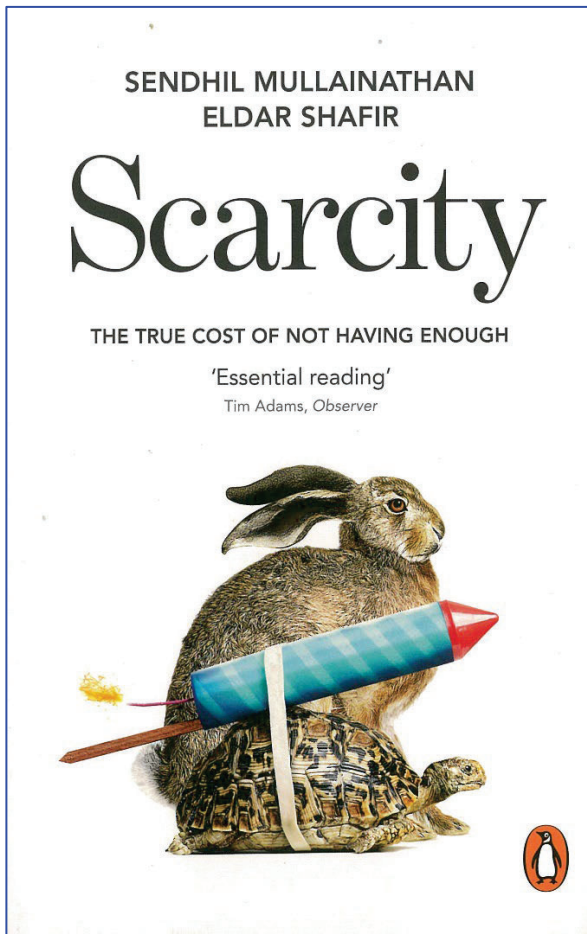


BILLIONS OF USERS (BOU) - POOR SOFTWARE for *POOR ECONOMICS*



Democratization of data may be mere *lippenbekenntnis* unless tools are made accessible to the bottom billions to benefit from the data. Technology, which was supposed to bridge the chasm between “haves” and “have-nots” remain under first world control, with data as a prime commodity for monetization. In this workshop we wonder whether the commercial sector is oblivious of the fact that it is leaving trillions of potential revenue on the table by ignoring what software can do for the next billion users who *can* pay but pays a penny per use (PAPPU). However, democratization of data is not a panacea. There is a set of scenarios for which software is the right tool. It may not be the correct tool for all use cases, questions, and all scenarios.





5 ESSENTIALS OF LIFE

FEWSH

BOU – BILLIONS OF USERS

SIMMS Product Workshop (Software Innovation in Material Management Systems)

DRAFT 09-22-2025

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[0] Preface

Between the volatility of the economics of altruism and the uncertainty of social welfare programs lies the elusive quest for growth in most developing countries. The punctuated equilibrium of nonlinear development in underserved nations is a PQRSTU wave of boom, bust and business. In this workshop we descend from the ivory tower of philanthropy to embrace ethical profitability. Pragmatic ethical profitability is not oxymoronic, but it is that rare metaphorical fulcrum between need and greed. Can we create the social business of science we need as a service but limit net operating profit after taxes (NOPAT) to less than or equal to one percent (ETOP) of revenue?

ETOP NOPAT is the rallying cry for SIMMS (software as a service) to aid economic growth in less affluent nations (Asia, Africa). Billions of users (BOU) of products and services are in the AA nations but the spectrum varies with respect to buying power. The objective of SIMMS is to try to reduce the information gap in “poor economics” which could distribute the total profit from the supply chain of products and services between various actors (in contrast to capitalistic market economies where parties with access to information are most likely to amplify wealth creation).

Convergence of principles and confluence of ideas from transaction cost economics, reduction of information asymmetry, software engineering, business process design, and mobile systems, are expected to seed entrepreneurial innovation for business to customer (B2C) experimentation in development economics (which B2B can also adopt, if relevant) to help economic growth for BOU (billions of users).

The daily (hourly, weekly) interaction of BOU with FEWSH (food, energy, water, sanitation, health) is the rationale underlying ETOP NOPAT social businesses focused on these domains and to monetize each unit of transaction using the PAPPU paradigm (pay-a-penny-per-use) to reduce the barrier to market entry. PAPPU could create new BOU BAZAR (markets of billions) by engaging even those who may earn \$2-\$3 per day.

SIMMS may find creative ways to transform the basic elements of the economic principles of information asymmetry (see “note”¹) and transaction cost (see “note”²). Implementation of SIMMS must be linked to innovative business process engineering and software development to capture operations in FEWSH verticals for activities involving food, energy, water, sanitation, health/healthcare (some more than others).

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BOU

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About the author



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Shoumen Bose Palit Austin Datta (BSc, PhD, MRSB) is a Member of the Royal Society of Biology (UK). He is a Senior Member of the MIT Auto-ID Labs, Research Affiliate at Dept of Mechanical Engineering, Massachusetts Institute of Technology and Senior Scientist, Medical Device Interoperability Lab and Cybersecurity Program, Center for Smart and Automated Medical Systems, Dept of Anesthesiology, Massachusetts General Hospital, Harvard Medical School (<https://mdpnp.mgh.harvard.edu/about>). He is the Co-Founder and the former Executive / Research Director of the MIT Forum for Supply Chain Innovation (2001-2010) at the MIT School of Engineering. Former Member of the MIT Auto ID Center (1999-2003), [MIT Data Center](#) (2004-2006) and [MIT Energy Initiative](#) (2008-2009). His interests include RFID, Internet of Things (IoT), Industrial IoT, medical IoT, digital supply chain management, forecasting, data, analytics, decision systems, nano-bio-sensors, digital twins, healthcare, digital health, vaccines, molecular biology, neuroendocrine carcinomatosis and science as a service for society. He taught/teaches Supply Chain, Operations Strategy and Management at MIT Sloan School of Management, Chalmers University (Sweden), ESSEC (France), KEDGE (France), Cambridge University and Harvard Medical School (Molecular Medicine, Biochemistry and Metabolism for first year MD students). He has offered MBA and executive education courses at MIT and other institutions in US, EU and Asia. He was the founding Senior Vice President for the Industrial Internet Consortium (IIC). He has authored books, papers, articles related to evolution of IoT and the industrial internet, software agents, predictive data analytics, supply chain management, public health (SARS-CoV-2), healthcare platforms, energy, digital transformation, digital twins and AI. He has served/serves as an advisor for start-ups, corporations and governments including NSF, US Dept of Defense, US Dept of Commerce, United Nations (UNDP), World Customs Organization (WCO), President's Science and Technology Advisory Group (PSTAG) for the President of Taiwan (ROC), TEKES (Government of Finland), etc. He earned his BSc (Biochemistry, Physiology, Physics, Chemistry) from the Presidency College, University of Calcutta. He attended University of Pittsburgh and earned his PhD from Rutgers University School of Medicine in collaboration with Department of Molecular Biology at Princeton University. He was briefly associated (DNA tumor virus research) with Paris VI Université Pierre-et-Marie-Curie and Institut du Cancer et d'Immunogénétique, *Villejuif* (ICIG, Hôpital Paul Brousse). He was a Research Fellow in Medicine with Larry Jameson (Thyroid and Neuro-Endocrine Labs, Molecular Oncology) at MGH (Massachusetts General Hospital) and Instructor in Medicine at Harvard Medical School (HMS). He was a Research Associate at the Whitehead Institute at MIT with Richard Young and a founding member of the MIT Human Genome Project (1993) with Eric Lander. He was a Research Scientist in Molecular Parasitology at University of California UCSF School of Medicine, San Francisco, California (joint program with UCSF School of Pharmacy and UC Berkeley School of Public Health). Shoumen has served in the public sector to improve public K-12 education and technology as Special Assistant to the Mayor of the City and County of San Francisco, California; helped to improve California K-12 standards in mathematics and science (<https://www.nature.com/articles/34255>); Science Education Partnership at UCSF School of Medicine; Berkeley Pledge initiative at the University of California, Berkeley and Chair, National Task Force on Education, Economy, Workforce and Technology sponsored by Information Technology Association of America, US Department of Commerce, Dept of Labor and White House Council of Economic Advisers (1998-1999). Until recently he was an advisor to NIH funded CoVID-19 research teams from multiple US universities (for the rapid development of nano-biosensors for diagnostics of SARS-CoV-2). He continues to advise various research projects, students and various other entities, local and global. He is a Member of the Royal Society of Biology (MRSB).

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THIS IS A SELECTED LIST OF PAPERS / ARTICLES ■ MY TINY CONTRIBUTION TO SCIENCE, ENGINEERING, & MANAGEMENT.

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