

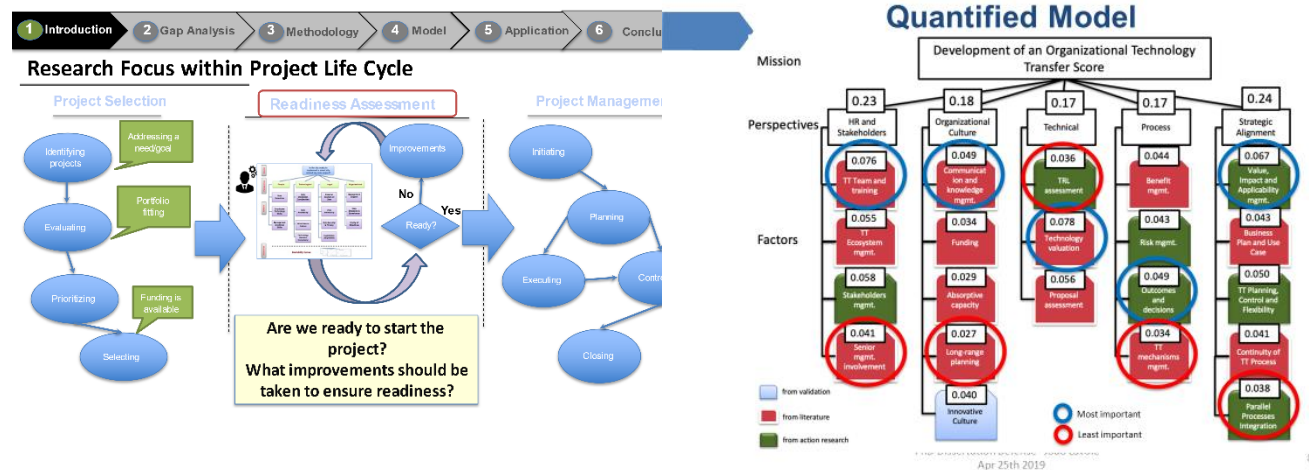
Tech 570 Digital Transformation

Professor: Tugrul U Daim, PhD and Fulbright Scholar

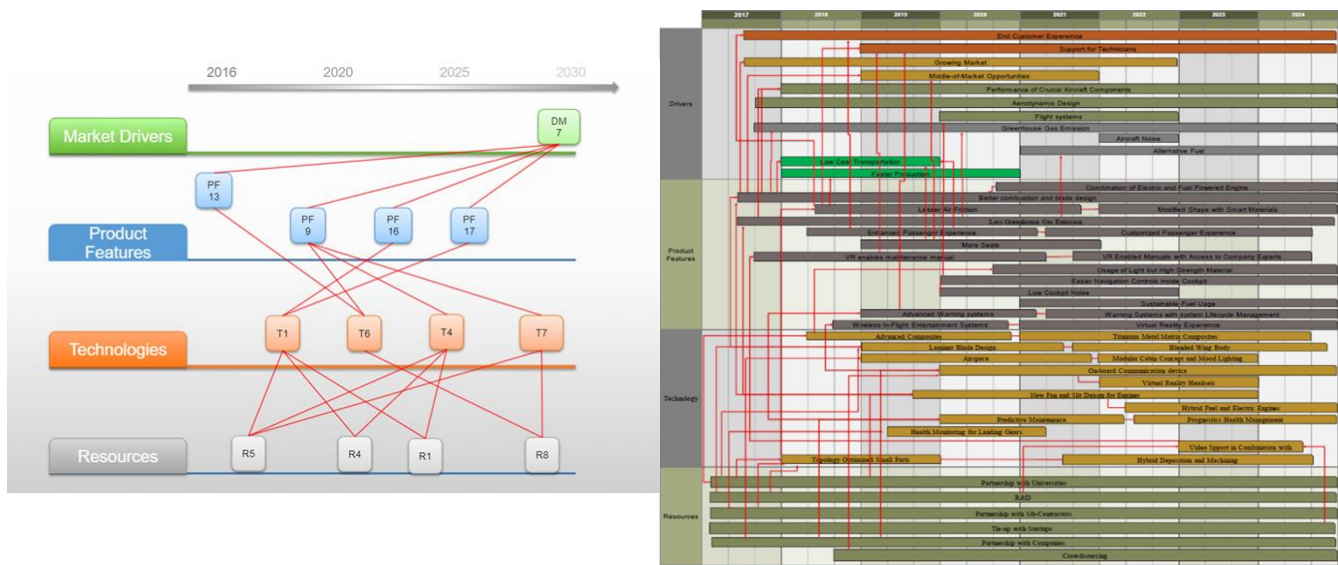


This course introduces practical tools and applications for managing Digital Transformation. The class will be held in two weekends.

The first weekend will focus on evaluating technologies for digital transformation. Students will review cases from sectors transforming digitally including transportation, semiconductors, cloud computing and consumer goods.



The second weekend will introduce roadmapping the digital journey through cases and a team exercise. Teams will review cases ranging from consumer goods to autonomous vehicles. There will also be a hands-on exercise to roadmap the digital transformation in the transportation business.



EXPECTATIONS AND GRADING

Please review the samples posted on the google drive for expectations. The following will be how the students will be graded. The grades will be 100% team based.

Case Study Presentations
Exercise

50%
50%

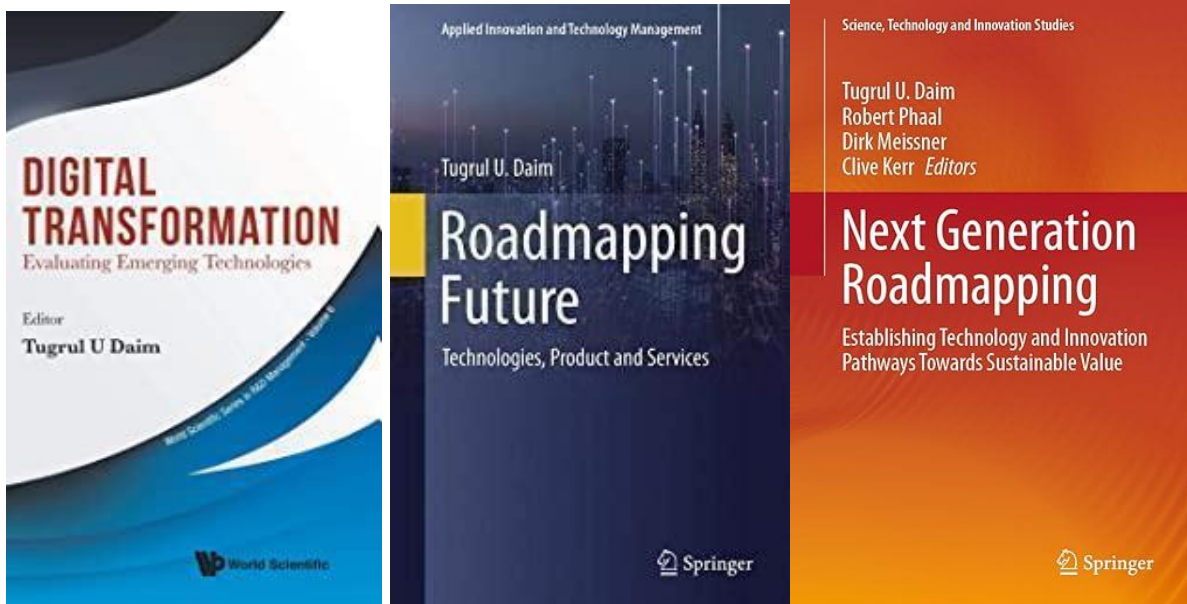
CLASS MATERIAL

Books¹

Daim T, Digital Transformation, World Scientific 2020

Daim T, Roadmapping Future, Springer Nature, 2021

Daim T et al Next Generation Roadmapping: Establishing Technology and Innovation Pathways Towards Sustainable Value, Springer Nature, 2023



¹ Available on the google drive

SCHEDULE

Date	
Jan 17	<p>Class Introduction</p> <p>Lecture Technology Strategies and Policies - <i>Watch after the first session</i></p> <p><u>Dr. Tugrul Daim - Digital Transformation: Evaluating Emerging Technologies</u></p>
Jan 18	<p>Lecture (Watch them before the class)</p> <p><u>Dr. Husam Barham - Doctoral Research: Big Data Projects - Case Study of Smart City in Oregon, USA</u></p> <p>Case Study Presentations - Cases are from “<i>Digital Transformation</i>”</p> <p>TEAM 1 - CHP 1</p> <p>TEAM 2 - CHP 2</p> <p>TEAM 3 - CHP 13</p> <p>TEAM 4 - CHP 4</p> <p>TEAM 5 - CHP 5</p> <p>TEAM 6 - CHP 6</p>
Jan 19	<p>Lecture (Watch them before the class)</p> <p><u>Dr. Joao Lavoie - A Scoring Model to Assess Organization's Technology Transfer Capabilities</u></p> <p>Case Study Presentations - Cases are from “<i>Digital Transformation</i>”</p> <p>TEAM 7 - CHP 7</p> <p>TEAM 8 - CHP 8</p> <p>TEAM 9 - CHP 9</p> <p>TEAM 10 - CHP 10</p> <p>TEAM 11 - CHP 11</p> <p>TEAM 12 - CHP 12</p> <p>HDM Link</p>

	<u>HDM (Hierarchical Decision Model)</u>
Jan 24	Introduction to Technology Roadmapping Lecture (Watch them before the class) Technology Roadmapping Lecture 1 (Watch the lecture on google drive before the class - only first 40 minutes) Case Study Presentations Cases are from “<i>Roadmapping Future</i>” Chapters 1 - 6 TEAM 1 - CHP 1 TEAM 2 - CHP 2 TEAM 3 - CHP 3 TEAM 4 - CHP 4 TEAM 5 - CHP 5 TEAM 6 - CHP 6
Jan 25	Lecture 2 (Watch the lecture on google drive before the class) Case Study Presentations Cases are from “<i>Next Generation Roadmapping</i>” Chapters 1-6 TEAM 7 - CHP 1 TEAM 8 - CHP 2 TEAM 9 - CHP 3 TEAM 10 - CHP 4 TEAM 11 - CHP 5 TEAM 12 - CHP 6
Jan 26	Lecture 3 (Watch the lecture on google drive before the class) Technology Roadmapping Exercise Exercise Presentations



Professor Tugrul U Daim is the Research Director of Mark O. Hatfield Cybersecurity & Cyber Defense Policy Center at Portland State University. He leads a research group on Technology Evaluations and Research Applications. His group has had 37 PhD graduates. His research group has been supported by National Science Foundation, Department of Defense/National Security Agency, National Cooperative Highway Research Program, Energy Trust of Oregon, US Dept of Energy, Bonneville Power Administration, Northwest Energy Efficiency Alliance, EPRI, Biotronik, Ford Motor Corporation, Intel Corporation, US Aid, Fulbright, Saudi Arabia Cultural Mission, Libyan Ministry of Education, CAPES Brazil, Maseeh Foundation, Oregon BEST, TUBITAK Turkey, Chinese Scholarship Council, FAPESP Brazil, Oregon Health and Science University, and University of Bremen.

Professor Daim has published over 300 refereed journal papers, more than 20 special issues and more than 30 books. He made more than 200 conference presentations. Professor Daim gave several keynote lectures at conferences, companies, universities and research centers around the world including Iamot, Euromot, Samsung, Helmut Schmidt University, Kuhne Logistics University, Seoul National University, Bogazici University, Koc University, University of Gaziantep, Izmir Institute of Technology, University of Pretoria, Tampere University of Technology, STEPI, EPIC at UNCC, Cambridge University, National Taiwan University, Higher School of Economics in Moscow, Friedrich Alexander University, Chinese Academy of Engineering and Office of Naval Research. He has been frequently invited to be an external examiner for promotions of many colleagues and for dissertations of doctoral students in universities around the world. Professor Daim is the fifth Editor-in-Chief of IEEE Transactions on Engineering Management. Under his leadership, submissions to the journal more than doubled, the impact factor quadrupled, and the journal was ranked among the top journals in leading citation indices. Prior to that Professor Daim had led the International Journal of Innovation and Technology Management for a decade and made it a well-known journal in the field. In addition, he had served as an Associate Editor for other journals including Technological Forecasting and Social Change, Technology in Society, Engineering Management Journal and Foresight. He has been on the editorial boards of many leading journals in our field. He also has been a part of the leadership team for conferences including PICMET and IEEE TEMSCON. Prior to joining PSU, Professor Daim worked at Intel Corporation for over a decade in varying management roles including the management of product and technology development. During his tenure at PSU, he had worked very closely with Bonneville Power Administration to develop a research and technology management framework run by technology roadmaps. He is a member of the R&D Advisory Board for TUPRAS, the largest industrial firm in Turkey. He also consulted to many other international, national and regional organizations including Elsevier, ETRI, Koc Holding, Arcelik, Tofas, Kirlangic, Siemens, Mark and Spencer, and Castrol. Professor Daim has been teaching in summers at the Northern Institute of Technology at Technical University of Hamburg, Harburg for over a decade. He was given the Research Publication Award by the International Association of Management of Technology (IAMOT) and Fellow Award by the Portland International Center for Management of Engineering and Technology (PICMET) both in 2014. He was awarded Leading Research Fellowship at National Research University Higher School of Economics in Moscow in 2018 and Honorary Chair Professor title by Chao Yang University of Technology in 2019. At PSU he was given David E Wedge Award for Excellence in Teaching in 2017, Outstanding Engineering Researcher Award given by the Columbia-Willamette Chapter of Sigma Xi Research Honorary in 2011 and Distinguished Alumni Award by PSU College of Eng'g and Comp Sci in 2003. Dr. Daim was the President of Omega Rho, International Honor Society in Operations Research and Management Science (of INFORMS) between the years of 2014 and 2016. He founded the PSU Chapter of Omega Rho as the founding President and has been the Faculty Adviser for 20 years. Recently he was awarded a Fulbright grant to conduct research in Turkey. Several recent rankings put his group as a leading team in the field². He was ranked in the top 2% of world scientists. (<https://data.mendeley.com/datasets/btchxktzyw/2>). A bibliometric review of 50 years of research published in Technological Forecasting and Social Change listed one of his papers as the fifth most influential paper and him as the third most influential author. A second paper identified his work at PSU as one of the roadmapping schools of thought next to Cambridge and others.

² <https://www.sciencedirect.com/science/article/pii/S0040162520310362>, <https://www.sciencedirect.com/science/article/pii/S0040162519304901>, <https://www.sciencedirect.com/science/article/pii/S0040162519305220>, <https://www.sciencedirect.com/science/article/abs/pii/S0016328718303100>