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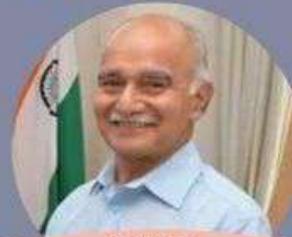
invites you for a public lecture on

TOWARDS A LEARNING SYSTEM FOR THE SIXTH WAVE OF INNOVATION (2020-2045) - CREATING SPIRAL LEARNERS

AUGUST 10, 2020 | 11AM

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Prof. Rama Shanker Dubey

Hon'ble Vice Chancellor,
Central University of Gujarat



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Director, Crafitti, Bangalore
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Central University of Gujarat

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Chair: Prof. Rama Shanker Dubey, Hon'ble Vice Chancellor, CUG

Speaker: Mr. Navneet Bhushan, Director, Crafitti, Bangalore and former DRDO Scientist

Title of Lecture: Towards a Learning System for the Sixth Wave of Innovation (2020-2045) – Creating Spiral Learners

Date and Time: August 10, 2020 at 11 AM

Speaker Bio



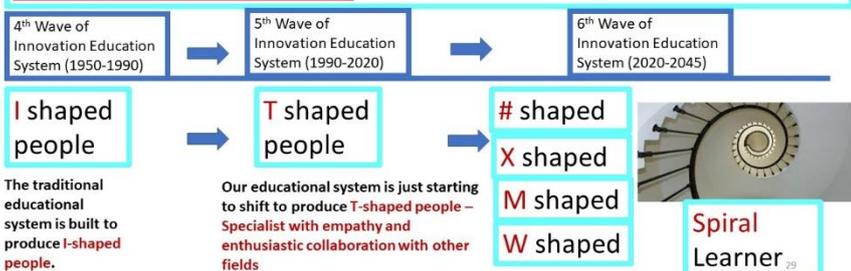
Navneet Bhushan founded CRAFTITI - an Innovation Research and Consulting firm at Bangalore, India. His earlier positions include Scientist at DRDO, Technology Specialist, Vice-President (Innovation) in a career spanning more than 30 years. He is the principal author of the book *Strategic Decision Making* (2004), Springer- UK which has been featured at *Harvard Business School Working Knowledge for Business Leaders*. He is currently writing *Choice Crafting – Innovation and Decisions for a Complex World*. Mr. Navneet Bhushan is Member, Board of Studies of School of National Security Studies, CUG. He is an Associate Editor of the *International Journal of Analytic Hierarchy Process* and peer reviewer of DRDO's *Defence Science Journal*. He writes on Strategy, Defence and Security frequently at *Indian Defence Review*. From July 2020, Navneet has started a fortnightly column on National Security Technology.

Abstract of Lecture

In the currently undergoing creative destruction when a new economic system is emerging through application of new transformational technologies while the existing economic system is being rapidly changed through irrelevance or mutation of its key tenets and aspects, rapidly learning the new ways is the only way ahead. This creative destruction is giving way to what we call the sixth wave of innovation [1].

Learning Outcome

Creating **Dynamic, Ultra learners** who are **passionate to learn** by **expanding their range** of skills, thinking and domains, to transform into a **Spiral Learner (Evolutionary Learner – who is designed to evolve through continuous learning)**



The current ongoing fifth wave of innovation (Schumpeter/ Kondrateiff Waves/Cycles – as these are called historically) started in 1990. It was driven by digital networks, software and new media, and is rapidly giving birth to the new wave – **The Sixth Wave of Innovation.**

This new wave of innovation, we propose will be driven by (a) Networked, Autonomous, Nano and Hypersonic – Things, (b) Algorithmic Intelligence and Quantum Computing and (c) Synthesized – Biology, Energy and Reality. If Algorithms were the building blocks of 5th Wave of Innovation - we propose Algorithmic Intelligence (Year 2012- 2035) will be the building block of 6WoI. To this Quantum Computing (Year 2030 - 2045) will start finding transformation level applications to evolve world economy towards a self-organizing, adaptive infrastructure and an unprecedented multi-dimensional inter-human and Human-bot amalgamation. To operate in the New Wave and to ride the new wave of Innovation - we need new thinking and calibrated actions at multiple levels and with multiple perspectives. Above all we need to define, architect, design and develop a learning system for the sixth wave of innovation.

The Digital Twin technologies – Distinguishing features

- (1) **Connectivity** (IoT) – Physical-Digital; Organizations, Products and Customers
- (2) **Homogenization** – Data increasingly in digital format; allows decoupling from of rich-information from the physical artifacts
- (3) **Reprogrammable and Smart** – Run-time emergence of functionalities and smart adaptability of the systems
- (4) **Digital Traces**
- (5) **System Improvement** by Modular evolution

Digital Twin Learning System

Learners using Digital Twin of the Physical Market place can gain virtual-experience by observing and participating in a safe-mode to the actual physical interactions



In our earlier research, we presented how to transform to a digital learning system [2], how the inventive energy from patent trends is indicating the emergence of a new digital learning system [3] and proposed a passion metric to evaluate which driver for a learner will be used to adapt the learning system for his/her passion [4]. In this paper we propose key elements of the new learning system

for the sixth wave of innovation with learning outcome of transforming the “I” shaped or “T” shaped learners to what we call Spiral Learners.

The learning system proposed will be a phygital system – seamlessly combining the physical and digital learning systems through what are called the Digital Twin technologies. The paper describes the key elements of and theoretical basis for creating the learning system for sixth wave of innovation using digital twin technologies for creating the spiral learners as distinct from I shaped people or T shaped people.

Keywords: Learning, Sixth Wave of Innovation, Learning System, T-Shaped People, Spiral Learners, Digital Learning Transformation

References:

- [1] <http://www.craffiti.com/sixth-woi.html>
- [2] Bhushan, N., Digital Learning Transformation – A Strategic Framework using the Analytic Hierarchy Process, Future of Learning (FOL) Conference, IIM Bangalore, 15-17 January 2018.
- [3] Bhushan, N., and Mishra, A. K., Inventive Energy of Digital Learning Systems – A View from Patent Trends, Future of Learning (FOL) Conference, IIM Bangalore, January 2019.
- [4] Bhushan N., Sundarrajan M., Passion Metric for Learning, Future of Learning (FOL) Conference, IIM Bangalore, January 2019.