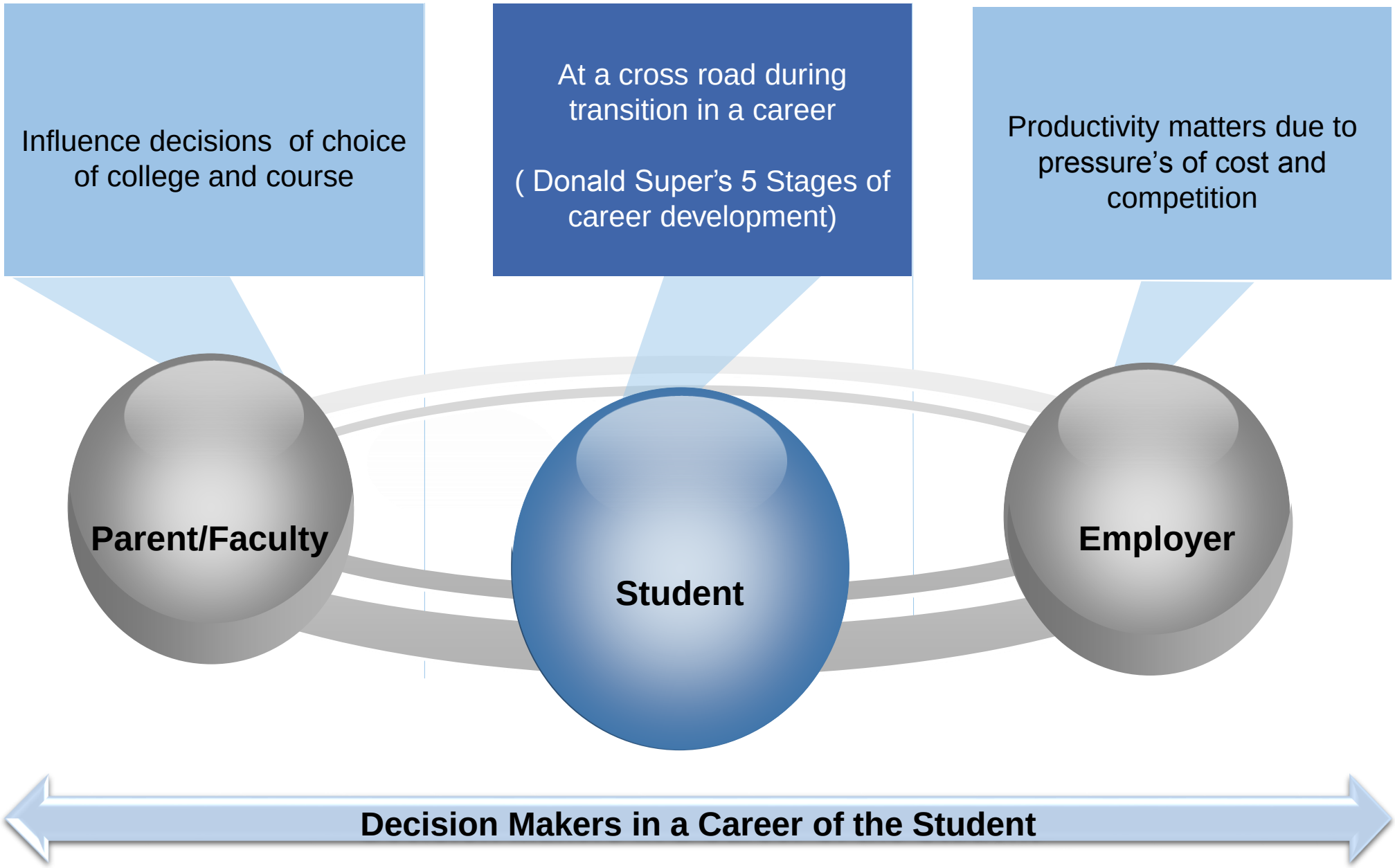
Industry Expectations From Academia

Presented at WOSA 2016 Conference by Mr. Yogi Sriram (Sr. VP - L&T LTD) ,20th March'16

Presentation Flow

1. Introduction
2. Impact of Macro-Economic Parameters
3. Challenges for Academia in current scenario
4. Challenges for Industry in current scenario
5. Industry Expectations from Academia

Introduction



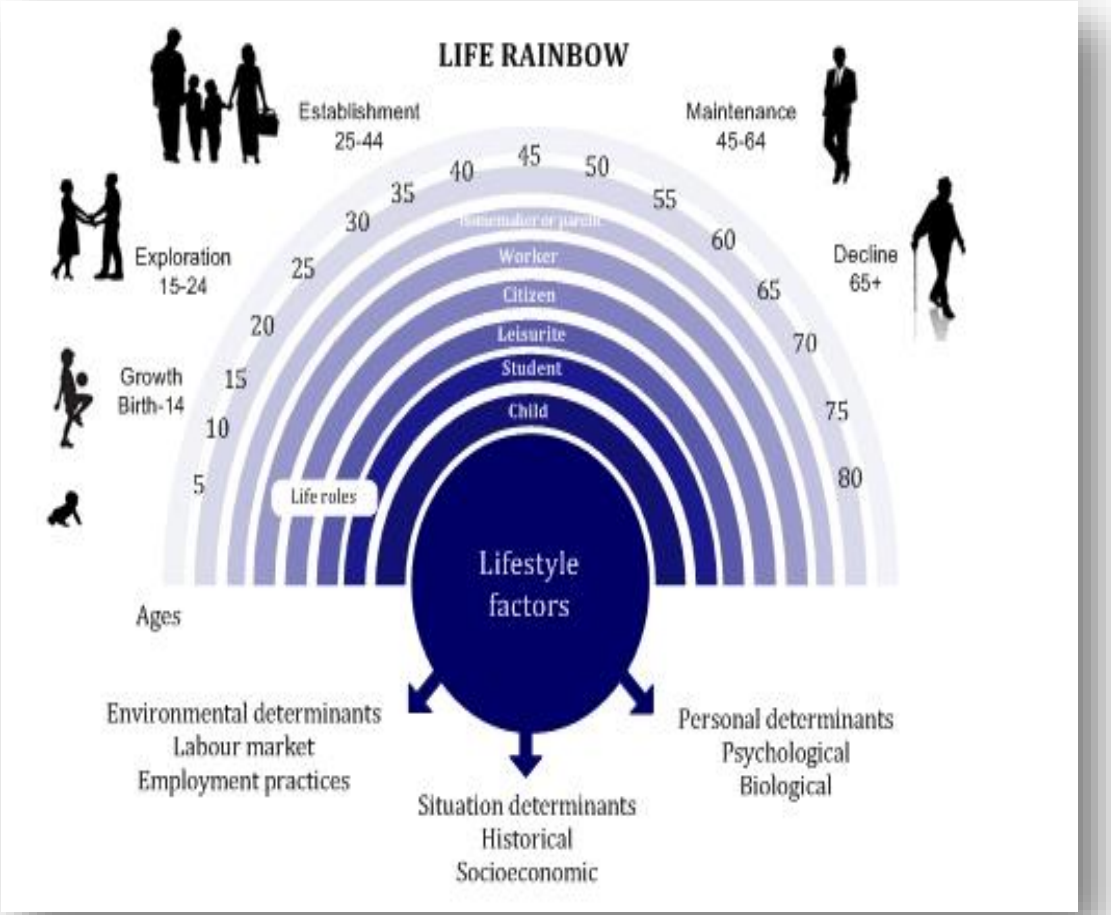
Introduction: Donald Super's 5 Stages of Career Development

Stage 1

Growth- Learning about the world of work as you increase your awareness of your personality, interests, abilities, experiences, and values

Stage 2

Exploration- Crystallizing, specifying, and implementing a career choice



Stage 3

Establishment- Gaining work experiences and evaluating your experiences in occupations associated with your career choice

Stage 5

Decline- Exploring new ways to spend your time away from your current work environment; might include a career change or retirement

Stage 4

Maintenance-Developing stability within a chosen career field as you seek ways to improve working conditions and increase skills.

Introduction : Details of Survey

* Details of survey will be provided in the final presentation

Effect Of Macroeconomic Parameters

Global Scenario

Gradual economic revival

China's shift from Manufacturing to Service's

Domestic Scenario

India's Projected growth 7.9% till 2018

India to be a beacon light for economic growth and opportunities

India to be a leader in Manufacturing (25% of GDP from Mfg.)

Make in India

Digital India

Access to digital services, knowledge and information

100 million jobs in manufacturing till 2022

5cr jobs in IT

Skilling, Up-skilling and re-skilling to leverage demographic advantage

Challenges for Academia in Current Scenario

Digital Technology

- Democratization of knowledge
- Influence on content design and delivery
- Directed rote to collaborative learning by doing

Industry expectation

- Attitude: Attributes like Passion, curiosity, self motivation
- Knowledge: which is relevant with the changing times
- Skills: Entrepreneurial, Innovation and problem solving

Industry ready curriculum

- Practices in Manufacturing, Project and Construction Management

Challenges for Industry in current scenario

Skill Gap

- Over 10 lac of Engineer's graduate every year
- 6.56 % are employable in Design Engineer roles
- 19.08 % in Sales Engineer role
- Lack of domain knowledge and soft skills

(Source : National Employability Report 2015 by Aspiring Minds)

Digitization Effect

- Disruptions due to **SMAC**: Social, Mobile, Analytics & Cloud
- Constant need of skilling, upskilling and reskilling

Business Imperatives

- Cost, Quality, Schedule, Operational efficiency

Industry Expectations from Academia: Curriculum

"How things work" and " How people work"

=

STEM + Art
(Breadth + Depth)

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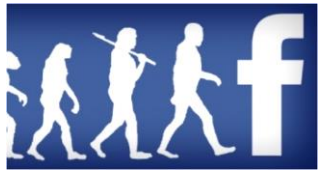

Eg. Zuckerberg (Computer Science + Psychology)

Knowledge of HR processes for Faculties and students

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Leadership assessment competency mapping

→

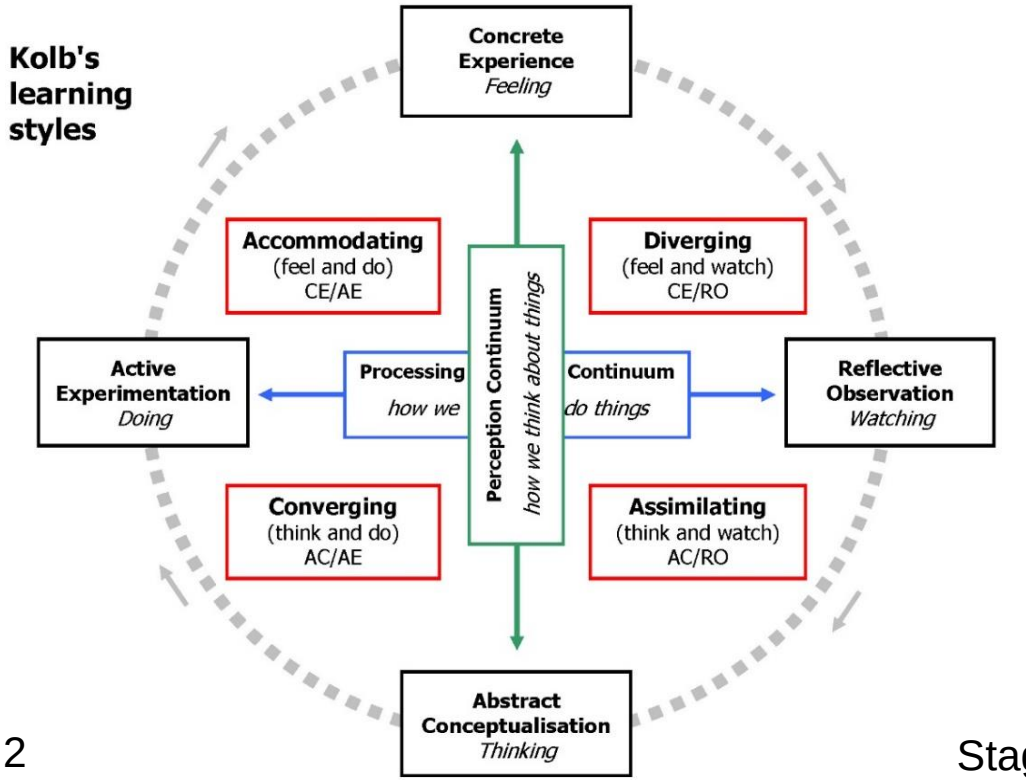
Performance appraisal

"Curriculum which Combines Technology Know How with Human insight"

Industry Expectations from Academia: Pedagogy

Kolb's Learning Style: Know the students learning style

Diverging (CE/RO)	Assimilating (AC/RO)	Converging (AC/AE)	Accommodating (CE/AE)



Stage 1

Concrete Experience - (CE)
Experience an activity

Stage 2

Reflective Observation - (RO)
Reflect back on that experience

Stage 3

Abstract Conceptualization - (AC)
Conceptualize a theory or model of what is observed

Stage 4

Active Experimentation - (AE)
Plan how to test a model for a forthcoming experience

Industry Expectations from Academia: Pedagogy

"We need to bring Universities to device and devices to Universities"

- Use of Videos, Mobiles, IPad to connect with the Industry
- Free 24X7 online access to learning content
- Judicious mix of Industry Professionals and Academicians as Faculties
- Theory to be followed by demonstration and experimentation
- Latest and adequate equipment's in the lab
- Projects with industry: Making preliminary design/cost estimation for a task

Industry Expectations from Academia: Practical Action points

L&T- IIT Jodhpur MOU

Blended B.Tech Program

Develop an industry immersed program

Internships: 8 weeks for 6 Students and 1 Faculty for 3 consecutive summers

- L&T Adjunct Faculties
- Course Development
- Introduction to shop floor activities/projects
- Joint research on projects of Mutual interest

L&T EAIC-VJTI MOU

Centre for excellence in Complex and Nonlinear Dynamical Systems

Create an Innovation Centre and joint research facilities

Internships & **L&T Project Guide**: MTECH Students

- L&T has setup a Lab
- Support for design concept and equipment finalization
- PHD students working on real R&D projects of EAIC

Outcome

- Exposure to Industry practices
- Understanding of shop floor
- Participation in real tasks
- Industry specific research

Industry Expectations from Academia: Practical Action points

"Quality and not the Quantity"

Visiting Professors

- Practitioners as Adjunct Faculties
- Sabbatical for practitioners to Teach

Mutual Internships

- Mandatory 2 months Industry Internship for Faculties
- 2 months for Students

Field Visits

- Student and Faculty visits to shop floor & Project Sites
- Part of job to be performed
- Industry stint for faculties

Manager Interaction

- Managers to be a part of Project identification
- Students to interact with Managers for project matters
- Faculties to discuss industry issues

R&D

- Industry deals with applied research
- Academia more of basic research
- Academia to move from publications to patents
- This research should be mutually done

Industry Ready Curriculum

- Requirement interviews for "curriculum need analysis"
- Knowledge of complete cycle of Project Mgmt.
- Knowledge of Contract Mgmt.
- Knowledge of Planning and scheduling
- Use of Case studies- E.g.T3 Airport Delhi
- Emphasis on safety and quality
- Include costing - E.g. L&T Cost Engineers

Industry Expectations from Academia: Practical Action points

Building Blocks of High Quality Sustainable Education

Academia

- Outcome based education approach
- Develop knowledge, skilled Manpower
- Solutions to real research problems

- Acquire skilled Manpower,
- Share Industry practices
- Mutual Research with Academia

NAAC/NBA

Industry

Ensure quality and relevance of Education

Government

Formulation of policy framework and mentorship to Industry and academia

“ Major Competitor for Universities in 10 years will be Google…if Universities were still alive”

THANK YOU