Indian Engineering Education

—Surviving Challenging Times

Prof. Ashok Shettar, Vice Chancellor

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Engineering Education..... Scenario

Approximately 3,300 Colleges with Annual Intake of Over 1.5 Million

- Intake reduced by 80,000 seats
- Admissions reduced by 8.5%

50% Seats are Vacant!
Engineering Education..... Emerging Scenario

Projected
• 80,000/ year, Intake reduction
• 5% reduction admissions taken

Actual available data

Intake  Admissions

<table>
<thead>
<tr>
<th>Year</th>
<th>Intake</th>
<th>Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>16.5</td>
<td>8.6</td>
</tr>
<tr>
<td>2016-17</td>
<td>15.7</td>
<td>7.9</td>
</tr>
<tr>
<td>2017-18</td>
<td>14.9</td>
<td>7.5</td>
</tr>
<tr>
<td>2018-19</td>
<td>14.1</td>
<td>7.1</td>
</tr>
<tr>
<td>2019-20</td>
<td>13.3</td>
<td>6.7</td>
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Engineering Education..... Emerging Scenario

Three types of Institutions

- Top 20%
- Middle 50-80%
- Lower 50%

Merit they attract

Seat Filling

< 50 %
50-80 %
100 %

Prof. Ashok Shettar, Vice Chancellor
TOP 20 % Institutions

- Brand Value
- Financial Stability
- Autonomy
- Scale of Operation
"It is more difficult to stay on top than to reach there" - Mia Hamm

Entry of Corporate / Private Universities with Large Intake

Constant Pressure from Next Level Institutions

Complacency
Middle 50% TO 80% Institutions

- Not-yet-established brand value
- Financial -Struggling
- Autonomous / Affiliated

Two Types

- Aspirational
- Aggressive Die-hard attitude

- Laid down
- Boiling Frog Syndrome (waiting for the world to Change)
Way Ahead...

No Quick Fix!

• Create the space for Innovation
• Leverage the space to Grow
Way Ahead.. Create Space…

- Affiliated Colleges: <95%
- Autonomous Colleges: >95%
- INI s Universities (non-affiliating): <5%
Create Space...

Strategic Move at Institutional Level

• Top Management
• Executive Leadership team
• Academic Leaders
Leverage the Space…

• Executive Leadership &
• Academic Leaders
Leverage the Space…

Weakest Link

**Bold Experimentation and Innovations in Design and Delivery of curriculum/Courses**
Leverage the Space...

- Practice based Curriculum
- Introduction of new Courses
- Study, Research, Learn
- Dialogue
- Pedagogical Innovations
- Practice based Curriculum

- Relook at the Existing Courses
- Contextual
- Connected
- Continuous

- Improve Learning Outcomes

- Best Practices
- Social Innovation
- Engineering exploration
- Product design and realization....
- Research Experience for Undergraduates
- Global immersion in Innovation & Entrepreneurship
- Harvard Calculus reform movement...
- ........
Leverage the Space… Innovation is the Key

Drive Innovation Eco-System

UNIVERSITIES AND COLLEGES

Three types of Orientations

ENABLING
Actively promotes, supports & rewards, takes risks

PERMISSIVE
Allows but don’t support

PREVENTIVE
Constrains Innovation
Improvement to Radical Transformation

**IMPROVE the System we have**

- Crisis
- Stable
- Good
- Great

**INNOVATE the System we NEED**

- Learn (Existing)
- Experiment
- Prototype (New)
- Transform Department
- Transform University / College

**IMPROVE vs INNOVATE TO TRANSFORM**

- (Incremental = Diminishing Returns)
- (Cross the Chasm = Difficult, but Promising)
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We Can....
Create the Space
Leverage the Space

Thank You