

innovate

achieve

lead

BITS Pilani

Pilani | Goa | Hyderabad | Dubai



ICT@BITS-Pilani

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Widespread uses of ICT

- Resource sharing (HW, SW, data, information)
 - ❖ The latest being “**cluster computing**” or “**cloud**”
- One-to-one communication
 - ❖ **email, ...**
- One-to-many collaboration (, ...)
 - ❖ **Google-docs for** multi-authored papers or proposals
- Web
 - ❖ **Enrolling students, hiring faculty**
 - ❖ **Moodle to manage faculty-student interactions**
 - ❖ **Access to library resources**

ICT applications in BITS

- **BITSAT**: the online test for admissions to BITS
 - ❖ Since 2005
- **ERP**: enterprise-wise planning and admin. tool
 - ❖ Application to “dashboard” to assess university performance
- **Tele-presence network** of conference rooms, classrooms
- Technology-enabled **e-attendance** system, with analytics
- **BITSx**: MOOCs-based course offerings for “OUR” students

Online test for admissions (1)

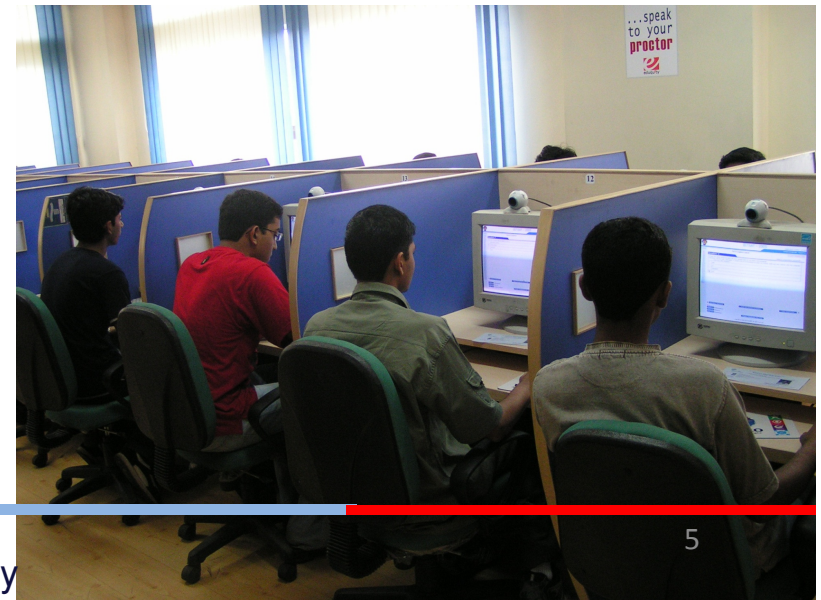
- BITSAT: an online test for admission to UG programmes
 - ❖ Since 2005, a first for India
 - ❖ 186,000 took the test in 49 centres, and growing
 - ❖ Over 50 different sessions spread over 3 weeks
 - ❖ Proctored, with biometrics
 - ❖ ALL processing is via Web



Online test for admissions (2)

➤ What is the big deal?

- ❖ No two students take the same test
- ❖ Can be held “anytime, anywhere”
- ❖ Student can re-appear if she misses the test
- ❖ Benefits:
 - ✓ Flexibility (any day, any time)
 - ✓ Makes feasible, what is otherwise not feasible (around the globe)
 - ✓ Efficient (and low cost)
 - ✓ Friendly, environment-wise



ERP system @BITS-Pilani

- ERP system to cover entire admin + academic functions
 - ❖ HR, F&A, student life-cycle, grants management, etc.
 - ❖ Will ensure accurate, complete, timely info
- A data analytics office (under construction):
 - ❖ Populate university “dashboard” to assess:
 - ✓ Quality of teaching and research
 - ✓ University performance
 - ❖ Collate and prepare information for accreditation & ranking
 - ❖ Etc.



ERP → Analytics → University performance

Area	Metrics
Growth Plan	Laboratory Capex: Actual vs. Planned
	UG Admission: Actual vs. Planned
	PG admission: Actual / Planned
	%age FD Students Graduated
	etc.
Academic programmes	Feedback from Students on Courses, Attendance
	%age of Student with Defined Career Path upon graduation
	etc.
Academic Research & Sponsored Research	Value of Sponsored Research Projects, Approved
	Value of Sponsored Research Projects, Approved/Faculty
	Value of Grants for Lab Development, Approved
	Number of PhD Degrees Awarded
	No. of Publications per Faculty in Tier 1 journals
	etc.
PEOPLE	No. of Faculty on Payroll: Actual / Planned
	Faculty Attrition Rate
	etc.



ERP → Analytics → Quality assessment

Quality assessment and assurance	Campus Level	Deptt level	Faculty level
Input student quality			
No. of applicants for UG/PG programmes	Yes	Yes	
No. of applicants for PhD programmes	Yes	Yes	
etc.			
Teaching			
Student attendance in classes	Yes	Yes	Yes
Student feedback on UG courses	Yes	Yes	Yes
Campus placements	Yes	Yes	
etc.			
Research			
Publications in Scopus journals & Tier 1 journals	Yes	Yes	Yes
No. of Citations	Yes	Yes	Yes
etc.			
Sponsored R&D			
R&D projects sponsored by GOVT agencies, approved	Yes	Yes	Yes
Industry consulting	Yes	Yes	Yes
etc.			

Collaboration using high-definition VC (1)

- Cisco's TelePresence-based network of “conference rooms” across campuses



Collaboration using high-definition VC (2)

➤ What do we use it for?

- ❖ Meeting of leadership, all HoDs, new faculty across campuses
- ❖ Research collaboration
- ❖ PhD viva-voce
- ❖ Faculty hiring
- ❖ Etc.



Collaboration using high-definition VC (3)

- TelePresence-based network of 200-seater classrooms across campuses



Collaboration using high-definition VC (4)

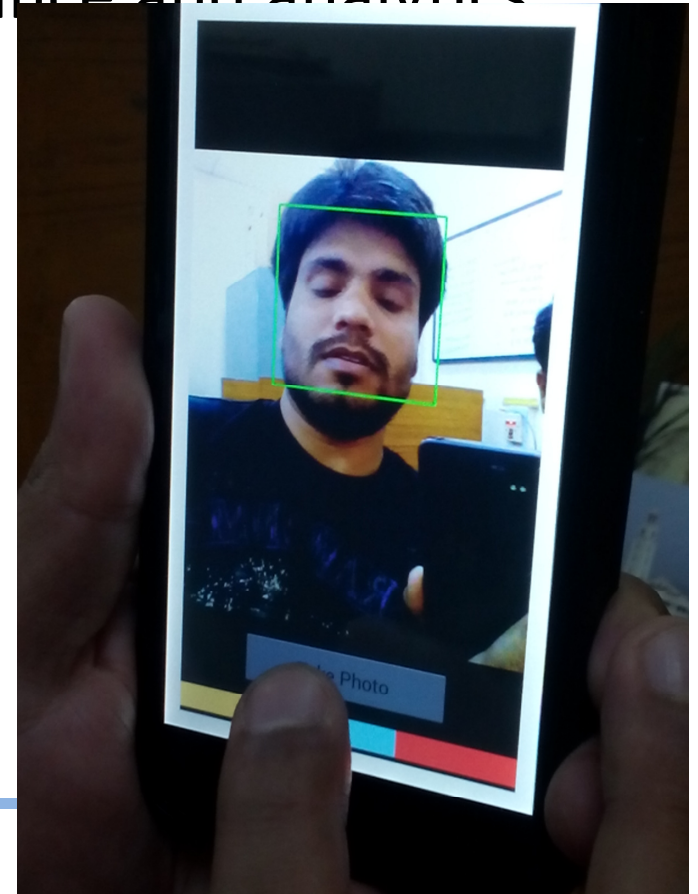
➤ What do we use it for?

- ❖ Lectures delivered to 3 classes, with live interactions
- ❖ Useful in PG and electives → conserve faculty time



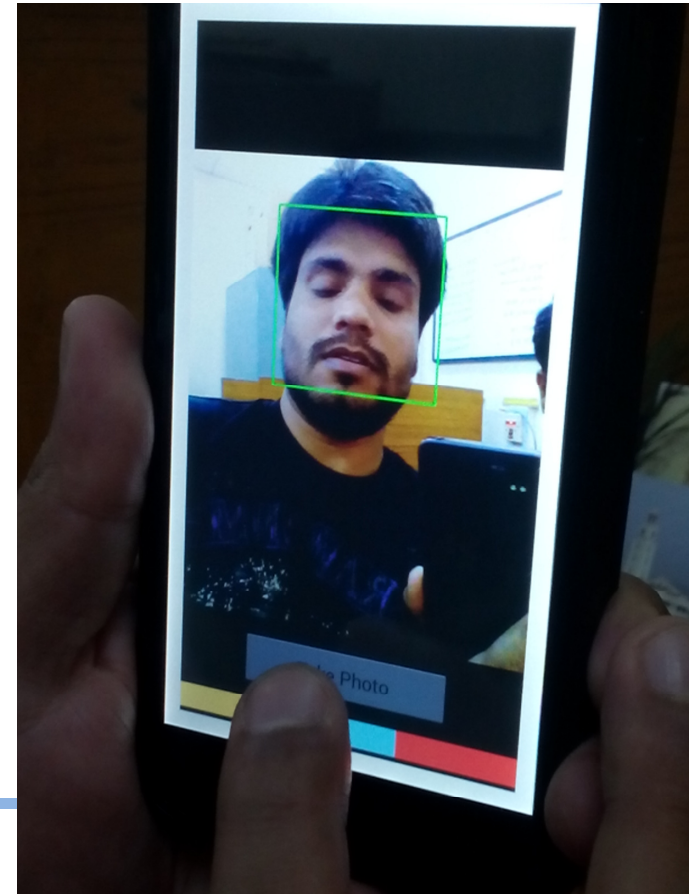
Technology-enabled attendance system (1)

- Taking attendance of student is a challenge
- Analytics on recorded attendance is a bigger challenge
- BITS' solution for automated attendance and analytics



Technology-enabled attendance system (2)

- BITS' solution for automated attendance and analytics
 - Pilot in 5 courses (large and small) is good
 - Next semester we will use in 500++ courses
- Analytics on attendance underway



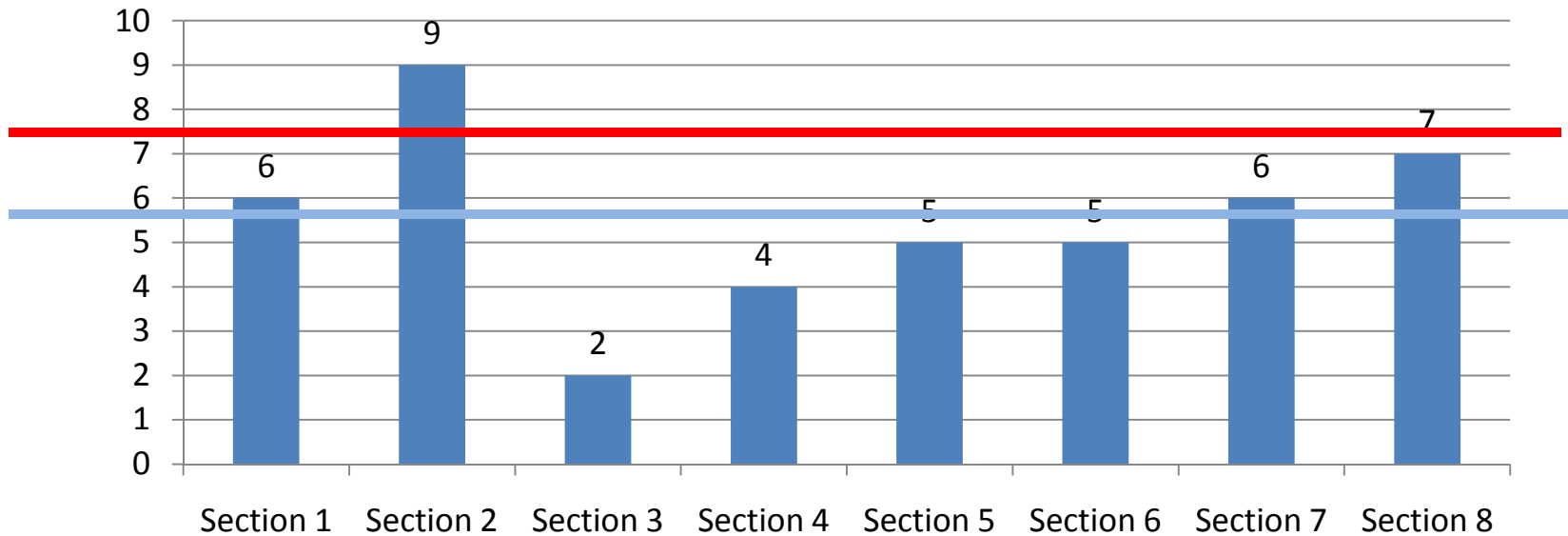


MOOCs or SPOCs @ BITS-Pilani (1)

- BITS' approach to using MOOCs: Use SPOCs (small, private) for “fee- paying, closed group” of students enrolled for a degree/diploma
- For BITS: SPOCs will IMPROVE quality and scale of BITS' on-campus & off-campus education
- For India: SPOCs will improve quality of education in universities, polytechnics

MOOCs @ BITS-Pilani (2)

Quality of teaching. Note avg. quality is 5.5, target is > 7.5



- Multi-section classes will benefit most from MOOCs
 - ❖ Will “blend” delivery of digital content with increased emphasis on problem-solving in small classes and laboratory work

Finally, ICT in Higher Ed

- ICT will continue to drive new applications in Higher Ed
 - ❖ Will continue to see new applications
 - ❖ Will see ever-improving technology
 - ❖ Because ICT enables:

Make feasible what is infeasible

Flexibility

Transparency

Fairness

Timeliness

Efficiency and economy

Environmentally friendly

Error-free operations



Thanks

