



# Veer Surendra Sai University of Technology, Burla

## IQAC Cell

### Best Practices of the University

#### **Best Practice – I**

1. **Title of the Practice:** Encouraging multidisciplinary research
2. **Objectives of the Practice:**
  - To inculcate multidisciplinary research among teachers, scholars and students
  - To create an ambiance and interpersonal research relationship among faculty members for knowledge acquisition and benefit sharing
3. **The Context:** The trend in research now has become multidimensional viewing research problems in different angles. A single research issue will have answers from different fields of research and so involvement of two or more researchers / laboratories has become common across the world. For instance, global issues IOT, Big Data, Cloud computing and its applicability on research are need to be addressed by scientists working on different fields. Hence, to attain global competency in research, promotion of multidimensional research is essential.
4. **The Practice:** Multidisciplinary research is being carried out in the University through various projects
5. **Evidence of Success:** Summer/Winter Schools / Workshops/Conferences / Training programmes attended by students. Research papers are being published
6. **Problems Encountered and Resources Required** Further, grant is required in furtherance of the activities
7. **Note:** To sensitize the necessity and importance of multidisciplinary research the University may have to design strategic plan.

#### **Best Practice-II**

1. **Title of the Practice:** Upgradation of Internet connectivity with zero downtime
2. **Objectives of the Practice:**
  - To upgrade the network architecture to provide the most scalable and resilient solution.
  - To increase the bandwidth for the students and staff to access and download various materials from different websites for their academic and research purpose.
3. **The Context:** In this competitive world, students and staff alike need to keep their knowledge updated by accessing academic websites and watching video lectures on latest state of the art technology. Thus, considerable bandwidth is required to satisfy their needs. Almost all the departments in the University are conducting periodic workshops and conferences which require an access to the various websites and the experts in a timely manner. Hence, this mandates the necessity of Internet connectivity with zero downtime.
4. **The Practice:**
  - a) A new data centre with the following facilities has been created: Virtual Switching System has been implemented with the old and the new Data centre in order to have automatic Disaster Recovery (DR). Thus a 3 tier (Core, Distribution and Access) network architecture has been implemented.

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- b) Wi-Fi has been enabled for the entire Campus with a Wireless controller, Indoor and outdoor access points, including L3 distribution switches with high speed internet connection. This facility will allow the students and faculty to access the internet at any time and any place round the clock.
- c) Bandwidth has been increased progressively based on the needs of the user.
- d) A Grievance Redressal Portal is in place to receive and act on grievances, reported by the faculty, students and staff.
5. Obstacles faced A huge investment with an approximate cost of 3.0 crores was required to implement the new Data Centre with networking facility. Management of VSSUT Institutions has sanctioned the fund keeping in mind, the growth and welfare of the student community. To implement this state of the art facility, experts in various domains with rich experience were required. Hence, a team of experts in various fields have been formed and by using their expertise and contribution, a fully-fledged Data Centre with a sophisticated network facility has been created.
6. **Impact of the practice:**
- Faculty can set up assessments and enter assignment marks through their mobiles.
  - Students can leverage the World Wide Web to explore new ideas, prepare for projects/Seminars, and submit assignments round the clock.
  - IP based cameras setup throughout the campus and hostels make the campus environment more safe and secure as well as ensuring discipline.
  - The Grievance Redressal Portal in place enables the authorities to take timely actions on any issue raised by the students and hence avail services in a more effective manner.
  - Infrastructure provides a managed service that gives continuous operation, support, security and flexibility.
  - Improvement in core services results in greater profitability, by moving away from daily management of IT infrastructure and problem solving.
  - Risk Management: Data is safe as it might reside in two data centres (data duplication)
  - Redundancy: The Data centres provide redundant solutions for power, cooling, bandwidth, networking Compute Nodes in Virtual Clusters.
  - WAN Bandwidth: 1 Gbps provided by NKN National Knowledge Network is the Primary ISP for the campus network footprint for internet services and a Secondary Backup is provided through Jio service providers, which furnishes the Campus Networks with high Availability on Internet Connectivity.
  - LAN Network: LAN Network Compromises of 20G LAN Uplinks from Redundant Core Switches which is deployed in VSS (Virtual Fabric mode) providing seamless connectivity and hitless failover for the users.
7. **Resources Required:**

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Product	Sl. No	Description
NGFW	1	NGFW with redundant AC power supplies
	2	10GE SFP+ transceiver module, short range
	3	1GE SFP SX transceiver module
	4	Subscription for Application Control, IPS, AV, Web Filtering and other needful licenses as per the RFP specification
	5	24X 7 Support Contract with OEM TAC
	6	Others as per requirement (if any)
Switch	1	24 10/100/1000BASE-T(370Watt) POE+, 4 SFP combo, 4 1GbE unpopulated SFP, upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port managed switch with 3 Years Warranty
	2	1000BASE-LX SFP, MMF 220 & 550 meters, SMF 10km, LC connector, Industrial Temp
RF Component	1	Point to Point 600 MBPS RF Link+ PoE + Antenna+ Gigabit Surge Suppressor
	2	6 meter Tower on building rooftop using galvanized self-supporting pipe based
	3	Earthing pit for RF Tower
	4	Surge Suppressor copper grounding wire
Passive Component	1	High Link Optic- 6 Fibres, Armoured, Uni-loose Tube Cable, OS2 9/125
	2	6 Port-Sliding Patch Panel-1U, 2c/o with Future Ready 1BP, 3LCD x1P, 6LC Pigtails - OS2 9/125
	3	24 Port-Sliding Patch Panel-1U, 2c/o 6LCD x2P, 24 LC Pigtails -OS2 9/125
	4	High Link Optic SC- UPC - LC-UPC Duplex Patch Cords, OS2 9/125 -3 Mtrs
	5	Cat6 SF/UTP Cable
	6	Supply, Delivery & Installation of Wall Mount 9U x 500W x 450D Front Glass door (Tinted Toughened) with Lock & Key, 2 Pairs of 19" Mounting Rails Standard Accessories: 1U Cable Manager (1), Hardware Packet (1 Pkt), 6 Socket 5 Amp, Power Distribution Unit (1 No.), Roof Mounted Fan Unit / 90 CFM / 230V AC(1 No.)
Service	1	Laying of 6 Core Armoured SM Fibre Cable with 32-40 mm HDPE Pipe through HDD machine - 1 Mtr Depth as per Standard Specs.
	2	Installation of LIUs (6 ports) in Racks
	3	Installation of LIUs (12 ports) in Racks
	4	Splicing of Optical Fibre Cable per core
	5	Fibre Testing with OTDR per core & Site certification
	6	Laying of 4 pair Cat6 STP Cable through PVC Conduit / Flexible pipe
	7	Laying of HDPE Pipe with 6 core Fiber (Inter Building)
	8	Fixing of Route Marker
	9	1m x 1m x 1m Manhole Supply with installation
	10	Installation of RF Link



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