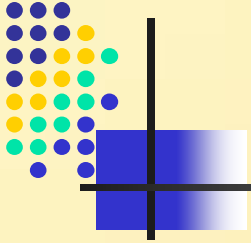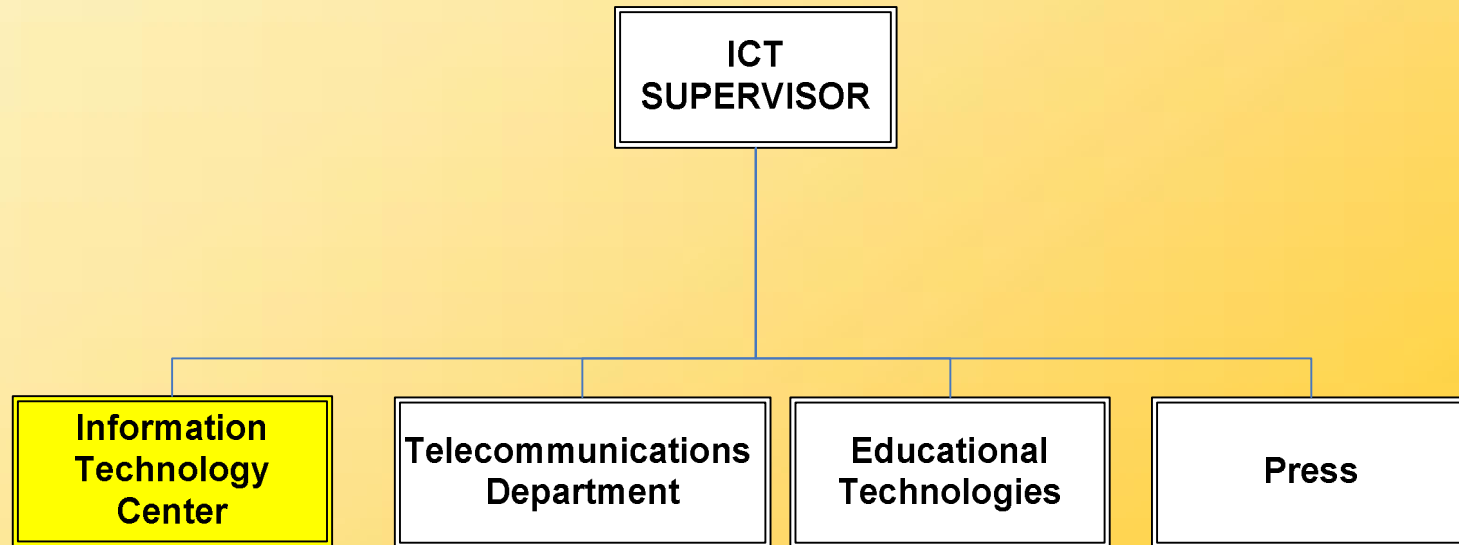# King Fahd University of Petroleum & Minerals
Information & Communications Technology
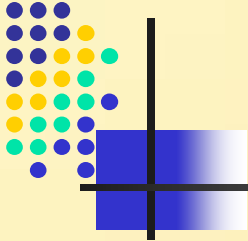
Information Technology Center (ITC)
Services and Projects
Sadiq M. Sait

Supporting Excellence via Technology

Information Technology Center

```
                        ┌──────────────────┐
                        │       ICT        │
                        │   SUPERVISOR     │
                        └──────────────────┘
                                 │
      ┌──────────────────┬───────┴──────────┬──────────────────┐
┌────────────┐  ┌──────────────────┐ ┌──────────────┐ ┌────────────┐
│ Information │  │ Telecommunications│ │ Educational  │ │   Press    │
│ Technology │  │   Department      │ │ Technologies │ │            │
│  Center    │  │                   │ │              │ │            │
└────────────┘  └──────────────────┘ └──────────────┘ └────────────┘
```
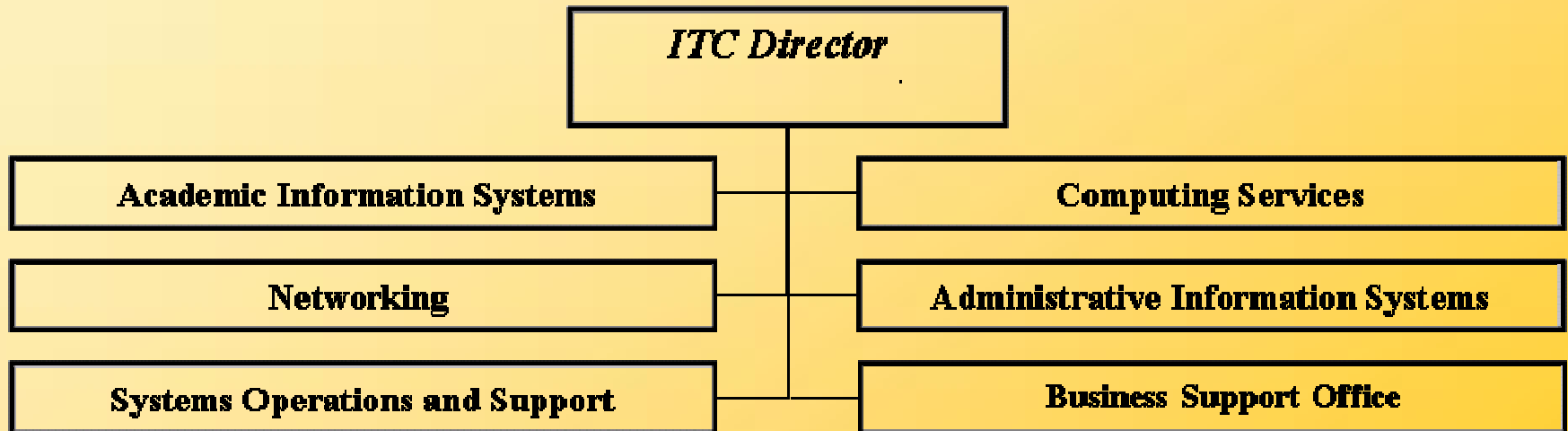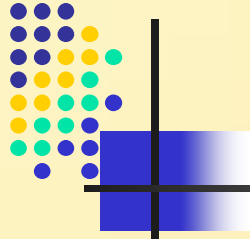
ITC Mission

We are committed to providing high-quality information technology   services (infrastructure, services, applications) that foster a productive academic and research environment for students, faculty, administration and staff at KFUPM.

Overview of ITC Departments

```
                    ┌─────────────────────┐
                    │    ITC Director      │
                    └─────────────────────┘
```

Academic Information Systems		Computing Services
Networking		Administrative Information Systems
Systems Operations and Support		Business Support Office

Recently Completed ITC Activities .. 1

| Category	Accomplishments & Status
Frame Agreement 2005 for Desktop Hardware	New desktop computers acquired include **800 notebooks** and **1000 PCs**, printers, scanners etc. Hardware **deployed** in academic/administrative departments, community colleges, smart classrooms and computing labs Replaced hardware **relocated** based on computing requirement criteria
Academic & Administrative Application Support	Over **35 scientific & engineering** applications on enterprise platforms Up to **65 applications & utilities** deployed on the desktop Over **30 administrative** applications on enterprise platforms
Horizon Deployment in the Main Library	Production servers **upgraded** **Continuous** system administration & performance monitoring by a dedicated ITC team

Recently Completed ITC Activities ..2
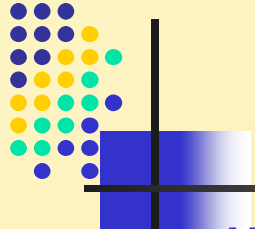
| Category	Accomplishments & Status
New University Website	• Latest technologies used to enhance image • Powerful search capability & interfaced with Faculty Information System
Computing Labs	• 12 ITC General-Purpose & Departmental PC labs upgraded • ITC technical support for 44 departmental labs including desktop image preparation, server applications and license manager deployment
Application Development & Deployment	• Redevelopment/enhancements to Financial Resources System & Human Resources System • Development of Student Mail Desk System for snail mail, Student Services System & Computer Allowance (CAC) Workflow system • Conversion of all legacy systems as web-enabled applications using WebSphere/Java platform
Student Dorms Network	• Over 1100 student computers currently connected • Support for 2204 fast Ethernet nodes (100 Mbps)
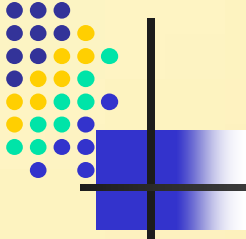
Making IT Happen – Some Interesting Stats

Academic courses currently managed mainly on WebCT	600
Training man days conducted for the university community this year	1200
Network nodes added to the university network this year	665
Total Number of Email accounts	14,381 (8,500 in 2000)
Total Number of Internet accounts	14,695 (9,500 in 2000)
Email messages processed every day this year	39,612 (4,500 in 2000)
Email data processed per day this year	3.4GB (400MB in 2000)
Total Number of PC Labs inside campus	52
Computers available to students in labs & student dorms	2600
Student to available institutional computer ratio	3.43
Hardware and cabling service jobs handled every month	184
Software troubleshooting & installation requests processed monthly	350

Towards a Technology Campus:

- **ITC has taken many steps to redefine the way information is being delivered utilizing the latest computing and communication technology. Major projects completed:**
  - **Wireless Campus**
  - **University Laptop Program**
  - **Web-enabled Applications**
  - **University Website – Look, Feel, and Technology Enhancements**
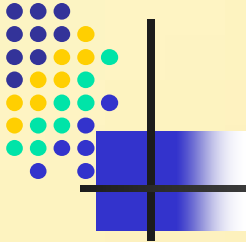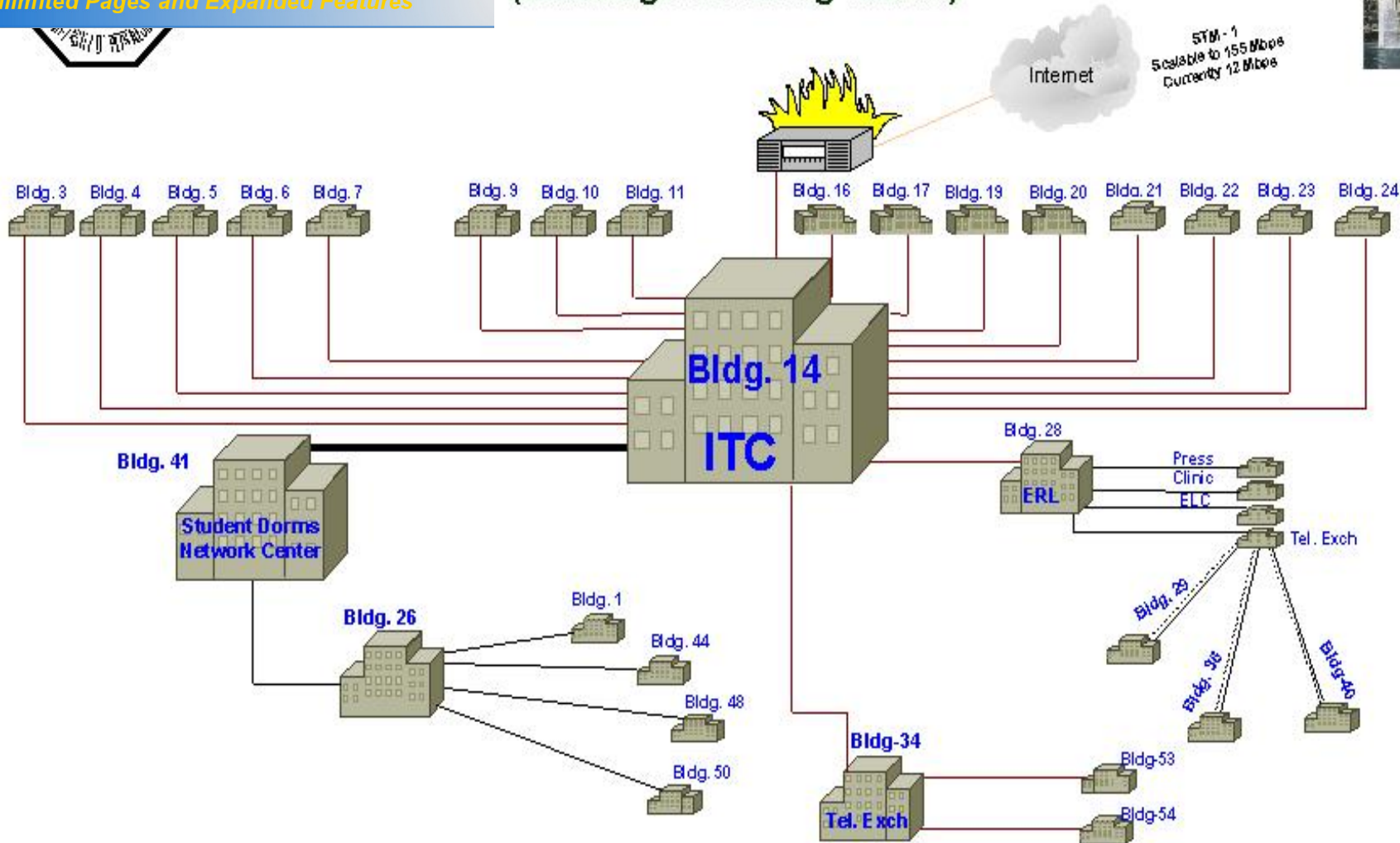
Wireless Network @ KFUPM

- **Largest university Wi-Fi network in the region**

- **Wide coverage including**
  - **38 academic buildings**
  - **Student activity areas and outdoor areas included for ubiquitous coverage between important buildings**

- **Access Points - building blocks of wireless network**
  - **314 access points already deployed**

- **Augmentation planned with WiMax deployment to cover entire outdoor campus**

Wireless Network – Technology Overview

- **Wireless Specifications**
  - **IEEE 802.11a/g standard**
  - **Uses available/unlicensed 2.4/5 GHz ISM Band**
  - **Provides higher data rate (up to 54 Mbps)**
  - **Backward compatible to IEEE 802.11b**
- **Technology Features**
  - **Scalable Enterprise Solution**
  - **Designed for Mobile WLAN users, PDAs, Wireless IP Phones**
  - **Highly Secure**
  - **Enterprise Network Management**
- **State-of-the-Art Equipment from Cisco**

KFUPM Campus Network
(Buildings Covering WLAN)

Future with Wireless

- **Planned extension with WiMAX**
  - **objective is to cover the entire campus**
  - **WiMAX will be integrated with current WiFi infrastructure**
  - **faculty and students will be able to use wireless applications everywhere, not only inside buildings**
- **Advanced PDAs, special units for RFID & barcode for specialized inventory and tracking applications**
- **Wireless LAN - Voice over IP (VoIP)**
  - **SIP & H.323 Clients**
  - **Wireless IP Phones**
  - **Free mobile communication using PDAs**

University Laptop Program Deployment

- ## University Faculty Laptop Program
  - Advanced Notebook and Docking Station
  - Desktop experience while in Office
  - 350 faculty members have been assigned notebooks in 051 alone

- ## Student Laptop Program
  - ICDL qualification ensures notebook usage and competency of students
  - Delivered directly at KFUPM and "ready to go"
  - KFUPM stands behind the program

The Web and Feel

ITC Projects – Status: Ongoing .. 1

- **Wireless Computing**
  - 38 academic buildings fully wireless zones by end of January 2006
  - Increased utilization through deployment of 800 notebooks
- **Enterprise Database Implementation**
  - New design to integrate legacy databases
  - Cleansing of data to enhance data accuracy
  - Preparation for data migration in Project Raed
- **Document Management System (DMS) Implementation**
  - Acquiring Advanced Workflow to support current DMS
  - Procurement of high-end DMS-enabled scanners for all departments
- **Community College Support**
  - Continuous server & desktop hardware acquisition support at Hail, Dammam & Hafr Al-Batin
  - Total deployment & management of computing services at Dammam Community College
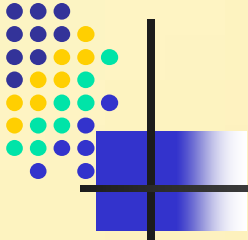
ITC Projects – Status: Ongoing .. 2

- ## Server Consolidation
  - Rack-based Enterprise & Blade Servers to replace more than 60 scattered old servers
  - Capacity enhancement to improve performance of critical systems
  - Staggered acquisition to maintain state-of-the-art hardware for future implementations including ERP

- ## Online Help Desk, Change Management & IT Assets Management
  - Enhanced accountability to improve services
  - Clear guidelines and aggressive changes to process hardware & software requests
  - Intensive effort to streamline IT Assets ownership

- ## Network & Systems Management
  - Advanced implementation for continuous monitoring and detection of network & systems failures
  - Strategy to implement zero downtime for networks and systems

The Future@ITC .. 1

- **KFUPM Portal**
  - Institutions of higher-education collaborative portal **uPortal** adopted for implementation
  - Standards-based JSR-168 portlets
  - Easier interface with Oracle & Student portals
- **Extended Mobile Campus**
  - **WiMAX** is a standards-based wireless technology that provides high-throughput broadband connections over long distances
  - **WiMAX**-based extensions to create a digital university campus with better bandwidths for e-learning
  - Intel plans WiMAX enabled notebooks by third quarter 2006
- **High Performance Computing (HPC)**
  - Two 24-processor Unix-based servers and an 8-CPU cluster currently operational
  - Implementation of a large HPC facility to support advanced research planned
  - Clusters of PCs also available for Research
- **Awareness for Faculty/Administration**
  - Intensive program planned
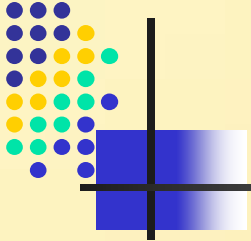
The Future@ITC .. 2

- **Curriculum Delivery Systems Enhancements**
  - Planned deployment of **Centra** to enhance **WebCT**
  - Enhanced course content management
- **The ERP Project**
  - Intensive preparation for required IT Support
  - Enterprise database design and implementation
  - Building required IT competencies for successful deployment
- **Enterprise Storage & Backup**
  - Enhanced online storage for users NAS (network attached storage) and SAN (storage area networks) systems
  - Backup of all critical desktops planned
- **IT Security**
  - Security plan to ensure high security for existing and planned systems
  - ADSL security plan for faculty housing network

Thank you ☺