

# SomaliREN Annual Meeting

## University Leaders Retreat

### The Road to the Smart University

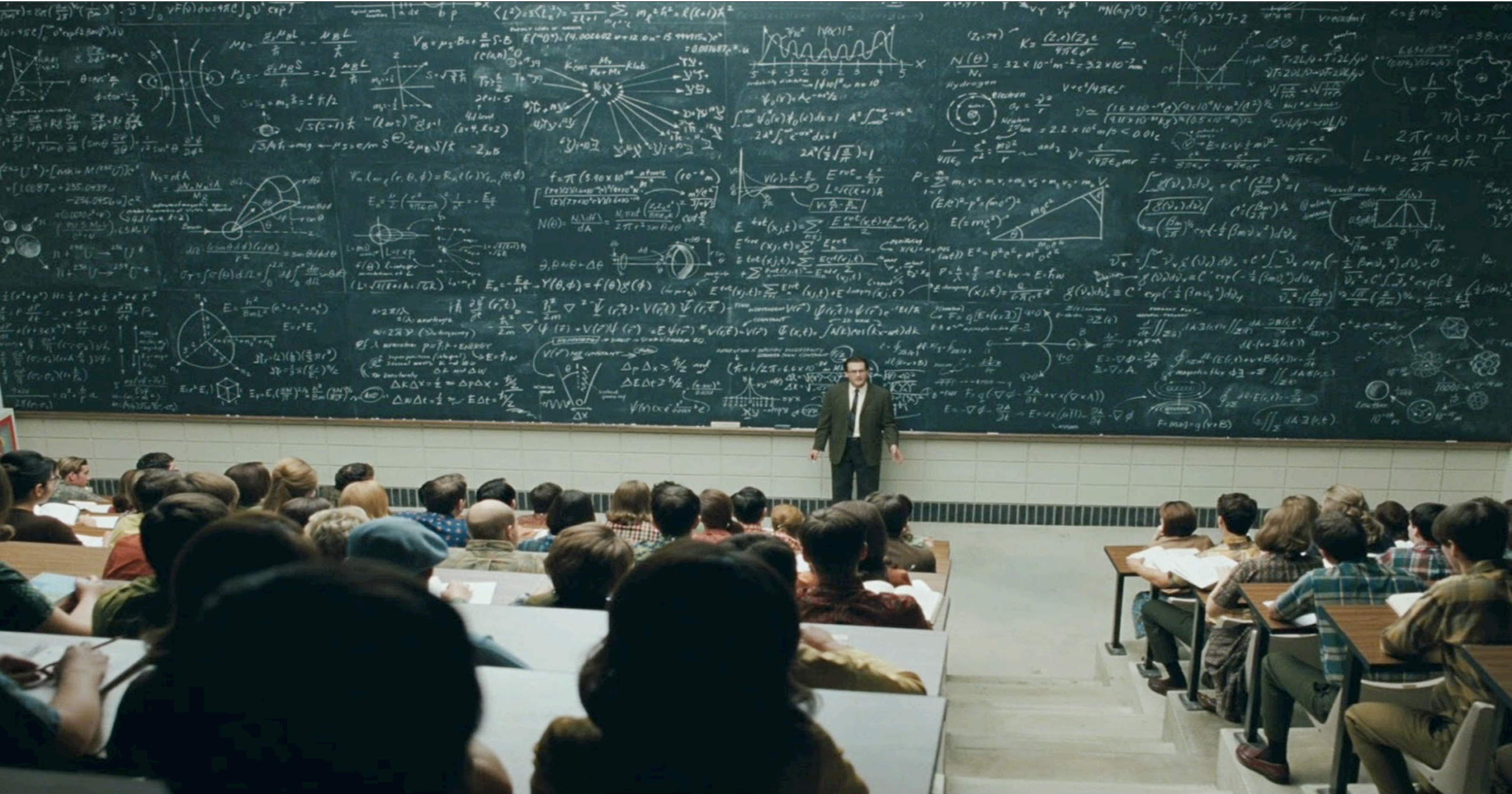
08- 09, July, 2021

Jigjiga

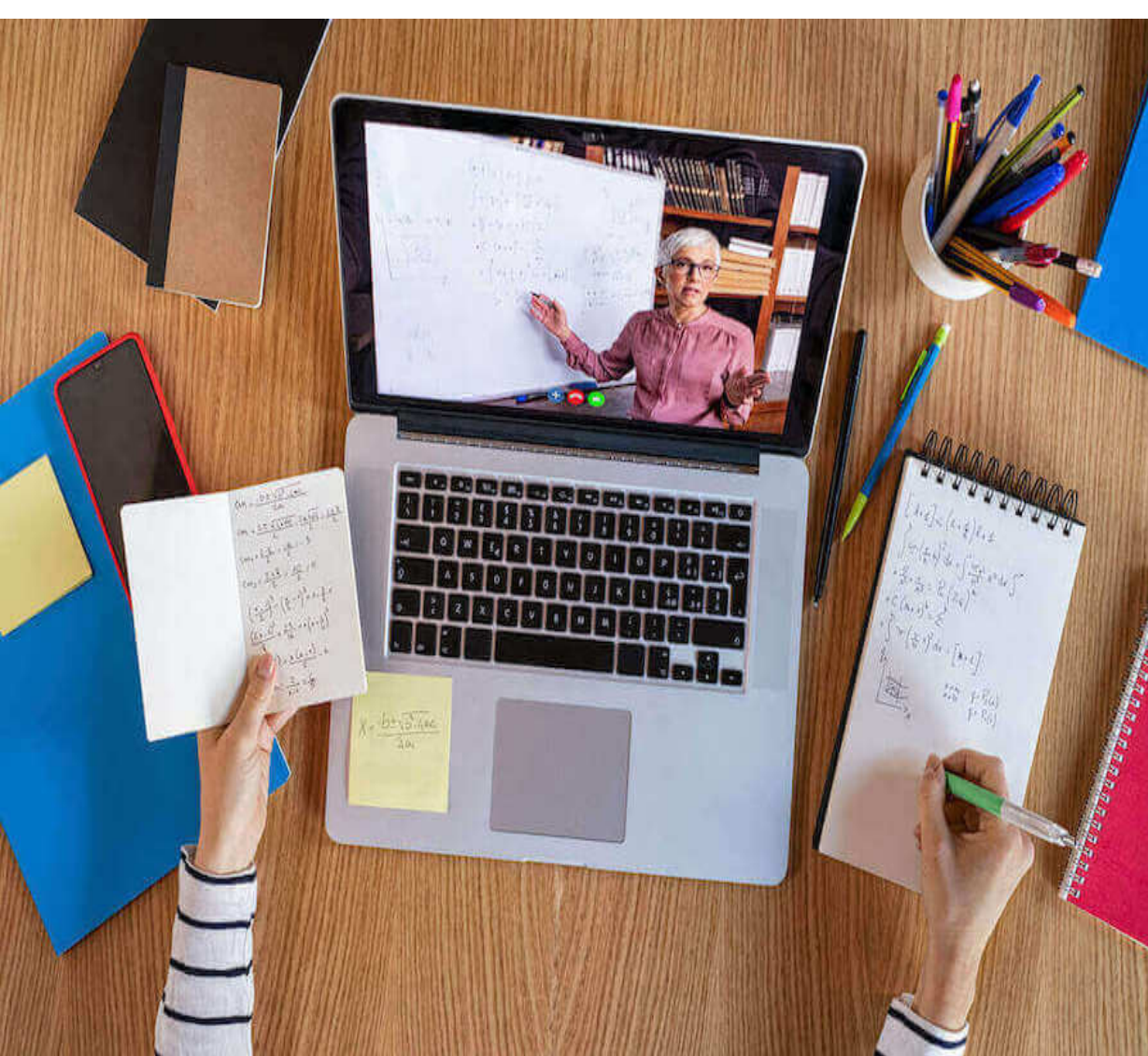
Mohamed Ahmed Mohamud

President

Jamhuriya University of Science & Technology (JUST)







Source: <https://onlinedegrees.sandiego.edu/remote-teaching-resources-2/>



Source: <https://neconnected.co.uk/learning-in-the-digital-age/>





Source: <https://start.docuware.com/blog/document-management/6-paper-based-processes-killing-your-productivity>







# Universities Have to Adapt



The  
most  
important  
drivers of  
university  
change



# Students Are Going Digital



Students are migrating to a digital world dominated by online access to knowledge



# Information Abundance



Decades ago the largest collection of Info. would always be found in the library



But now we live in a world where information is abundant and easily available online



# Major Technological Changes



The pace of technological change is accelerating



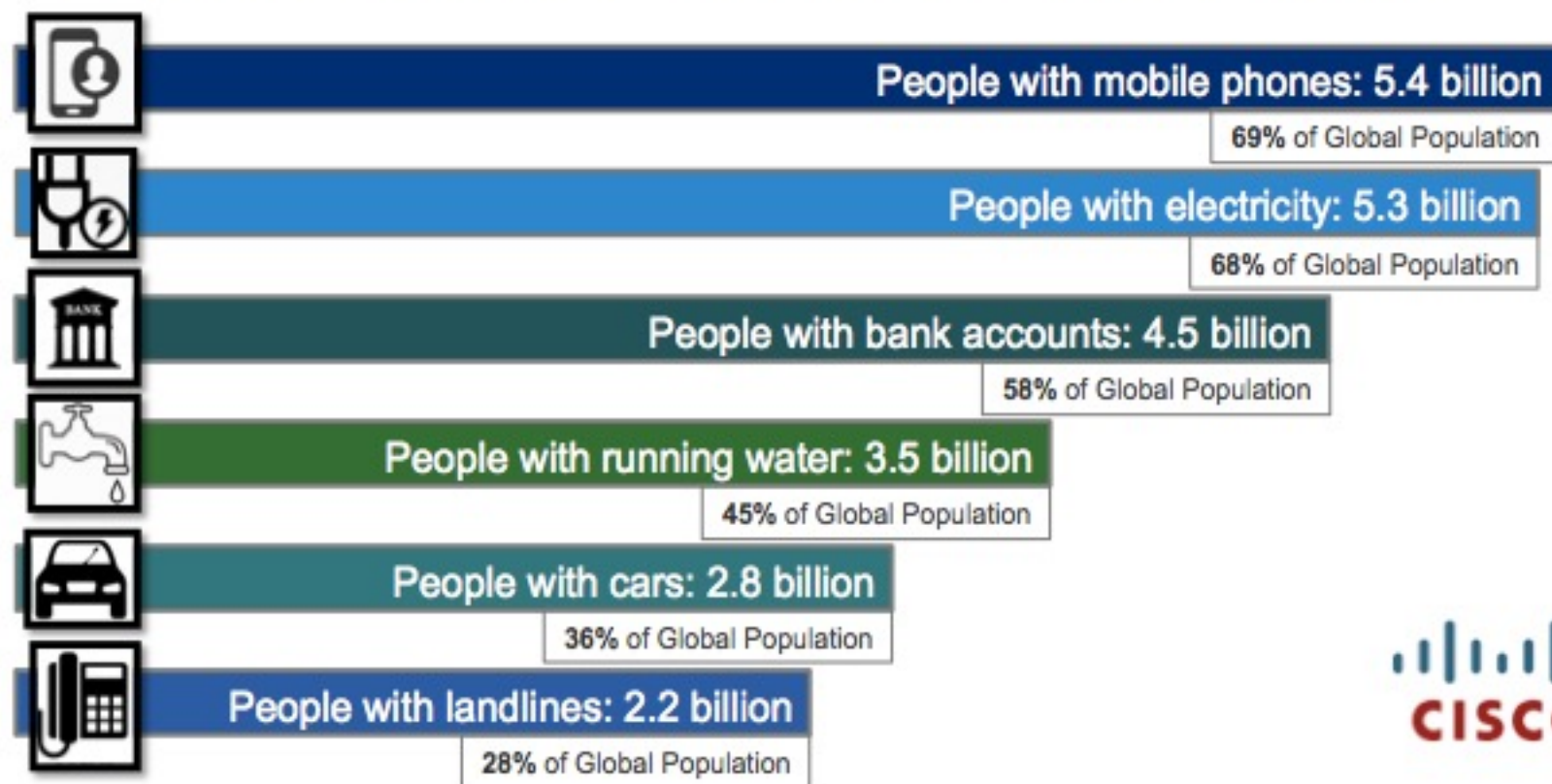
# Exponential Growth of Mobile

- The number of mobile devices exceed the world's population
  - 50 billion connected devices by 2020
  - 6 - 8 connected devices per person (2020)

# Exponential Growth of Mobile

## Mobile Growth Continues Through 2020

By 2020, more people will have mobile phones than electricity at home





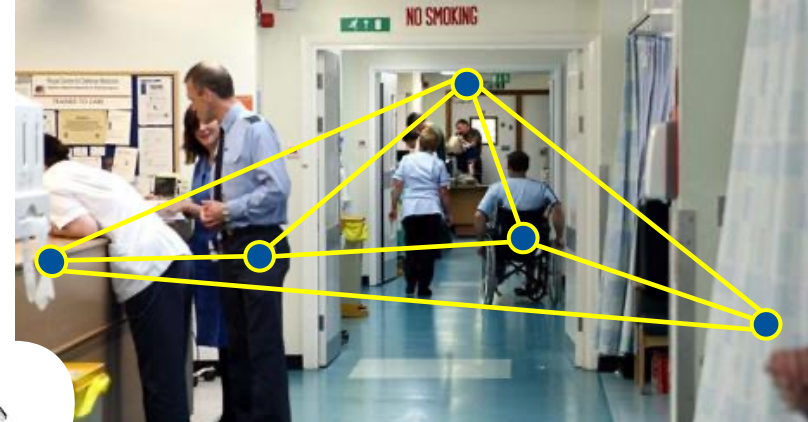
# The Internet of Things -IoT



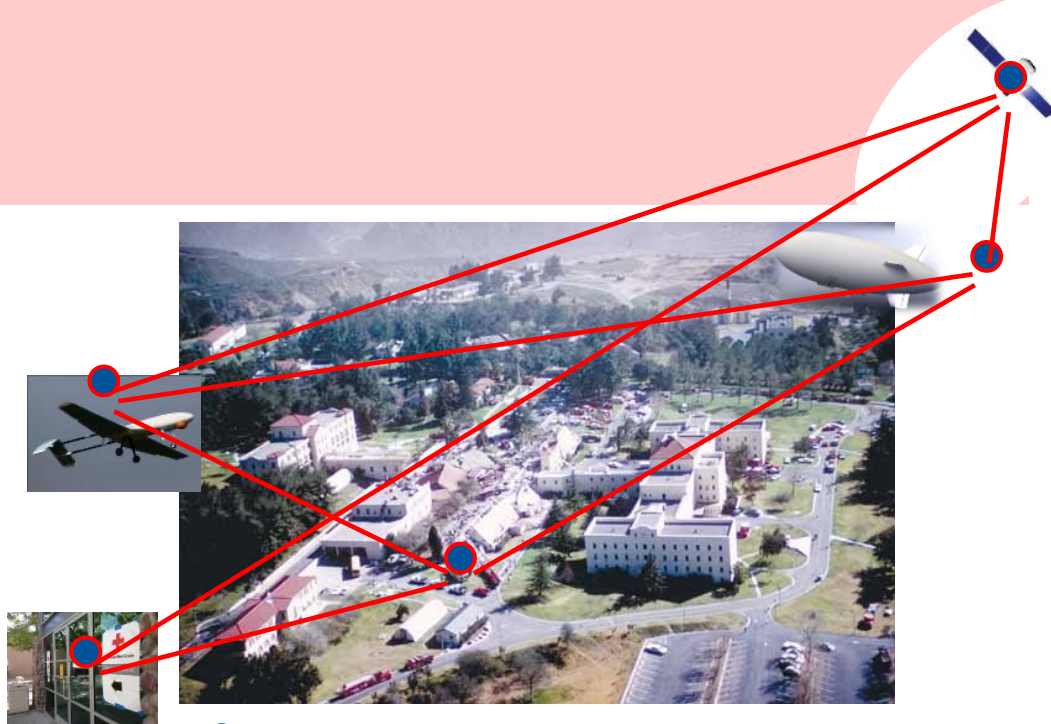
Network of  
**connected  
objects** that  
link the  
physical world  
with the world  
of information

# The IoT: When objects **anticipate** and **negotiate**

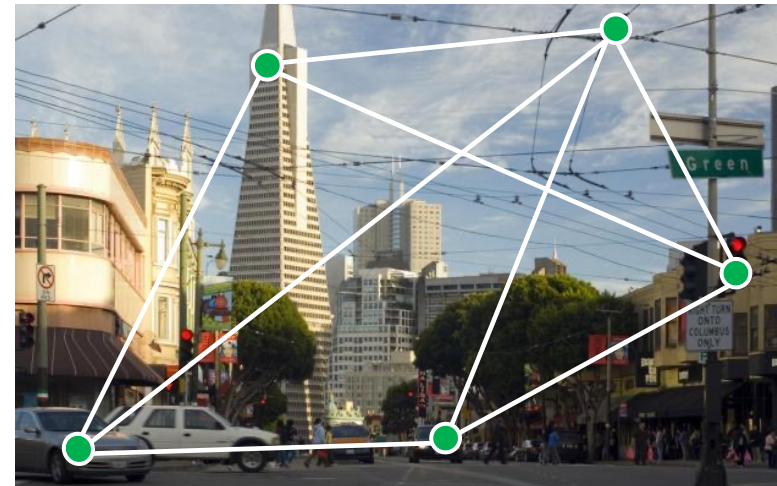
- Billions of devices on the Internet.
- Smart phones/ watches, wearable devices (Smart People), “Smart Homes and Grid” and “Ubiquitous Cities”, Robotics, remote sensing



**Smart Public Health Clinics**



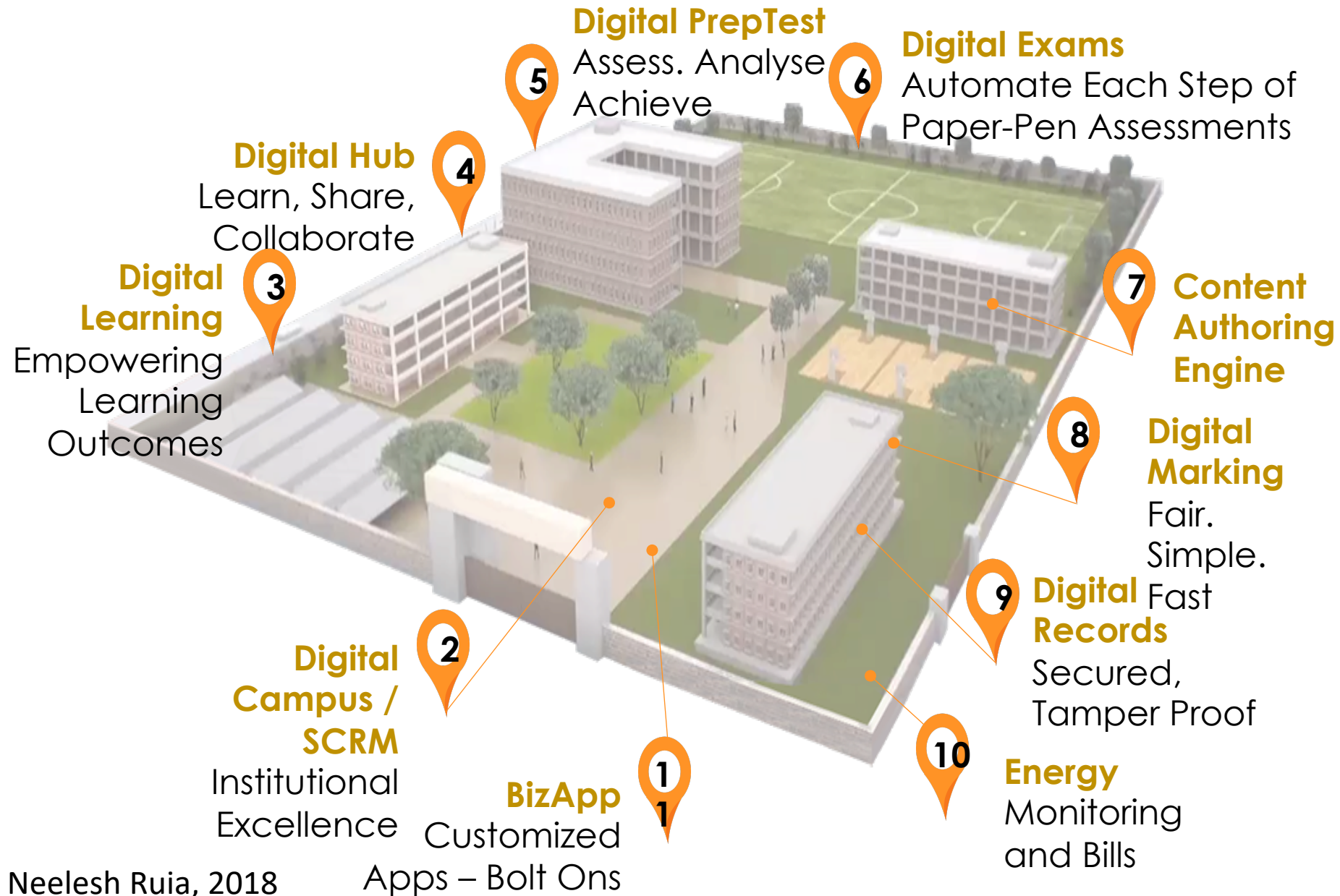
**Smart Emergency Response**



**Smart Cities**

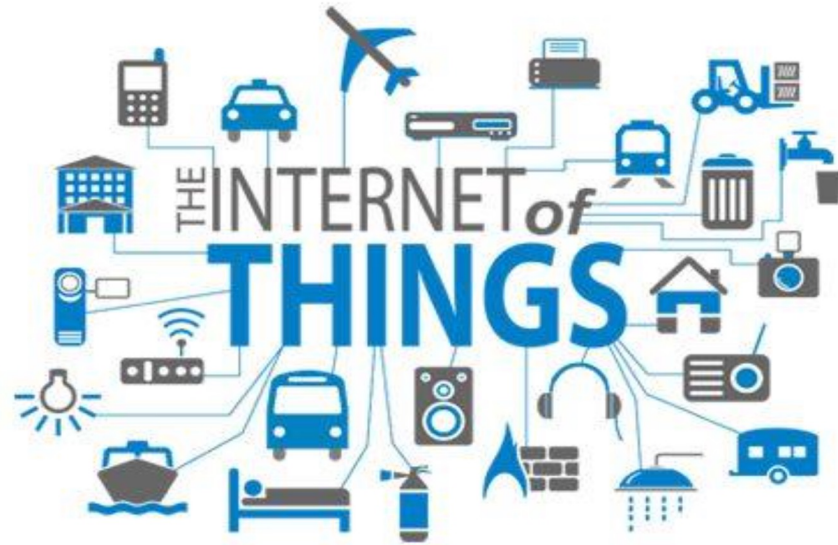


# ...and of course **Smart Universities**



# Smart Universities

- Network Connectivity
- Remote & Visual management
- Status Monitoring
- Space Utilization
- Digital Notifications
- Autonomous vehicles
- Tracking, and alerts e.g. energy management, logistics, transport, driver behavior.

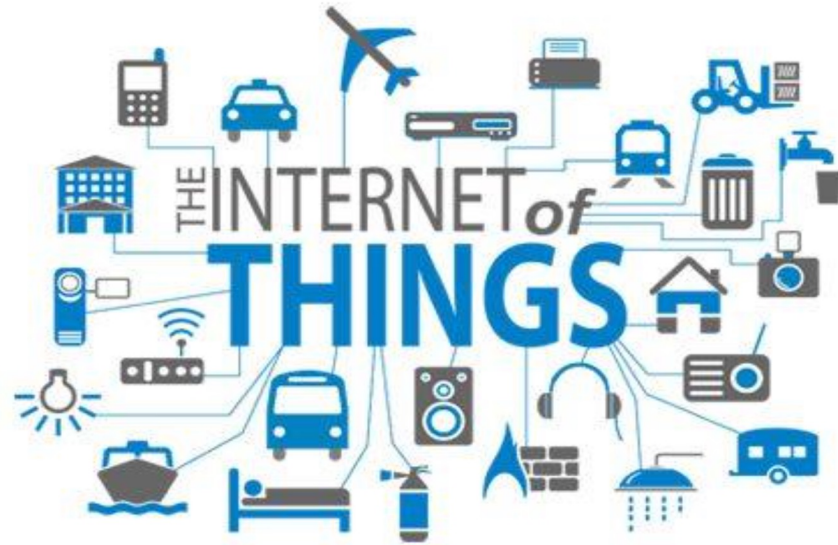


Kuva 1. Internet of Things. Lähde: Huffington Post



# Smart Universities

- Connected devices are **generating data on student learning and activity**, informing the direction of content delivery and university planning.
- IoT has the potential to **help universities:**
  - **Reduce costs**
  - **Use student data more efficiently**



Kuva 1. Internet of Things. Lähde: Huffington Post

# Smart Campus



**E-Learning**



**Always-on  
connectivity**



**Advanced  
Cyber-Security**



**Data-driven**



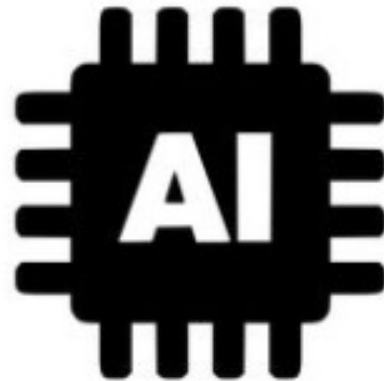
**Safe  
Environment**



**Academic  
Credibility**



# Technologies that support Smart Campus



# Smart University

- For the purpose of this presentation:
  - “A university which enhances the education, research, and work processes and experiences of stakeholders by incorporating digital, innovative, internet-based technologies for the betterment of the users of its services.”



# Smart University

- ✓ Network Infrastructure & Connectivity
- ✓ Student Admissions & Student Portals
- ✓ Staff Recruitment & Staff Portals
- ✓ Exams & Results Management System

- ✓ Distance Learning (E-learning)
- ✓ Financial Administration
- ✓ Research Management & Dissemination
- ✓ University Online Library Services
- ✓ and such similar

# Key Drivers of Smart University

- Transformative and Visionary leadership(Leadership Commitment)
- Hard work, Team work, and Results Focus
- Staff buy-in and Supportive Managers: Deputies, Deans and HoDs
- Partnerships and Collaborations
- Government Support



# The **Role** of University **Leadership**

- **ICT Policy:**

- Formulate an ICT Policy and Guidelines with the aim of guiding the identification, promotion and appropriate utilization of ICT at your university
- The ICT Policy should aim at ensuring that ICT applications are **integrated** into the planning and implementation of the **University Vision, Mission, and Core Values** that usually aims to improve the quality of its activities

# The **Role** of University **Leadership**

- **ICT Strategy:**

- An ICT strategy is a document created as part of your university's strategic and **ICT investment planning**.
- It **roadmaps** the dream, establishes route markers, and describes milestones.



# The **Role** of University **Leadership**

- **ICT Budget:**

- Allocating **monetary resources** to various IT programs
  - Staffing
  - Hardware purchase / leases
  - Software purchases / leases
  - Network Infrastructure development
  - Connectivity
  - Fixed-duration projects (Fiber optics networks, CCTV Network, Biometrics, Access control systems, etc.)

A “Smart University” is not a destination. It is rather a continuation of the journey of progress of universities’ role to serve humanity”



# The **Journey** to a Smart University

- The Plan
- The Hardware
- The Software
- The Human

# The Hardware

- A university requires a lot of IT tools (computers and related devices).
- Keep an eye to industry standards, but don't lose sight of your capabilities – policy, plans, budgets, human resource.
- **Scalability.** Keep your hardware current and scalable
- Harnessing **HaaS** (Hardware as a Service)
  - Consider leasing to purchase, especially high end and expensive equipment.

# The Software

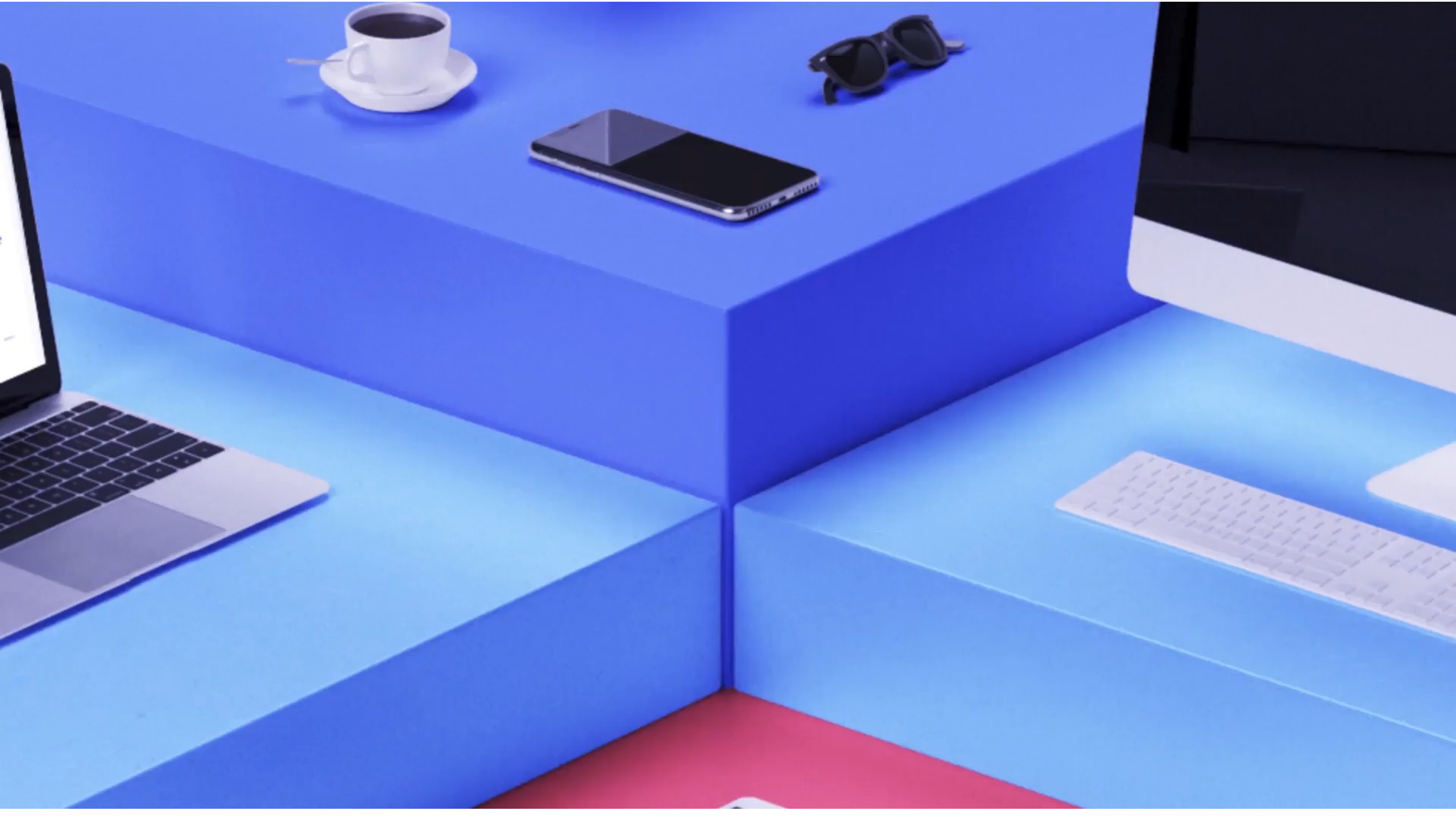
- Proprietary versus Open Source versus locally developed software.
- Whatever software you throw about will need the required intelligence to “talk” to your system, and possibly to each other
- Consider SaaS in some cases.



# The Human

- The Human component of your university system refers to the individual that makes hardware and software components productive.
- It is the most **challenging** and most unpredictable component in a Smart University System.
- They include:
  - **The Management:** Win them over
  - **The Dream Team:** Developers, Appreciate their hard work
  - **The Power Users:** Commend, Potential for the success of the journey
  - **The Early Adapters:** Encourage

The Case of JUST





If we want to prepare our **students** for the **future**, **ICT** should be a **central** part of our strategy and transformation



“It is not the strongest of the  
species that survives, nor the  
most intelligent, but the one  
that is most adaptable to  
change.”

Charles Darwin

# References

- *L\_Fourie\_VC\_Coll\_Zanz\_-\_Future\_of\_ICT\_in\_HEI\_v.3.0.pptx*. (n.d.).
- McLachlan, G. (n.d.). *What is Digital Transformation?* 14.
- *Mitigating\_the\_challenges\_of\_emerging\_digital\_transformation.pptx*. (n.d.).
- Ojok, D. P., & Kinyera-Apuke, G. (n.d.). *A Smart University Administration: Harnessing ICT to Enhance University Business Processes*. 17.
- *SESS148—Dx\_in\_Higher\_Ed.pptx*. (n.d.).
- <https://slideplayer.com/slide/17295777/>



Thank you