

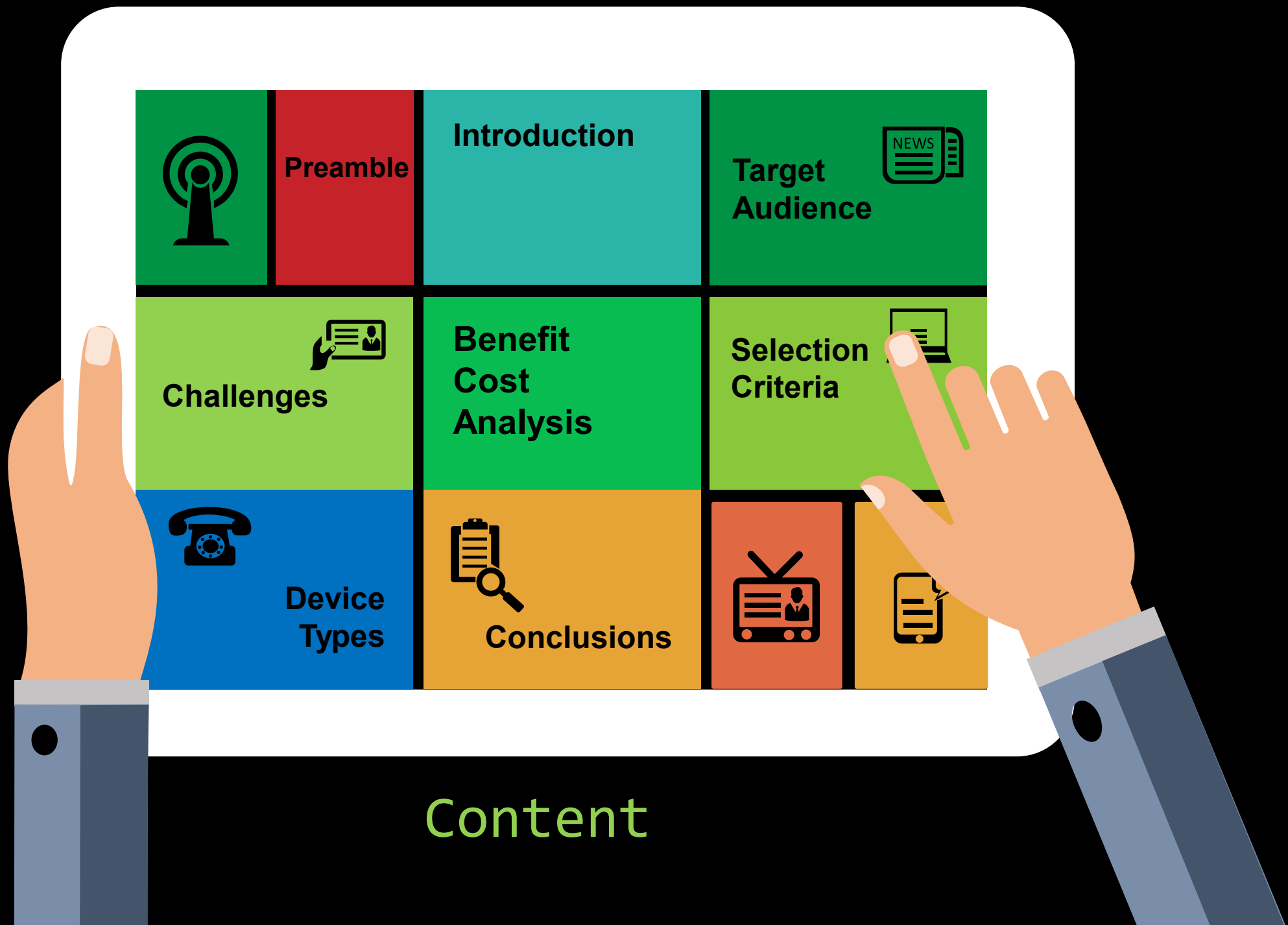
The background features a light gray circuit board pattern with black traces and circular components. A dark horizontal band is overlaid across the middle of the image, containing text.









Smart Learning Forum

**Arab@EDU**

# Choosing your Device

## Benefit Cost Analysis



 Preamble	Introduction	 Target Audience
 Challenges	Benefit Cost Analysis	 Selection Criteria
 Device Types	 Conclusions	 

Content

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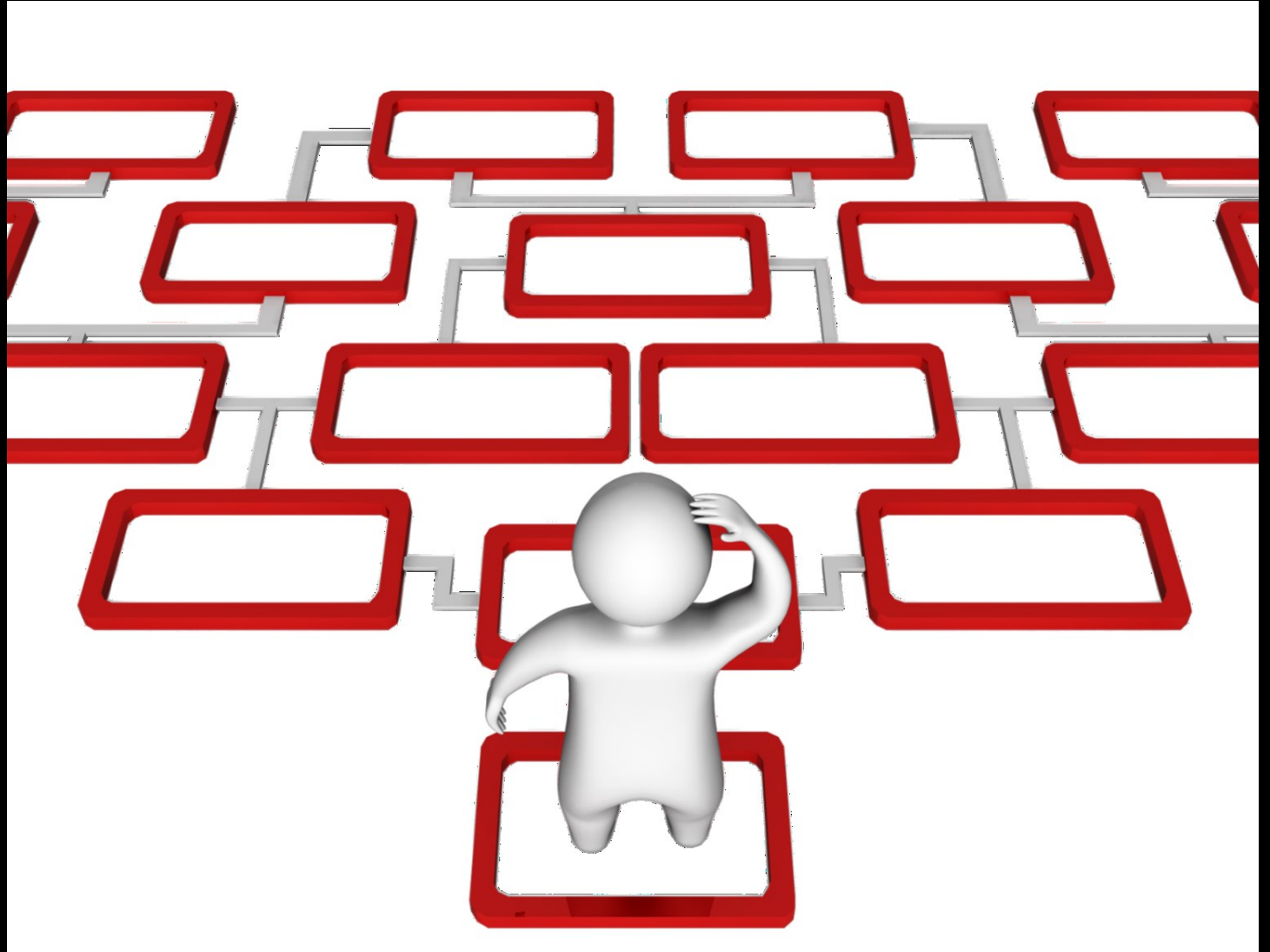
## - Preamble -

- This Study was developed as part of the ITU Arab Regional Initiative on Smart Learning.
- It represents the joint work of ITU with the collaboration and support of INTEL and Millennium@EDU Sustainable Education.
- Its publication is being target for the first quarter of 2016.

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## - Introduction -

There are many choices for devices, and the selection has to be made taking into account a number of factors, which transcend technical specifications or price



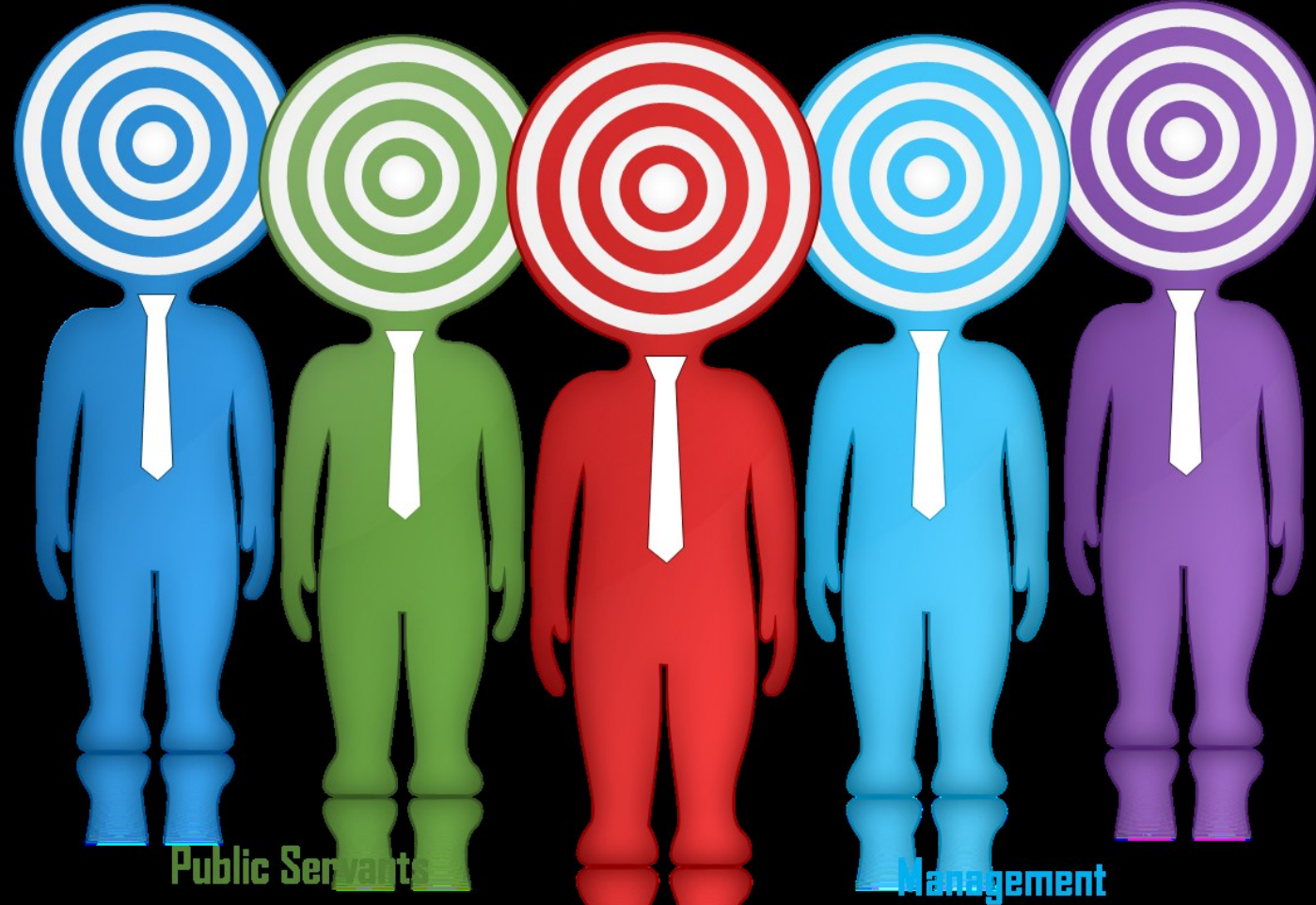
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- Target Audience -

Policy and Decision makers

Project Planners

Teachers/Educators  
and Students



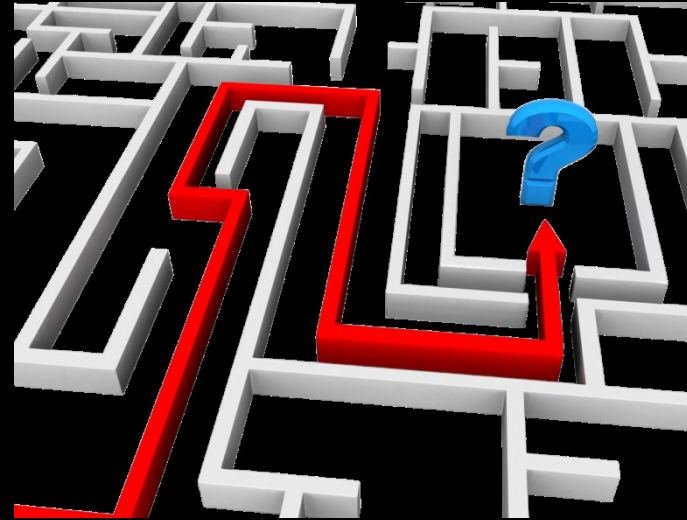
Public Servants

Management

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## - Challenges -

Which are the main challenges?



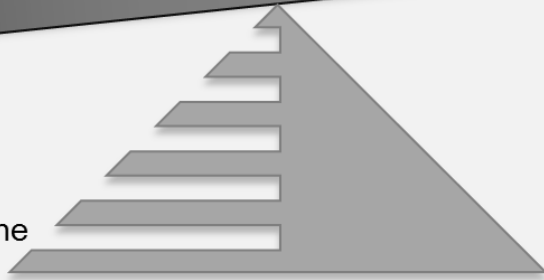
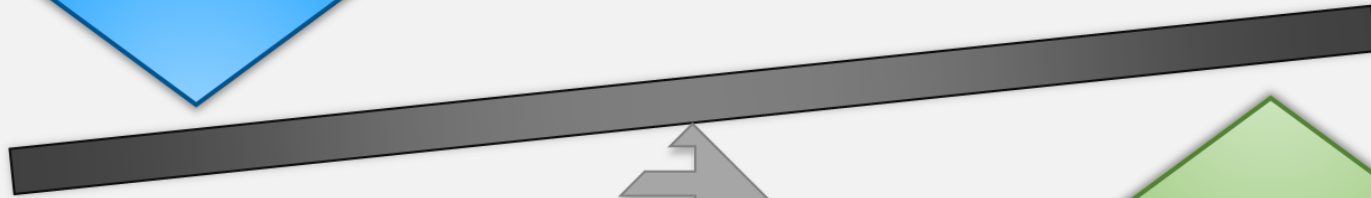
- To identify the stakeholders and create and empower the management team.
- To define the adequate device selection criteria in the context of the Smart Learning Initiative,
- taking also into account a comprehensive **Benefit Cost Analysis**, including the impact on the country's economy and development.

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## - Benefit Cost Analysis -



- Improve education
- Content and Textbook Distribution
- Local impact on economy and new jobs – assembling, support and maintenance
- Positive tax income – VAT, income tax, social security
- Long term impact – broadband access, eGOV boost, increased efficiency of public services

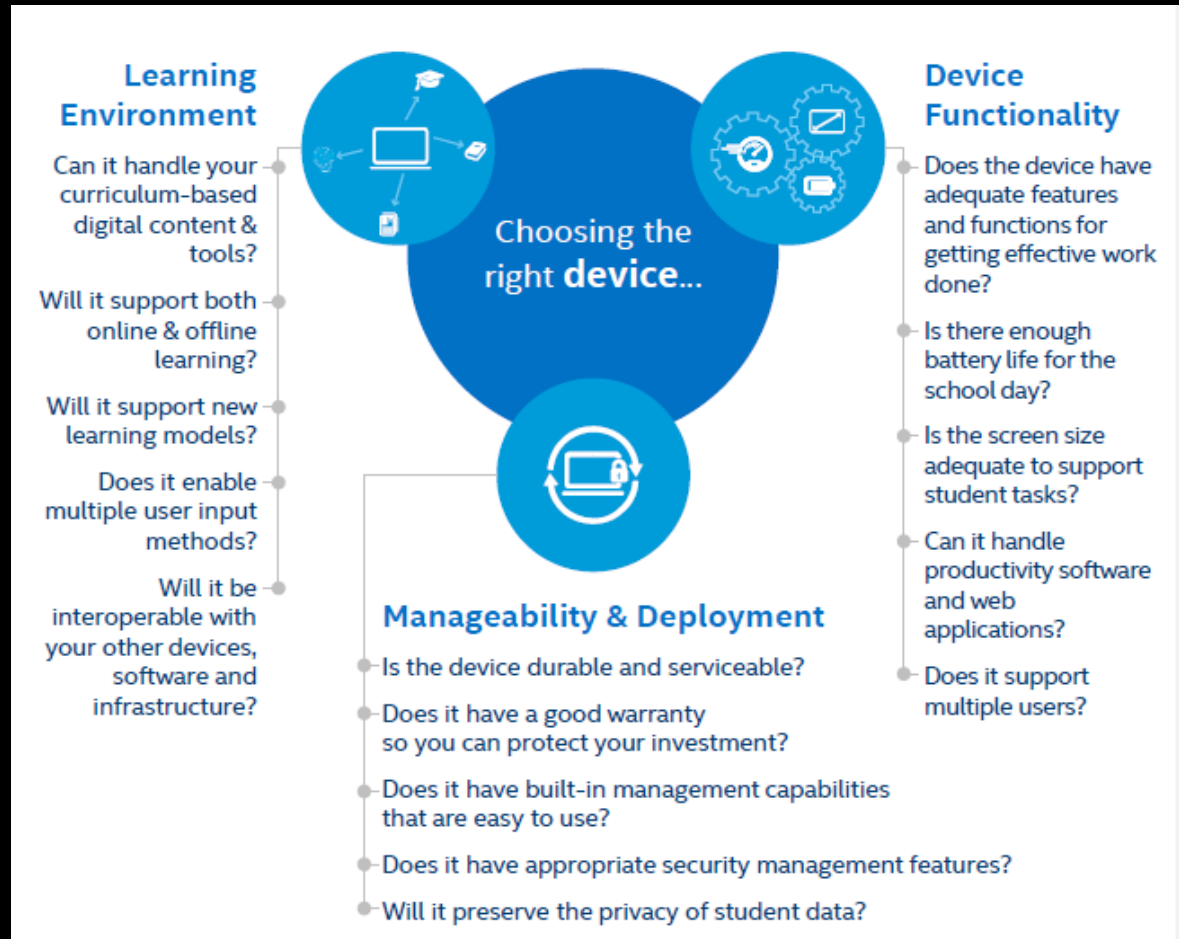


- Device
- Support, maintain, and repair the device
- Software, apps, and content
- Deployment
- Classroom, school and national infrastructure
- Professional development

**A comprehensive Benefit Cost Analysis should be performed when selecting a device**

# Smart Learning Forum

## - Device Selection Criteria -



**5 factors to take into account for this analysis:**

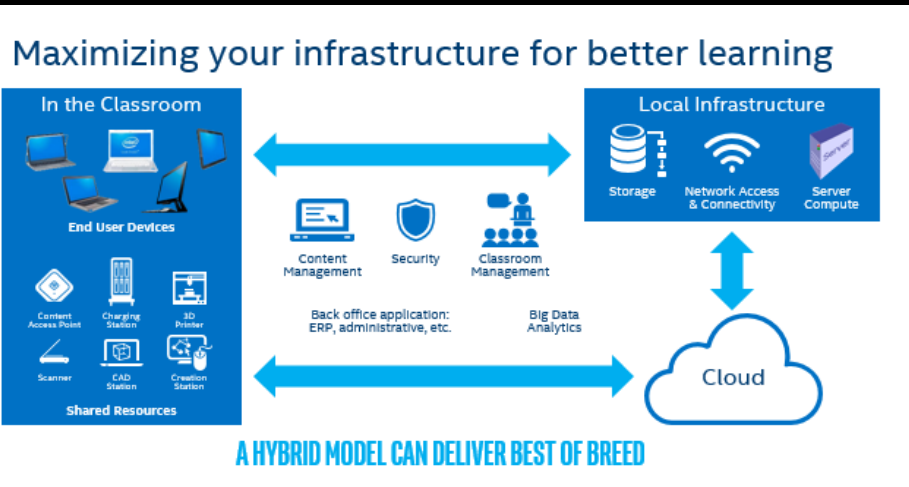
- **Integration with the education infrastructure**
- **Learning Environment**
- **Device management, support and distribution**
- **TCO and ROI**
- **Impact on the local economy and development**



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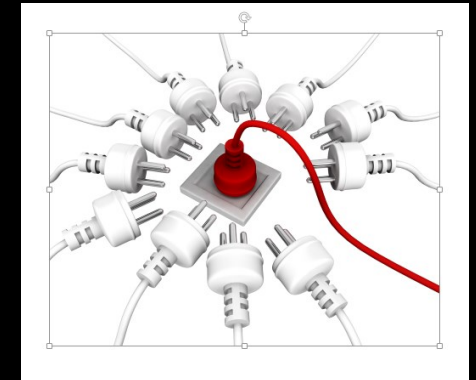
## - Classroom, School and National Infrastructure -

A well-designed infrastructure requires a thoughtful approach at all levels:



- Classroom infrastructure (multiple components, such as IWB, server, teacher device)
- National infrastructure (broadband plan, security, cloud services, management)

- School/local infrastructure (connectivity, storage, power, safety)



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## - Learning Environment -

- Assess curriculum and pedagogical practices first, THEN determine your choice of hardware and software.
- Determine if devices must perform complex tasks, for example creating documents with multiple media like text, graphics, sound, and video.
- Devices need to be able to run sophisticated software applications and enable learning both online and offline.
- Devices need to support digital learning models currently in use and be somewhat future-proofed for the ones now evolving.
- Mobility is fundamental, since students will have multiple learning environments, at school, at home, and others.



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## - Device Management: Distribution and Support -

Devices should be able to support management at various levels:

- For distribution purposes: keeping track of the device and associated software and peripherals throughout their life
- For support purposes: Usage and status of the device, for preventive and corrective maintenance.

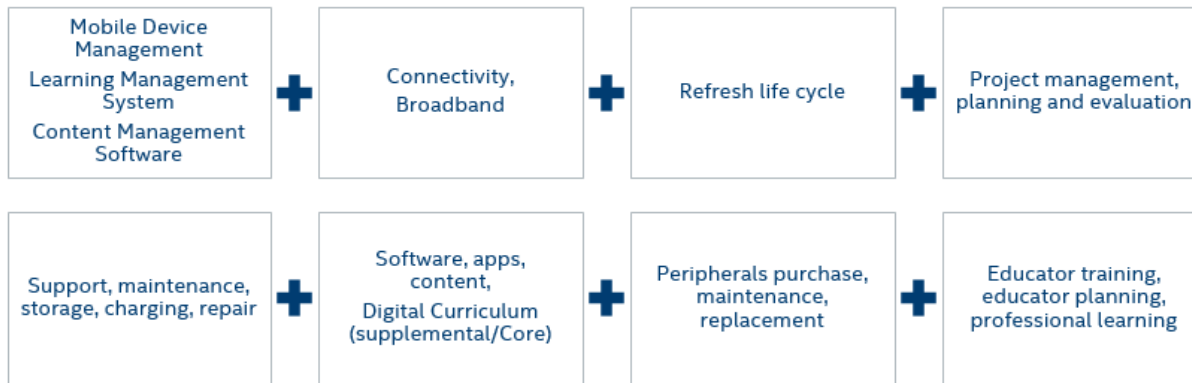


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## - Total Cost of Ownership (TCO) -

### Cost Considerations

Understanding the true cost of deployment helps you save money



**PURCHASE PRICE IS JUST THE BEGINNING.  
UNDERSTANDING THE TRUE COST OF DEPLOYMENT HELPS YOU SAVE MONEY.**

Purchase price of the device itself is just the start. Consider these additional costs over time:

- Cost to support, maintain, and repair the device
- Cost of software, apps, and content
- Cost of peripherals, such as keyboard and mouse
- Cost of professional development
- Cost of device training and adoption time for teachers
- Cost of equipment and peripheral replacement

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## - Return on Investment (ROI) -

ROI needs to be evaluated in an holistic perspective:

- Value added and other transaction taxes on the equipments and services purchased will add up to the ROI;
- Local investment will boost local companies and create jobs, which will retain added value in the country and contribute with income taxes, social security taxes, among others;
- Transversal impacts on the economy, namely through the boost of eGov services, will reduce public costs, based on the increased availability of connected devices in the families and institutions.



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## - Local Impact -

The selection of the device will need to take into account its impact on the local economy:

- Can the device be supported/installed by local companies?
- Can the device have local incorporation - assembling, software, peripherals, components, quality control?
- And what can be the level of local incorporation?
- Are the manufacturers willing to support the creation and know how transfer to a local ecosystem?

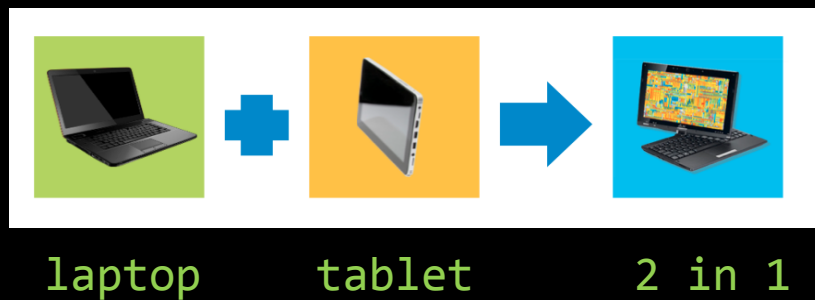


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## - Device Types -

There will be pros and cons for any device you consider. When you select any device, make sure you get a range of benefits derived from your Benefit Cost Analysis. It is also important to evaluate the corresponding operating systems (iOS, Windows, Linux, Android or Chrome)

There are four main groups of devices: laptops (including minilaptops), tablets, Netbooks and 2 in 1 devices.



### There are Many Choices...



This section displays a variety of device options with associated benefits:

- Outstanding performance for students and teachers**: Accompanied by images of a tablet, a laptop, and a desktop PC.
- Long-lasting battery life**: Accompanied by images of a tablet and a 2-in-1 device.
- Works across platforms, form factors and operating systems**: Accompanied by images of a tablet and a 2-in-1 device.
- Committed to high standards of privacy and security**: Accompanied by images of a tablet and a 2-in-1 device.
- A wide range of price points to meet your learning environment needs**: Accompanied by images of a laptop and a desktop PC.

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## - Device Types -

A detailed analysis of the pro's and con's of each device type should be performed, to determine the best fit in the context of the Smart Learning Initiative

							
	Mobile				Portable	Stationary	
Functionality	Tablet	Laptop	2 in 1	Netbook	Portable All-in-One	All-in-One	Mini PC / Compute Stick
Mobility	●	●	●	●	⊘	⊘	⊘
Multiple peripherals and input devices	◐	●	●	●	●	●	●
Large screen to support learning objectives	◐	●	●	●	●	●	●
Device security and protection, user privacy	◐	●	●	◐	●	●	◐
Ease of taking videos and pictures	●	◐	●	◐	⊘	⊘	⊘

● Full
◐ Partial
⊘ Very limited



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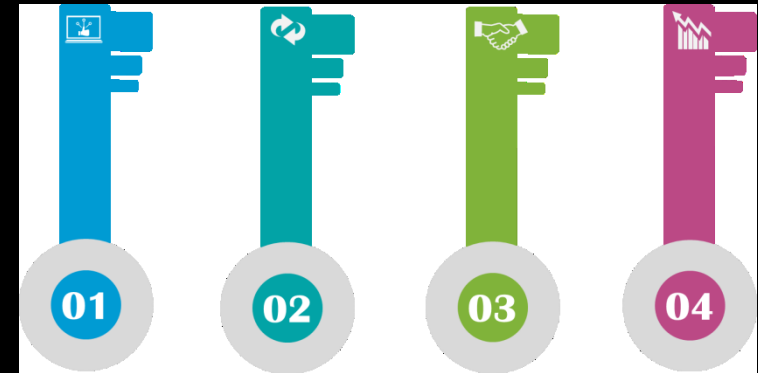
## - Ownership and Multiple Device Models -

It is important to analyze two important models, which can have radically different approaches:

- Ownership models, typically student/family ownership versus school ownership;
- Device uniformity models, that is uniform devices versus multiple devices.

There are multiple combinations of these models, for instance there can be multiple device models in a school ownership model, if the school acquired the equipments over time to different vendors or uniform devices in a student owned model.

Nevertheless, the more typical combinations are uniform devices for school owned models and uniform or multiple devices for student owned, the multiple device being usually associated with the Bring your own Device (BYOD) concept.



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## - Conclusion -

Since devices types play important role in the process, it is recommend to follow a step-by-step approach to cover different factors that may affect the final selection criteria:

