1TEL07
ICT FOR SUSTAINABLE HUMAN DEVELOPMENT IN RURAL AREAS

PUCP

Laboratory 3

Smart Agriculture & Local Governance

Objectives:

- Design ICT-enabled civic engagement platforms for rural governance
- Map stakeholders and analyze ICT access and influence
- Prototype inclusive digital tools for transparency and empowerment
- Evaluate ethical, technical, and social dimensions of governance technologies

Civic Tech Case Studies:

- Ushahidi: crowdsourced crisis mapping
- Open311: municipal issue tracking

- Features: multilingual support, open data, mobile access
- Outcomes: responsiveness, trust, data-driven policy

Scenario: Ushahidi

"Holding governments accountable to strong governance practices, including fair and free elections."

https://www.ushahidi.com/

Scenario: Open311

311 is a special telephone number supported in many communities in the United States and Canada. The number provides access to non-emergency municipal services.

https://www.open311.org/about/

Extra Scenarios:

Sistema de Información
para el desarrollo Rural y
Urbano*

Conectando personas, procesando y
difundiendo información, promovemos el
desarrollo económico en Cajamarca

Extra Scenarios:

COBIT (Control Objectives for Information and Related Technologies)

- Focuses on **what** needs to be done for IT governance, control, and compliance.
- Provides objectives, metrics, and maturity models to measure alignment between IT and business.

Key Concepts of COBIT 5

Meeting Stakeholder Needs

Single Integrated Framework

Separating Governance from Management

Covering the Enterprise End-to-End

01 → 02 → 03 → 04 → 05 → 06 → 07

End-to-End Coverage

Enabling a Holistic Approach

Tailoring to the Organization

https://www.isaca.org/resources/cobit
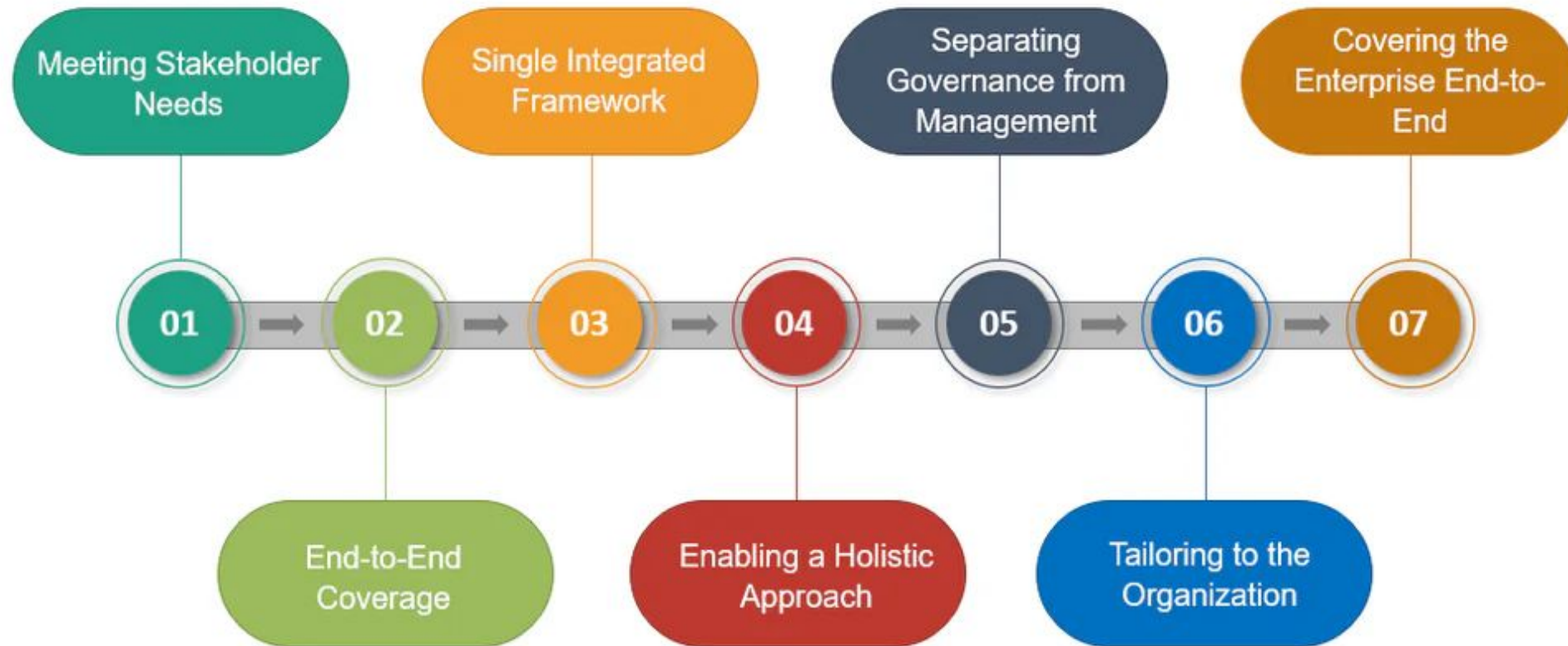
Process Capability Model

Evaluates processes using maturity levels

5 **Optimizing:** The enterprise is focused on continuous improvement

4 **Quantitative:** The enterprise is data friven with quantitative performance improvement.

3 **Defined:** Enterprisewide standards provide guidance across the enterise.

2 **Managed:** Planning & perfomance measurment take place, although not yet in a standardized way

1 **Initial:** Work is completed but the full goal & intent of the focus area not yet achieved.

0 **Incomplete:** Work may or may not be completed towardachieving the purpose of gvemance & managment objective in the focus area.
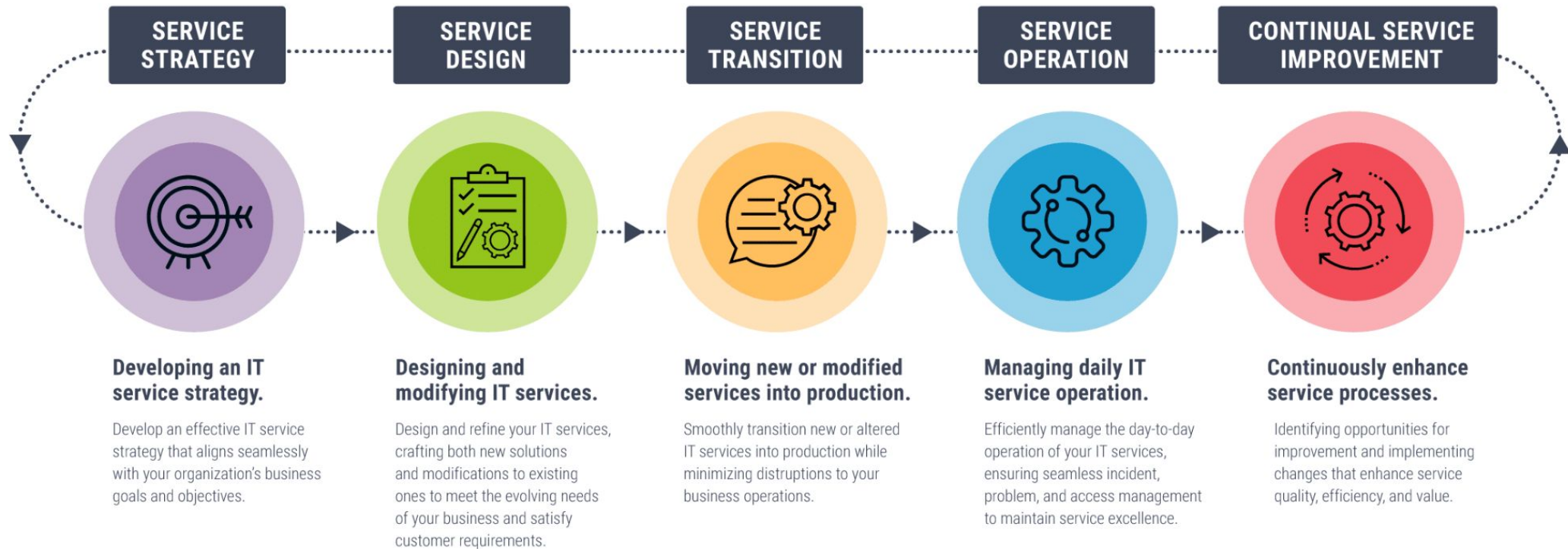
ITIL (Information Technology Infrastructure Library)

- Focuses on **how** IT services should be delivered and managed.
- Provides detailed best practices and processes for the entire IT service lifecycle.

https://www.axelos.com/certifications/itil-service-management

Comparison Table

Aspect	COBIT	ITIL
Primary Focus	IT Governance & Control	IT Service Management
Objective	Lack of training, few resources, tech unfamiliarity	Deliver high-quality, efficient, and reliable IT services
Scope	Broad: governance, risk, compliance, performance	Narrower: IT service lifecycle
Approach	What to do: control-based, high-level guidance	How to do it : process-based, detailed best practices
Users	Executives, auditors, compliance officers	IT managers, service desk, operations teams

Stakeholder Mapping

- Actors: government, health posts, farmers, youth, NGOs
- Dimensions: influence, ICT literacy, device access, decision power
- Tools: stakeholder grid, power-interest matrix, ICT heatmaps
- Identify gaps: digital exclusion, gender disparity, institutional bottlenecks
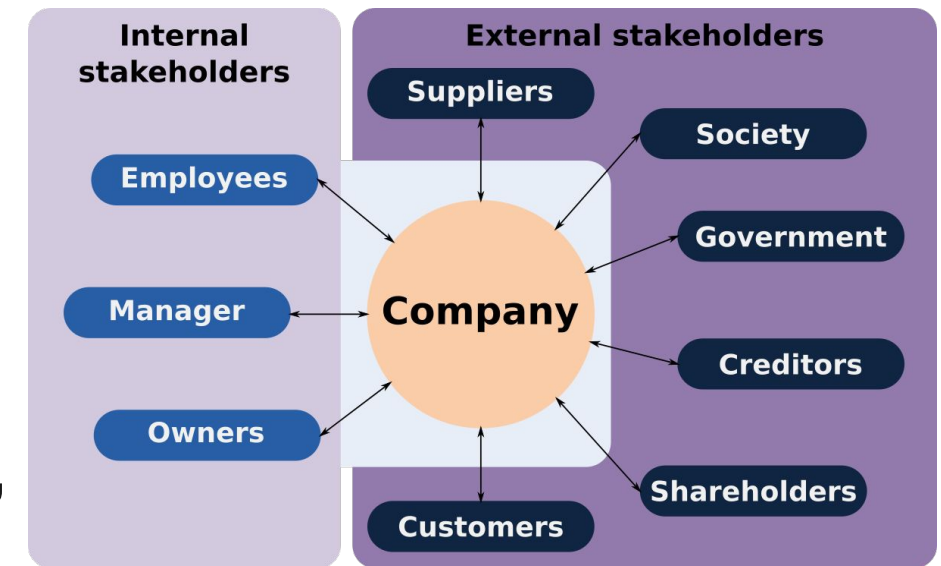
| Stakeholder	Needs / Constraints	Potential ICT Solutions	Role in Implementation
Rural Students	Limited devices, low digital literacy, intermittent power	Offline content, radio-based lessons, SMS reminders	End-users; feedback providers
Local Teachers	Lack of training, few resources, tech unfamiliarity	Mobile training apps, WhatsApp support groups	Facilitators; content curators
School Administrators	Budget constraints, infrastructure gaps	Solar kits, shared tablets, community Wi-Fi	Coordinators; resource allocators
NGOs / Foundations	Need for scalable, low-cost models	Modular toolkits, open-source platforms	Funders; trainers; evaluators
Telecom Providers	Sparse coverage, low ROI in rural zones	LoRa, TVWS, subsidized data packages	Infrastructure enablers
Local Government	Policy gaps, limited monitoring tools	Dashboards, SMS surveys, public radio partnerships	Regulators; conveners
Parents / Caregivers	Low literacy, cultural barriers	Voice-based content, community radio	Supporters; cultural mediators

Platform Design Sprint

- *Prototype civic engagement interface: wireframe or flowchart*
- *Features: registration, reporting, tracking, analytics*
- *Data flow: input → validation → routing → resolution → feedback*
- *Emphasis: modularity, offline access, local integration*

shutterstock.com · 465026000

https://www.figma.com/wireframe-tool/
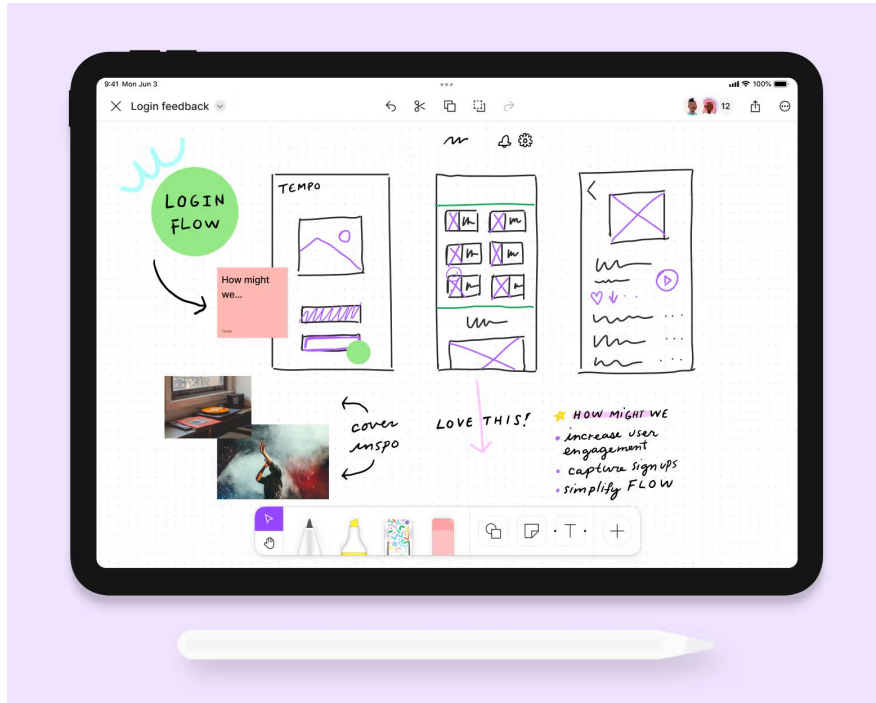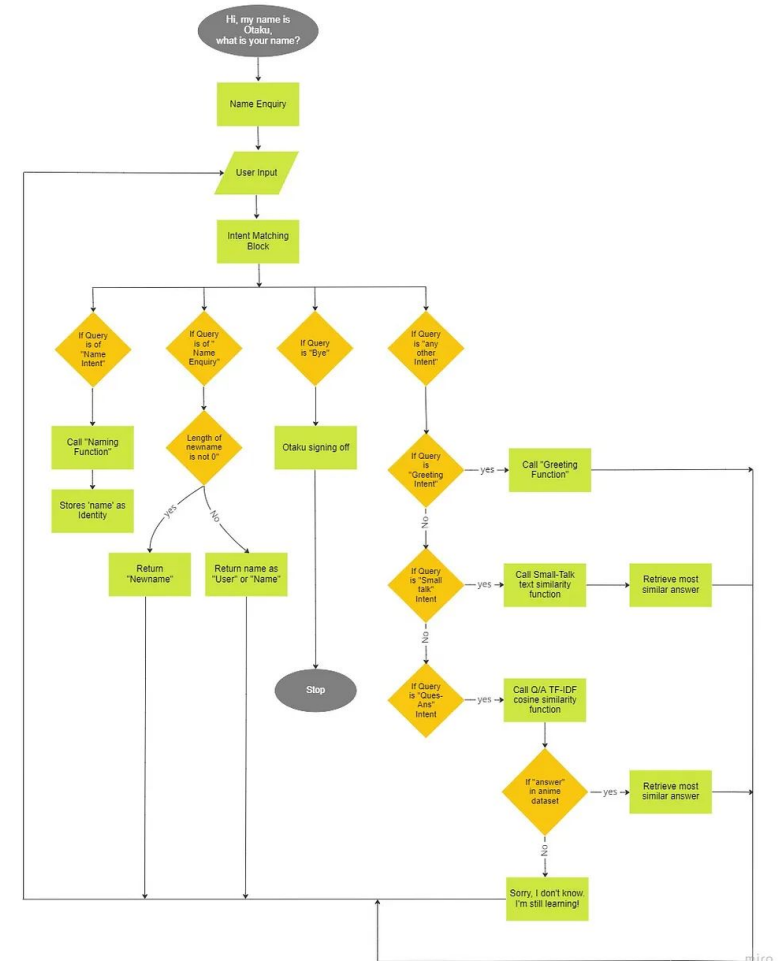
Peer Review & Evaluation

- *Present stakeholder maps and platform designs*
- *Rubric-based peer evaluation*
  - *Inclusivity: marginalized group access*
  - *Feasibility: deployment and maintenance*
  - *Ethics: privacy, transparency, accountability*
- *Feedback loop for refinement*

Assessment Criteria

- *Technical accuracy and systems integration*
- *Contextual relevance and user-centered design*
- *Ethical and sustainability considerations*
- *Team collaboration and clarity*
- *SDG 16.6: Transparent institutions*
- *SDG 10.2: Inclusive participation*

Looking Ahead

- Next session: Ethical Decision-Making in ICT Projects

COMING SOON

References & Resources

- Ushahidi

  https://www.ushahidi.com/

- Open311

  https://www.open311.org/about/

- SDG Mapping Toolkit (UNDP)

  https://www.sdgmapping.ch/