Welcome to the

BIM CODE·SA 7

COnvention for a Digital eSouth Africa

Laying the foundation for the digital transformation
of South Africa's built environment

AUTODESK

Raising the BIM tide

BIM COMM UNITY AFRICA

Co-facilitator, Dr Amanda Filtane –

Full member, in good standing: BIM Community Africa
Digital “Tech” Enthusiast
Constructor of optimum solutions
Lecturer of Construction Management
Coach of small businesses
Development agent for rural and township communities

pening remarks

Amanda leads with an active commitment to **philanthropy,** founding and supporting initiatives to upskill emerging professionals and companies, for inclusive, future-ready experts — all in pursuit of her shared vision **to build a computationally competitive and productive Africa.**

BIM CoDE•SA 7 – Moving from Dialogue to Delivery

BIMCommunityAfrica

OAECO Business Models

Key partners	Key activities	Value proposition(s) – key offering(s)	Client relationships	Client segments

% Input variables
Partners_suppliers = input("Enter value of key suppliers: ");
Partners_subbies = input("Enter value of key subbies: ");
Partners_other = input("Enter value of key other partners: ");
	% Input variables
	act_building = input("Enter value for GB: ");
	act_civil = input("Enter value for CE: ");
	act_constr_other = input("Enter value for other construction activities: ");
	act_constr_all = input("Enter value for all construction activities: ");
	act_non_construction = input("Enter value for non construction activities: ");
		% Input variables
		Construction_all = input("Enter all construction goods and services offered: ");
		input("Enter non-construction goods and services offered: ");
		Owner (Developer)
		Architectural Practice
		Engineering firm
		Construction firm
		Operator (AM, FM)
			% Input variables
			client_satisfaction = input("Enter client satisfaction value: ");
			client_repeat = input("Enter repeat/return client value: ");
				% Input variables
				client_public = input("Enter sales from public clients: ");
				client_private = input("Enter sales from private clients: ");

	Key resources
	% Input variables
	resource_financial = input("Enter financial resource: ");
	resource_physical = input("Enter physical resource: ");
	resource_human = input("Enter human resource: ");
			Distribution channels
			% Input variables
			Proc_designbidbuild = input("Enter sales from traditional procurement: ");
			Proc_designbuild = input("Enter sales from design and build: ");
			Proc_managementcontract = input("Enter sales from managementcontract: ");	

Cost models	Revenue streams

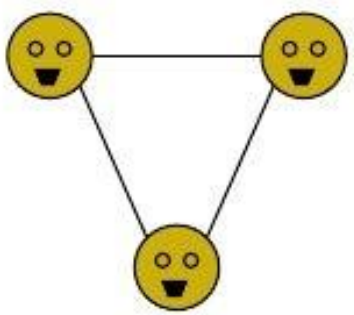
% Input variables
cost_building = input("Enter cost from GB: ");
cost_civil = input("Enter cost from CE: ");
cost_constr_other = input("Enter cost from other construction activities: ");
cost_constr_all = input("Enter cost from all construction activities: ");
cost_non_construction = input("Enter cost from non construction activities: ");
	% Input variables
	rev_building = input("Enter revenue from GB: ");
	rev_civil = input("Enter revenue from CE: ");
	rev_constr_other = input("Enter revenue from other construction activities: ");
	rev_constr_all = input("Enter revenue from all construction activities: ");
	rev_non_construction = input("Enter revenue from non construction activities: ");

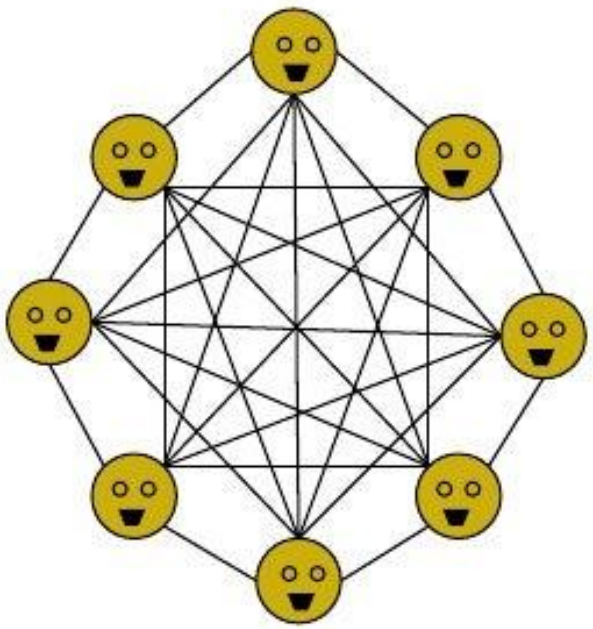
Communication Channels

Formula

- Number of communication channels

$$\frac{n \times (n - 1)}{2}$$





RICARDO VARGAS

Source

Core focus/function: Communication

- **Communication in the Project Management Context**
  PMBOK (Project Management Institute, 2021) identifies Communication Management as one of the 10 Knowledge Areas.
- Poor communication is a leading cause of project failure (Project Management Institute, 2021).
- Project Communication Management includes:
  - Plan Communication Management
  - Manage Communications
  - Monitor Communications
- **Why It Matters:**
- Supports stakeholder engagement, mitigates risk, aligns expectations, and ensures transparency (Kerzner, 2017).

CORE FOCUS OF LECTURE – COMMUNICATION

(AND INFORMATION MANAGEMENT)

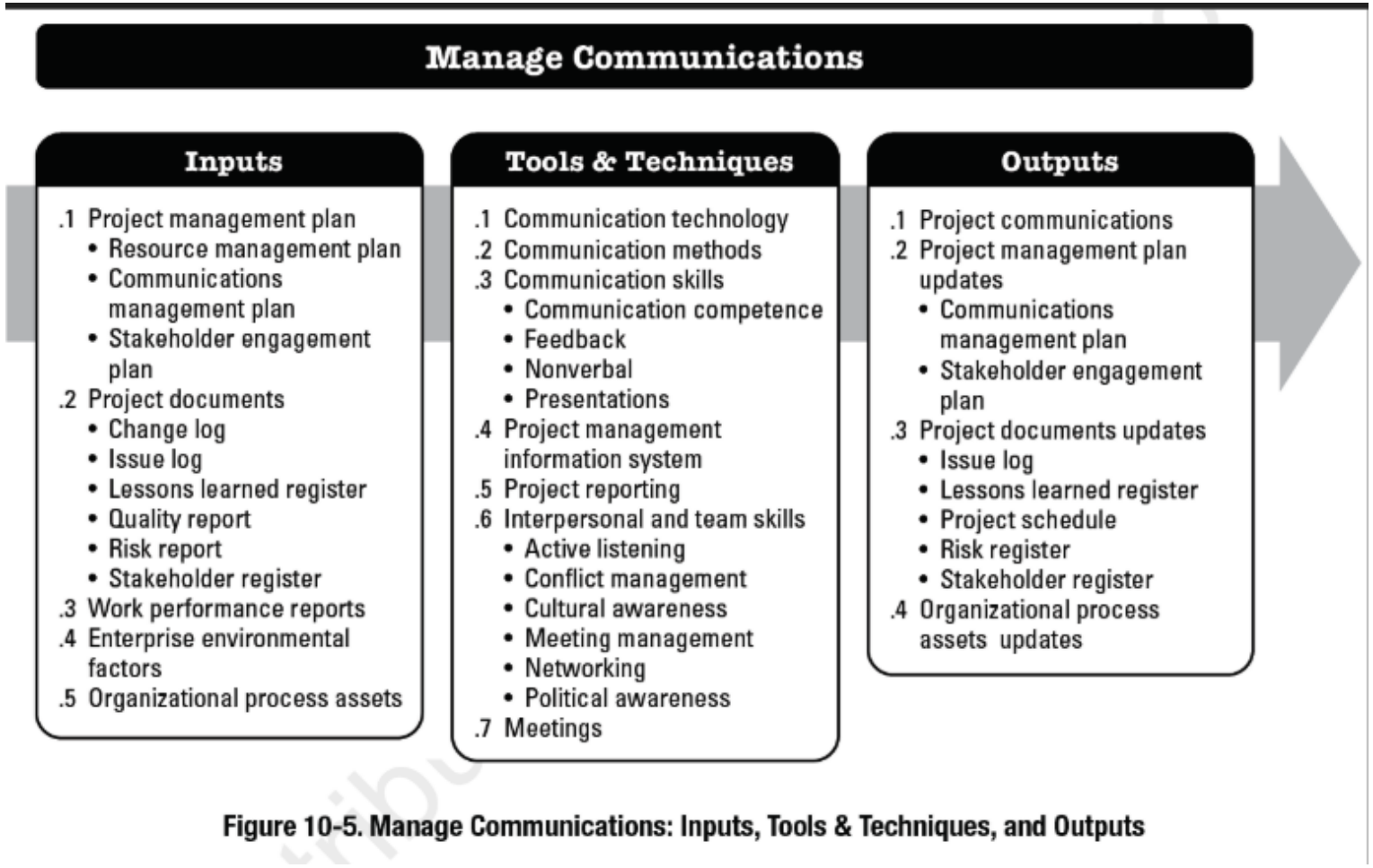
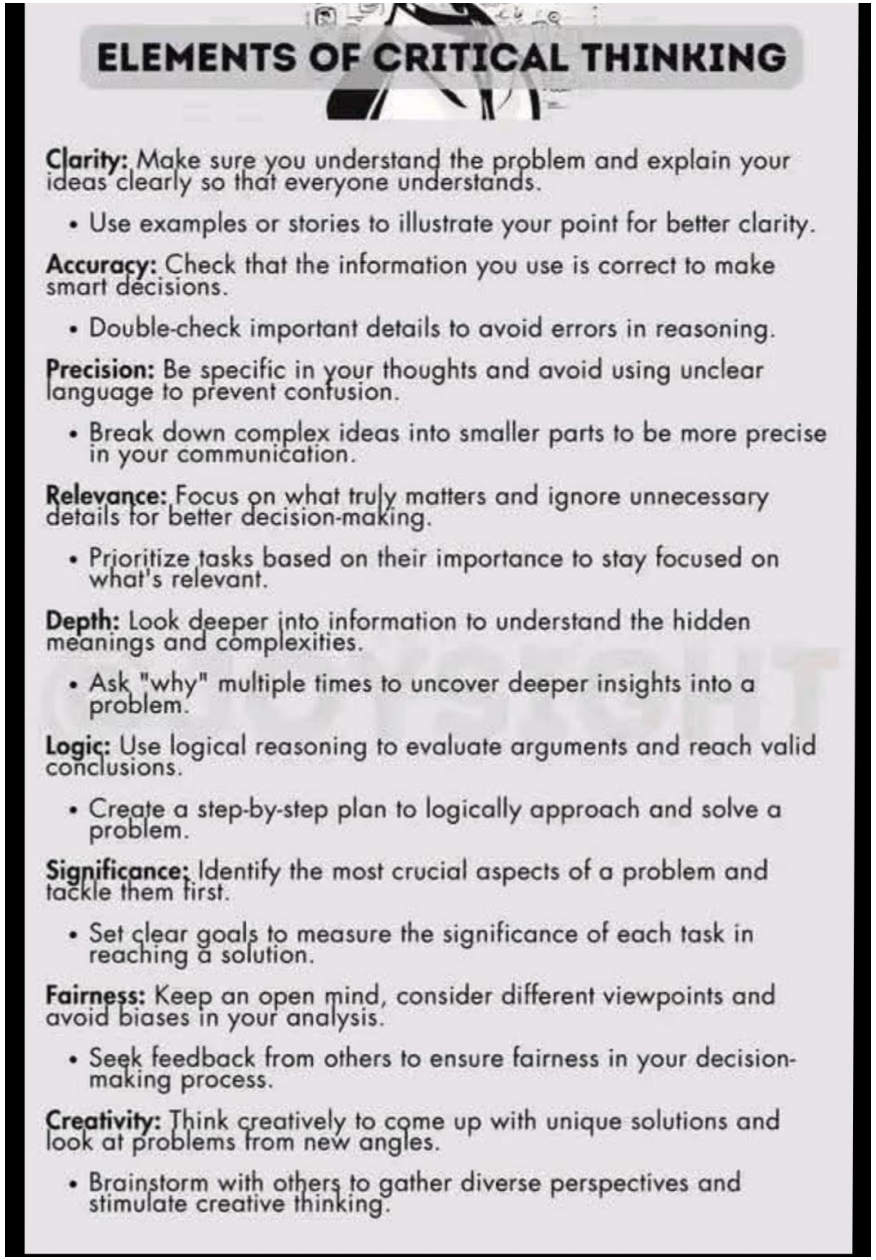


Figure 10-5. Manage Communications: Inputs, Tools & Techniques, and Outputs

Language Interpretation Understanding

- Human-human
- Human-machine
- Machine – machine



Theoretical foundations: communication

Sender-Receiver Model (Shannon & Weaver, 1949)

- Describes communication as a linear transmission:
  - Sender → Encoder → Channel → Decoder → Receiver
  - *Noise* disrupts the flow.
- Relevance: Identifies points where communication can fail in projects.

Transactional Model of Communication (Barnlund, 1970)

- Views communication as dynamic, with simultaneous sending and receiving.
- Includes feedback and shared meaning.
- Important for agile and cross-functional project teams.

Media Richness Theory (Daft & Lengel, 1986)

- Suggests the effectiveness of communication depends on the medium's richness:
  - Rich media (face-to-face, video calls) are best for complex tasks.
  - Lean media (email, memos) are suitable for routine information.
- Helps in choosing appropriate digital tools.

Communication Accommodation Theory (Giles, 1973)

- People adjust their communication style to align with their audience.
- Key in stakeholder communication, especially in multicultural teams.

Digital (OAECO) Design and Delivery

Discipline / Role	Stage Input & Output Data (ISO19650; LoD; IFC; COBie)	Awareness: Computational & Interoperable Data	Readiness: People, Process, Tech	Goal: High Quality & Productivity
Owner & Asset Managers	Input: Project requirements, asset strategy, O&M manuals Output: Asset info models (AIM), COBie datasets, digital twins	Understand interoperable formats (IFC, COBie) and computational queries for lifecycle management	Assign digital asset manager, define EIR, use secure CDE & FM platforms	Plan lifecycle value, future-proof data, improve asset uptime
Architectural	Input: Owner's requirements, context models, LoD 100–300 Output: Coordinated design models (IFC), COBie spaces, LoD 300–400	Awareness of geometry data, semantic data, design data supporting downstream processes	Appoint BIM lead, draft BEP, collaborate in CDE, model checking	Reduce design errors, better coordination, quality designs
Engineering	Input: Architectural BIM, LoD 200–300 Output: Detailed discipline models, analysis data, IFC exports, COBie systems	Design data supporting simulation, fabrication, ensuring interoperable handover data	Use clash detection, define engagement protocols, standard naming & data schemas	Enhance efficiency, reduce rework, high-quality deliverables
Construction	Input: Tender models, design intent models, LoD 300–400 Output: As-built models, 4D (time), 5D (cost) BIM, COBie asset updates	Computational schedules, cost data, field capture updates into CDE	BIM coordinator, site tools & drones, integrate CDE, monitor security	Shorter schedules, cost certainty, on-site productivity
Operators, Asset Managers, Facility Managers,	Input: As-built/AIM, LoD 500, COBie, IFC Output: Maintenance data, performance analytics, updated AIM	Data for FM systems, ensure updates align with COBie & IFC for maintainability	Define data handover standards, train FM teams, secure IoT integrations	Lower lifecycle cost, reliable asset performance, data-driven FM

1. Finalise and Formalise National Frameworks

Complete	- Complete South African National Annex to ISO 19650
Publish	- Publish standard EIR, BEP templates and RACI matrices
Collaborate	- Collaborate with SABS and CIDB to embed in national frameworks