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









Co-facilitator, Dr Amanda Filtane -

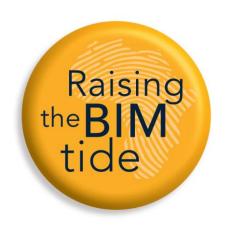
Full member, in good standing: BIM Community Africa
Digital "Tech" Enthusiast
Constructor of optimum solutions
Lecturer of Construction Management
Coach of small businesses
Development agent for rural and township communities

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

% Input variables
Partners_suppliers = input("Enter
value of key suppliers: ");
Partners_subbies = input("Enter valu
of key subbies: ");
Partners other = input("Enter value

Key activities

% 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:
");

Key resources

% Input variables
resource_financial = input("Enter
financial resource: ");
resource_physical = input("Enter
physical resource: ");
resource_human = input("Enter
human resource: ");

Value proposition(s) – key offering(s)

% Input variables
Construction_all = input("Enter all construction goods and services offered:
");
n:Owner (Developer)
input("Enter non-construction goods and services offered: ");

Architectural Practice

Engineering firm

Construction firm

Operator (AM, FM)

Client relationships

% Input variables client_satisfaction = input("Ente client satisfaction value: "); client_repeat = input("Enter repeat/return client value: ");

Client segments

% Input variables client_public = input("Enter sales from public clients: "); client_private = input("Enter sale from private clients: ");

Distribution channels

Proc_designbidbuild = input("Enter sales from traditional procurement");

Proc_designbuild = input("Enter sales from design and build: ");

Proc_managementcontract = input("Enter sales from

Cost models

```
% 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: ");
```

Revenue streams

% 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: ");

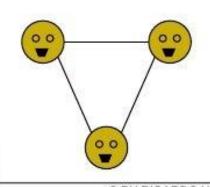
rev_constr_all = input("Enter revenue from all construction activities: ");

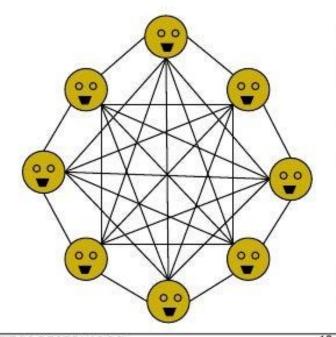
rev_non_construction = input("Enter revenue from non construction activities: ");

Communication Channels

Formula

Number of communication channels





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)

Manage Communications

Inputs

- .1 Project management plan
 - · Resource management plan
 - Communications management plan
 - Stakeholder engagement plan
- .2 Project documents
 - · Change log
 - Issue log
 - · Lessons learned register
 - · Quality report
 - Risk report
 - · Stakeholder register
- .3 Work performance reports
- .4 Enterprise environmental factors
- .5 Organizational process assets

Tools & Techniques

- .1 Communication technology
- .2 Communication methods
- .3 Communication skills
 - · Communication competence
 - Feedback
 - Nonverbal
 - Presentations
- .4 Project management information system
- .5 Project reporting
- .6 Interpersonal and team skills
 - · Active listening
 - Conflict management
 - · Cultural awareness
 - Meeting management
 - Networking
 - Political awareness
- .7 Meetings

Outputs

- .1 Project communications
- .2 Project management plan updates
 - Communications management plan
 - Stakeholder engagement plan
- .3 Project documents updates
 - Issue log
 - · Lessons learned register
- Project schedule
- · Risk register
- Stakeholder register
- .4 Organizational process assets updates

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

Language Interpretation Understanding

- Human-human
- Human-machine
- Machine machine



Clarity: Make sure you understand the problem and explain your ideas clearly so that everyone understands.

· Use examples or stories to illustrate your point for better clarity.

Accuracy: Check that the information you use is correct to make smart decisions.

Double-check important details to avoid errors in reasoning.

Precision: Be specific in your thoughts and avoid using unclear language to prevent confusion.

 Break down complex ideas into smaller parts to be more precise in your communication.

Relevance: Focus on what truly matters and ignore unnecessary details for better decision-making.

 Prioritize tasks based on their importance to stay focused on what's relevant.

Depth: Look deeper into information to understand the hidden meanings and complexities.

 Ask "why" multiple times to uncover deeper insights into a problem.

Logic: Use logical reasoning to evaluate arguments and reach valid conclusions.

Create a step-by-step plan to logically approach and solve a problem.

Significance: Identify the most crucial aspects of a problem and tackle them first.

 Set clear goals to measure the significance of each task in reaching a solution.

Fairness: Keep an open mind, consider different viewpoints and avoid biases in your analysis.

 Seek feedback from others to ensure fairness in your decisionmaking process.

Creativity: Think creatively to come up with unique solutions and look at problems from new angles.

 Brainstorm with others to gather diverse perspectives and stimulate creative thinking.

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

