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# A proposed model for construction project management communication in the South African construction industry

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## Abstract

Ineffective communication and the poor application of communication skills in construction project management lead to project outcomes that do not meet project objectives. The lack of a proper communication skills model for project management may contribute to ineffective project communication. This article reports the results of a study done to identify the most important project management communication skills and applications of communication that effective project managers should possess. A literature review on project management communication, project communication skills, applications of project communication and project management and leadership communication was done to develop a quantitative questionnaire for testing the importance of project management communication skills and applications of communication as perceived by a total of 97 construction-related professionals employed in construction project management, architecture, construction management, engineering and quantity surveying. Based on the findings, the communication skills and applications of communication expected from project managers were grouped into core (decision-making, problem-solving, listening, verbal competency, motivation, persuasion, meetings, writing competency, presentation, team-building and development, conflict management) and important skills (negotiation, trust, explaining, questioning, reinforcement, reflecting, public communication, humour and laughter, self-disclosure) which, together with managerial and leadership communication, form the main basis of the proposed model. The proposed model may assist construction project managers in developing their communication abilities, and through improved communication,

improve their management and leadership abilities, ensuring the successful execution of projects in the South African construction industry.

**Keywords**: Communication skills and leadership model, construction project management, leadership, South African construction industry

## Abstrak

Oneffektiewe kommunikasie en die swak toepassing van kommunikasie-vaardighede in konstruksieprojekbestuur lei tot uitkomste wat nie aan die doelwitte van 'n projek voldoen nie. Die gebrek aan 'n behoorlike kommunikasie-vaardigheidsmodel vir projekbestuur kan ook bydra tot oneffektiewe projek-bestuurskommunikasie. Hierdie artikel doen verslag oor die resultate van 'n studie wat gedoen is om die belangrikste projekbestuurkommunikasievaardighede en toepassings van kommunikasie waaroor effektiewe projekbestuurders moet beskik, te identifiseer. 'n Literatuuroorsig oor projekbestuurkommunikasie; projekkommuni-kasievaardighede; toepassings van projekkommunikasie en projekbestuursfunksies en leierskap in projekbestuur is gedoen om 'n kwantitatiewe vraelys te kon opstel vir die meting van die belangrikheid van projekbestuurkommunikasievaardighede en toepassing van kommunikasie soos waargeneem deur 97 konstruksie-verwante professionele persone. Hierdie professionele persone is werksaam in konstruksie-projekbestuur, argitektuur, konstruksiebestuur, ingenieurswese en bourekenkunde. Gebaseer op die bevindinge van die studie is die kommunikasievaardighede en toepassings van kommunikasie wat verwag word van projekbestuurders ingedeel in die volgende groepe: kern (besluitneming, probleemoplossing, luister, mondelinge vaardighede, motivering, oorreding, vergaderings, geskrewe vaar-dighede, aanbiedings, spanbou en ontwikkeling, konflikbestuur); belangrike (onderhandeling, vertroue, verduideliking, vrae, versterking, reflektering, openbare kommunikasie, humor en lag, self-bekendmaking); bestuurs- en leierskap-kommunikasievaardighede wat dan ook die belangrikste basis van die voor-gestelde model vorm. Die voorgestelde model kan bou-projekbestuurders help om hul kommunikasievermoëns te ontwikkel, en deur middel van verbeterde kommunikasie, word hul bestuur- en leierskapvermoëns verbeter om te verseker dat suksesvolle projekte in die Suid-Afrikaanse konstruksiebedryf uitgevoer word.

**Sleutelwoorde**: Kommunikasievaardighede en leierskapsmodel, konstruksie-projekbestuur, leierskap, Suid-Afrikaanse konstruksiebedryf

## 1.    Introduction

A literature review identified some models for communication, communication leadership, and leadership (Barrett, 2006: online; Burke, 2010: 49; Hoard, 2003: online; Knipe, Van der Waldt, Van Niekerk, Burger & Nell, 2002: 18; Kotzé, Berry & Verster, 2008: CD; Steyn, 2012: 286-287). Closer investigation showed that a specific model for construction project managers' communication skills and leadership may not exist. In order to address ineffective communication, it is important to determine the skills and applications of communication needed to communicate effectively, as communication is important for the successful completion of a project (Thomsett, 2010: 198). Skills cannot be applied without effective communication and, as Heldman (2003: 33) states, "the most important skills a project manager possesses are communication skills".

A proposed communication skills and leadership model may fill the void for a model that can be used by construction project managers as a possible enhancement tool for improved project communication as well as for improving their general communication skills. A literature study clarified project management communication, project communication skills, applications of communication in projects and project management, and leadership communication. This clarification was important to highlight some elements within these categories that may contribute to the design of the proposed model. In order to determine the elements needed to design the model, a research study was done to rank effective project communication skills and applications of communication for project managers from important to extremely important. Based on the findings, the communication skills and applications of communication expected from project managers were grouped into core and important skills, which, together with management and leadership communication, form the main basis of the proposed model.

## 2.    Project management communication

It is estimated that project managers and project team members spend approximately 90% of their working time engaged in some form of communication (Burke, 2010: 280). The foundation of any project manager's success lies in effective communication. PMBoK (in Burke & Barron, 2007: 346) defines effective communication as "ensuring the right person gets the right information at the right time". To understand the importance of the elements within the proposed model, it is important to determine and define different lines, levels and types of project communication as well as communication media that are considered in project communication.

### 2.1    Project communication lines

At the start of a project, it is important to determine the lines of communication and the methods of managing information (Fisk & Reynolds, 2010: 36). Smit & Cronje (2002: 372) propose two primary lines of communication, namely formal communication and informal communication.

Formal communication can be categorised as vertical, horizontal, or diagonal and may appear under various forms: spoken, written, direct, indirect, and so on (Alexander, 2015: online; Smit & Cronje, 2002: 372; Tubbs & Moss, 2008: 477-490). Vertical communication is the *upward* and *downward* communication flow between different hierarchical levels of the organisation (Alexander, 2015: online).

Downward communication starts at the top and flows down through to workers to provide information on goals, strategies, and policies (Campbell, 2011: 287; Fielding, 2005: 48-51; Posea, 2012: 201; Smit & Cronje, 2002: 371-372). The main function of upward communication is to supply information to the upper levels about what is happening at the lower levels (Campbell, 2011: 287; Fielding, 2005: 48-51; Smit & Cronje, 2002: 371-372). Horizontal/lateral communication takes place between people at the same level of the hierarchy (Alexander, 2015: online; Posea, 2012: 201). This formal communication does not follow the chain of command (Campbell, 2011: 287; Fielding, 2005: 48-51; Smit & Cronje, 2002: 371-372). Diagonal communication takes place between people at different levels of the hierarchy (Alexander, 2015: online; Campbell, 2011: 287; Fielding, 2005: 48-51; Posea, 2012: 201; Smit & Cronje, 2002: 371-372).

Informal communication uses channels such as the grapevine, rumours (Fielding, 2005: 52; Smit & Cronje, 2002: 373; Tubbs & Moss, 2008: 493), informal social groupings, and phatic communication to try to eliminate uncertainty, curiosity, or anxiety of some people from the project team (Van Staden, Marx & Erasmus-Kritzinger, 2002: 23-24).

## 2.2    Project communication levels

Le Roux, De Beer, Ferreira, Hübner, Jacobs, Kritzinger, Labuschagne, Stapelberg & Venter (1999: 286-287) and Dow & Taylor (2008: 44-47) suggest that project management communication takes place on internal and external communication levels.

Internal communication is the communication that takes place between project team members (Alexander, 2015: online). It is vital for regulating employee behaviour, innovation, integration, and information sharing (Dainty, Moore & Murray, 2006: 130; Kress, 2005: 30; Saks, 2006: 615).

External communication is communication between project team members and other project stakeholders (Alexander, 2015: online). Generally, this type of communication is prepared before being presented or sent to the receiving party. The focus is on the way in which the organisation manages its communication and conveys a particular image of the organisation to the outside world (Dainty, Moore & Murray, 2006: 130; Le Roux *et al.*, 1999: 286-287).

## 2.3    Types of project communication

In an attempt to understand communication in project manage-ment, it is useful to classify the types of communication within which people are involved in an organisation. Baker ([n.d.]: 1-15), Emmitt & Gorse (2003: 45) and Kreps (1989) divide project communication into five types:

- Interpersonal communication: According to Bambacas & Patrickson (2008: 52), "[i]nterpersonal communication explains 'the means' by which organisational activities, such as mana-ging, controlling, planning, and leading are delivered". Baker ([n.d.]: 5), Jha, 2010: 3-4, Robbins & Hunsaker (2003: 52-53) and Sethi & Seth (2009: 33) state that, although interpersonal communication can include oral, written, and non-verbal forms of communication, the term is by and large related to spoken communication that takes place between two or more individuals in person.

- Group communication: Emmitt & Gorse (2003: 45) and Barker & Angelopulo (2007: 95) define group communication as two or more people who interact with, and influence each other or different work groups communicating to each other.

- Mass communication: Emmitt & Gorse (2003: 45) define mass communication as messages sent through the media (television, radio, newspapers) to large audiences mainly to enhance public understanding and acceptance of projects (Jha, 2010: 4).

- Public communication: Public communication takes place when the project manager addresses a large known audience or the media (McCarthy, 2010: 263). Lectures, speeches and presentations are all forms of public communication. In public communication, feedback from the audience must be part of the communication process (Emmitt & Gorse, 2003: 48). The skill to develop and maintain effective public relations through communication is important for project managers' relationships with the public and the media (McCarthy, 2010: 263).

- Organisational communication: Goldhaber (1989: 17) defines organisational communication as "the process of crea-ting and exchanging messages within a network of inter-dependent relationships". These relationships can be internal (effective communications between managers and workers in different parts of an organisation); external (the way in which the organisation manages its communication processes

with the outside world) as well as formal and informal forms of interaction (Baker, [n.d.]: 5; Dainty, Moore & Murray, 2006: 130-131).

## 2.4 Methods of project management communication

Two communication methods are the push and the pull communication methods, suggested by Du Plessis, Jooste & Strydom (2001: 341).

Push communication is when information is sent to specific recipients, and users access and retrieve information at their discretion, *e.g.* letters, memos, reports, emails, faxes, voice mails, blogs, press releases, and so on (Brunt, 2013: 447). It is typically used when the recipients need the information and no immediate response is required (Du Plessis *et al.*, 2001: 341; Nielsen, 2010: online).

Pull communication is used for very large volumes of information and should be used when the communication is informational only. If the recipients do not read it, it will not affect the project. These methods include intranet sites, e-learning, lessons learned database, knowledge repositories, and so on (Brunt, 2013: 447).

## 2.5 Communication media/mediums

A communication medium is simply 'how' a message is sent to the receiver or the method used to communicate (Heldman, 2009). Dainty, Moore & Murray (2006: 64), Gillard & Johansen (2004: 23-29) and Schwalbe (2014: 418) note that, when deciding on the communication mediums, the project manager should consider the purpose of the communication, the receiver, and the type of information being shared, as messages are often more successfully conveyed if a variety of media are used (Torrington & Hall, 1998: 121).

Communication media in organisations have been widely examined in management literature. Dainty, Moore & Murray (2006: 65), Heldman (2009: 201), Posea (2012: 201), Le Roux *et al.* (1999: 286-287), Dow & Taylor (2008: 44-47) and Yan (2009: 43) classify communications media in the following generic types:

- Speech/verbal: Oral communication between individuals or groups. Can be formal (such as in meetings and focus groups) or informal, and face-to-face or *via* telecommunications media.
- Non-verbal: Present during some other forms of communication and implying meaning to what is being said. Can be deliberate or non-deliberate (such as dress code, gestures, appearance, or attitudes).

- Written: Usually official or formal (such as internal announce-ments, reports, decisions, plans, letters to people inside or outside the institution). Written information within project management provides a permanent record of the communication.
- Audiovisual: Graphical or audio-based media designed to convey a message more effectively (such as telephone, videoconferencing, teleconferencing, cellular telephone calls, sms (*i.e.* texting) and walkie-talkie conversations).
- Electronic: Increasingly popular method using innovations such as electronic mail to communicate rapidly between distributed individuals and groups.
- Visual: Communication takes place by means of presentations, DVDs and videos.

Each of these media/mediums can be expressed formally or informally depending on the circumstances and desire of the individual or group transmitting the message (Dainty, Moore & Murray, 2006: 65).

## 3.    Project communication skills

According to Goldsmith & Newton (2011: A165), there are various understandings of the nature of communication skills in the construction discipline. Widdowson (1978: 67) refers to communi-cation skills as the mode in which the communication system is realised. Dainty, Moore & Murray (2006: 5-6) refer to communi-cation skills specifically as those that project managers need in order to deal with individuals, small groups, large groups, and organisations. Goldsmith & Newton (2011: A165), Alexander (2015: online) and Zulch (2014: 677-680) note that, for the construction project manager, the ability or skill to communicate would include, among others, aspects such as trust and respect, objectivity and fairness, leading by example, motivation, accessibility, transparency, confidence, flexibility, clarity, integrity, competence, focus, and stability. Skulmoski & Hartman (2009: 242-243) and Zulch (2014: 677-680) add collaborate, explaining and questioning, listening, verbal competency, reflecting, meetings, writing competency and presentation skills, self-disclosure and humour, and laughter as part of communication skills for project managers. It is important to clarify these communication skills in order to understand the importance of the elements within the proposed model.

### 3.1 Trust and respect

Trust and respect are not a right; they are earned, and come from an experience of honesty, integrity, concern and expertise demonstrated by effective project managers (Andi & Simanjuntak, 2008: 111; Ray 2015: online; Turner & Muller, 2005: 51).

### 3.2 Objectivity and fairness

According to Alexander (2015: online) and Kliem, Ludin & Robertson (1997: 38), effective project leaders should actively listen to more than one side without bias. When they receive important information that they would rather not hear, they should work with key stakeholders to prioritise the way forward.

### 3.3 Leading by example

Leading by example demonstrates a leader's commitment to his/her work and provides guidance to subordinates on how effective performance can be achieved (Bandura, 1997). Strong project leaders make every effort to live by the same rules they expect of others, affirming to the team that they, too, walk the talk (Alexander 2015: online).

### 3.4 Motivation

Motivation includes all the attempts by the project manager to get members to the point where the team strives to do the best in order to achieve the goals (Baguley, 2010: 106; Kliem *et al.*, 1997: 38; Kroon, 1990: 11-12). The project manager is responsible for creating a culture of motivation by using direct communication links with team members, and for ensuring a safe working environment, basic personal comforts, the provision of training, and recognition of achievement (Warren, 1989: 99).

### 3.5 Accessibility

According to Alexander (2015: online), team members and stake-holders need to know that they can easily access their project leader and communicate freely and without barriers. Highly effective project leaders are never closed off.

### 3.6    Transparency

Transparency is the clear and open communication of project information to teams and customers through openness, communication, and accountability (Andersen, 2008: 250; Calero, 2011: online; DePaoli, 2011: 2). Transparency only works under conditions of trust where there are no hidden agendas or reading between the lines (Alexander, 2015: online; Franz & Sarcina, 2009: 88).

### 3.7    Confidence

According to Vocabulary.com ([n.d.]: online), confidence is "a feeling of trust and firm belief in yourself or others". Turner & Muller (2005: 50) note self-confidence as a trait of effective project managers, as it allows teams to work toward shared goals. Alexander (2015: online) warns that project leaders who are confident in their knowledge and abilities must not be arrogant, as this tends to make team members uncomfortable and reluctant.

### 3.8    Flexibility

Alexander (2015: online) states that great project leaders establish themselves as reliable communicators to develop credibility with project sponsors and flex and adapt during change.

### 3.9    Collaborate

McIntosh, Luecke & Davis (2008: 59) state that collaboration involves getting everybody's best efforts. This means that project managers may divide projects to the advantage of each team member's set of skills where everybody is willing to co-operate and share information, ideas and assets in order to help each other (Ray, 2015: online; Sweeney, 2010: online).

### 3.10    Explaining and questioning

According to Wragg & Brown (2001: 13), "[e]xplaining is the giving of understanding to others". Explaining means to simplify and provide an understanding of a problem to others (Hargie, 2007: 196). Fritzley & Lee (in Hargie, 2007: 121) describe questioning as a "major form of speech act in interpersonal communication", while Stenstroem (in Hargie, 2007: 121) reflects that "it is difficult to imagine a conversation without questions and responses". Explaining and asking questions is a fundamental part of communication and is an important skill for project professionals (Waterman *et al.*, 2001: 477). The project manager has to communicate information that is clear

and comprehensible to the project team members. To explain and allow team members to ask questions helps them understand the project goals (Dow & Taylor, 2008: 27; Clements & Gido, 2012: 384).

### 3.11 Listening

The ability to master the art of proper listening is an important skill for the construction project manager (Van Staden *et al*., 2002: 42). Listening was traditionally viewed as the ability to perceive and process information presented orally (Hargie, 2007: 267). Sweeney (2011: online) and Odusami (2002: 61) state that the ability to listen effectively is a core skill needed to listen to and understand the words and the meaning behind the words, not interrupting or letting the mind wander, by asking questions to ensure understanding and by observing signals such as reinforcement (Bostrom, 1997: 240).

### 3.12 Verbal competency

According to Laufer, Shapira & Telem (2008: 81), construction project managers are engaged in oral communication for approximately 76% of the time; therefore, effective verbal communication is a skill that a construction manager should possess (Riley, Horman & Messner, 2008: 146).

### 3.13 Reflecting

Reflecting is closely associated with listening and is an interactive process where the whole message is repeated as it was said (Hargie, 2007: 165; Pace, Peterson & Burnett, 1979: 157). Project managers who have the ability to reflect words and feelings and who can clarify that these words and feelings have been understood correctly help team members direct their thoughts and encourage them to continue speaking (Pace *et al.*, 1979: 167).

### 3.14 Clarity

To ensure information clarity, the project managers must gear communication methods, mediums and styles toward their audience so that all communications on the project are clear and complete (Calero, 2011: online; Alexander 2015: online; Barry, 2010: online). In practice, this means that project managers should have the ability to take something complex and make it simple in order to reach audiences at different levels (Alexander 2015: online).

### 3.15   Integrity

According to Barry (2010: online), the actions, and not the words used by project leaders set the *modus operandi* for the team. Integrity is a demonstration of, and commitment to ethical practices. Based on integrity, good project managers create standards for ethical behaviour that is important in project management.

### 3.16   Competence

The Businessdictionary ([n.d.]: online) defines competence as "[a] cluster of related abilities, commitments, knowledge, and skills that enable a person (or an organisation) to act effectively in a job or situation". Simply put, project manager competence means that everybody must believe that a person knows what s/he is doing by demonstrating the ability to challenge, inspire, enable, model, and encourage (Barry, 2010: online).

### 3.17   Focus and stability

Not all projects go as planned. During these times, project teams rely on the project manager(s) to be rational, remain calm under pressure, and be able to make sound judgement in order to find the right solutions that best support the overall strategic goals of the project (Alexander, 2015: online).

### 3.18   Meetings, writing competency and presentations

Meetings are the construction project manager's principal forum to manage the project and communicate with the team members and stakeholders (Burke & Barron, 2007: 349; Harrin, 2015: online). Construction project meetings are important for sharing information and exchanging data; solving problems, brainstorming, generating ideas, options and alternatives; decision-making, selecting a course of action, gaining support and alternatives; planning and execution, to determine the what, who, when, how, where and why; progress, evaluation, monitoring, measuring, reviewing and forecasting, as well as control (Burke & Barron, 2007: 349; Burke, 2007: 213).

Elder (1994: 46, 332) and Kliem *et al*. (1997: 38) suggest that the project manager familiarise him-/herself with the principles of effective writing processes. Written reports, letters, instructions, and minutes of meetings are essential for the smooth running of projects and may be used as evidence in the event of a dispute (Emmitt & Gorse, 2003: 124).

Presentations may be delivered to the client to explain the project, to senior management to report progress, or to the board of directors to justify cost or time issues (Steyn, 2008: 321). A powerful presentation with visual aids may create a powerful impact and give the perception of someone who knows the information presented (Burke & Barron, 2007: 279).

### 3.19    Self-disclosure

Self-disclosure is when people reveal information such as names, person's attitudes, values, personality, and skills that help people get to know each other (Hargie, 2007: 230; Kasouf, Celuch & Bantham, 2006: 40). The skill of self-disclosure is important in project communication, because a project manager's self-disclosure fosters trust, as it leads to shared perceptions and concerns among team members (McManus, 2006: 51).

### 3.20    Humour and laughter

Using humour and laughter to convey a message involves the cognitive, emotional, physiological and social aspects thereof (Hargie, 2007: 294). Fourie (1988: 77) states that a method for the correct use of humour is to establish a humorous mood. Humour and laughter are important factors that give team members a sense of belonging and acceptance, and that foster caring and mutual support (Yalom, Bloch & Crouch in Hargie, 2007: 303). The ability to see the funny side of projects is an important communication skill for project managers, because, if used appropriately, humour can help a manager handle stress and break tension (Gido & Clements, 2012: 331; Harrin, 2015: online).

## 4.    Applications of communication

Goldsmith & Newton (2011: A165), Alexander (2015: online), Chaturvedi & Chaturvedi (2011: 181-193) and Zulch (2014: 677-680) note that it is important for the construction project manager to have the ability to apply communication correctly when needed. This ability would then, among others, include aspects such as decision-making, problem-solving; conflict management; team development and team-building; negotiation; persuasion, and reinforcement.

## 4.1    Decision-making

Decision-making is a process to gain collective support and team commitment for a solution (Burke & Barron, 2007: 71; Shockley-Zalabak, 1991: 303; Van der Merwe, 2009: online). Research by Gorse & Emmitt (2007: 1209) states that decision-making is an essential component of a project manager's set of application skills. In a study by Odusami (2002: 61), decision-making was ranked the most important skill for effective project managers. Patel (2010: online) states that a project manager "has to exercise independent decision making and not be biased toward the employer".

## 4.2    Problem-solving

Problem-solving is a process of analysing a problem and identifying a number of possible solutions (Burke & Barron, 2007: 71; Shockley-Zalabak, 1991: 303). Problem-solving involves a combination of problem definition (technical, managerial, or interpersonal) and decision-making (Edum-Fotwe & McCafer, 2000: 114). In a study by Odusami (2002: 61), problem-solving was ranked the fifth most important skill for effective project managers.

## 4.3    Conflict management

Conflict is often the result of uncertainty or miscommunication (Morris, 2008: 216; APM Body of Knowledge, 2006: 108). Conflict that is managed brings concerns into the open, raises otherwise suppressed viewpoints, and may clear up misunderstandings and uncertainty (APM Body of Knowledge, 2006: 108; Clearly, 2008: 46). The conflict management methods or options that the construction project manager can apply during communication and specifically with negotiations include confronting, compromising, accommodating (APM Body of Knowledge, 2006: 108; Clearly, 2008: 46-47), forcing, withdrawing (APM Body of Knowledge, 2006: 108), avoiding, collaborating (Clearly, 2008: 46-47; Ellis, 1999: 58-60, 2009: 68-69), compromising, bottom line (Ellis, 1999: 58-60, 2009: 69), shift perspectives, conflict transformation (Morris, 2008: 220-221), integrating, obliging, and dominating (Emmitt & Gorse, 2003: 169-170). Effective conflict management requires seeking a win-win situation, stipulating proactive conflict management strategies, using effective negotiation and communication, as well as appreciating cultural differences among project stakeholders (Verma, 1998: 372).

## 4.4     Team-building and team development

According to Pryke & Smyth (2006: 166) and Van der Merwe (2009: online), effective project managers develop and build successful teams by paying attention to team-building and information exchange within the team. The project manager may use the skills of effective communication, leadership and motivation to build successful teams that were created from grouping individuals into teams (Zulch, 2012: 122; Barry, 2010: online).

## 4.5     Negotiation

Negotiation is a process of bargaining aimed at reaching an agreement with project stakeholders in order to obtain specific resources, subcontractor prices, vendor delivery schedules, generating information, and accomplishing tasks (Clements & Gido, 2012: 312; Edum-Fotwe & McCafer, 2000: 114; Van der Merwe, 2009: online). Burke & Barron (2007: 301, 103) and Harrin (2015: online) state that, to be a successful project manager, negotiation techniques (skills) must be developed and used to achieve the best deals with functional managers, clients and suppliers. Ottosson (2013: 258) states the following: "Make sure to be regarded as an equal and skilful negotiator."

## 4.6     Persuasion

Persuasion is the art of guiding, encouraging, convincing, and directing team members towards a form of preferred behaviour, attitude, or belief (Emmitt & Gorse, 2003: 50). The power of persuasion is an important part of the project manager's leadership style to obtain cooperation between project team members (Burke & Barron, 2007: 275). The ability to change the views of others through motivation and persuasion should be viewed as one of the most fundamental applications of communication (Dillard & Marshall, 2003: 480).

## 4.7     Reinforcement

Reinforcement is a process of encouraging a pattern of behaviour. It involves a stimulus which, when linked to a response, will most likely lead to that response being repeated (Hargie, 2007: 150). Repetition of positive reinforcement such as praise and encouragement tells team members that they do well and that their inputs are appreciated (DuBrin, 2008: 386; Pace *et al.*, 1979: 156).

## 5.    Management communication

Management is based on the management functions of planning, organising, leading, coordinating, activating, controlling, communication, motivation, delegation, staffing, disciplining, and decision-making (Zulch, 2012: 10-11). For these functions to be effectively managed, managers need effective pro-active communication (Kroon, 1990: 11).

Bell & Martin (2008: 130) define managerial communication as "the downward, horizontal, or upward exchange of information and transmission of meaning through informal or formal channels, enabling managers to achieve their goals". Managerial communication is thus a function that helps managers communicate with each other as well as with employees within the organisation (Rosenau & Githens, 2005: 13).

Managerial communication is a key skill (Vosough, 2012: 9294) that project managers need in order to interact with individuals and to manage groups effectively (Zulch, 2012: 150). Managerial communication such as the use of expression, letter writing, effective listening, reporting, coaching, mentoring, interaction and negotiation techniques, skills related to creativity such as courage in new thinking and risk-taking (Munter, 1993 in Bell & Martin, 2008: 130) begins with emotional intelligence or interpersonal skills and an understanding of crosscultural differences needed to interact effectively with others as individuals or groups (Barrett, 2006: 187).

## 6.    Leadership communication

Leadership is a vital element of project management competency, of which communication is a vital component (Handy, 1993: 117; Campbell, 2011: 287).

Leadership communication involves the expansion of managerial skills to those abilities needed to lead an organisation and address a broader community (Zulch, 2012: 150). Leadership, as a project communication skill, is considered important and becomes even more complex, because the higher the level of leadership during the production and management of projects, the higher the demand for communication competence (Hackman & Johnson, 2013: 22; Zulch, 2012: 150). It becomes even more important when leaders face both internal and external stakeholders (Barrett, 2013: 192). This means that leaders become the face of the organisation; they should think about how to create a positive image through communication with diverse audiences within and outside the organisation (Barrett, 2011: 16).

Leadership communication drives results, and enables leaders and followers to work together more efficiently, because they understand the issues and know what has to be done in order to accomplish their goals (Hackman & Johnson, 2013: 11; Clements & Gido, 2012: 304; Steyn, 2012: 269; Belzer, in Stevenson & Starkweather, 2009: 665; Du Plessis, 2009: online; Egeland, 2010: online; Steyn, 2008: 250-251).

According to Hauptfleisch & Siglé (2004: 57), the project manager very specifically requires leadership skills and not only management ability. Campbell (2011: 287) states that "good communication and strong leadership go hand in hand". Project managers succeed by producing projects on time and within budget as well as by effectively managing the interaction and communication between people and organisations.

In order to understand the difference between management com-munication and leadership communication, it is important not to equate the concepts management and leadership. Leading differs from managing when it comes to creating an agenda, developing a human network for achieving the agenda, and executing the agenda. While the leader sets the goals, the manager sets the objectives to accomplish the goals (Hackman & Johnson, 2013: 33).

## 7. Research

This empirical research project was an opinion study of people employed in construction-related professions. They rated the impor-tant communication skills and applications of communication that construction project managers should possess. The structured survey questionnaire invitations were sent via e-mail. For this investigation, an e-mail distribution method gave the opportunity to access a larger group of potential research participants and the data could be collected across the entire country.

### 7.1 Sampling method

A combined list of 1,400 members, registered in South Africa, was obtained from official bodies of the Association of South African Quantity Surveying; Association of Construction Project Managers; the South African Association of Consulting Engineers; Master Builders of South Africa, and Institute of Landscape Architects of South Africa. The list was stratified between those members involved in quantity surveying (427), project management (293), engineering (290), building contracting (110), and architects (280). A simple random sampling selecting method resulted in a sample size of

302 representing quantity surveyors (90), project managers (63), engineers (62), building contractors (26), and architects (61).

## 7.2 Sample size

The sample size for construction-related professionals was calculated in accordance with the Table recommended by Krejcie & Morgan (1970: 608). The Table gives recommended sample sizes for general research activities, applicable to any defined population. From the Table, the recommended sample size for a population of 1,000 is 278, for 10,000 it is 370, and for 1,000,000 it is 384. This recommendation validates the sample size of 302 as efficient for the population of 1,400.

## 7.3 Data collection

A structured questionnaire was distributed electronically via email to a total randomly selected sample of 307 construction-related professionals in South Africa. Two weeks later, the importance of the research was communicated to the potential respondents via telephone in an attempt to improve the response rate. The project management communication topics used in the questionnaire were extracted from reviews of the literature and resulted in the formulation of a questionnaire divided into two sections, namely respondent's profile, and the level of importance of communication skills and applications of communication that a project manager should possess. From the categories, the author selected the following elements to be tested and included in the proposed model: Types of project communication (Public and mass communication); Project communication skills (Listening, Verbal competency, Motivation, Meetings, Writing competency, Explaining, Trusting, Presentation, Questioning, Humour and laughter, Self-disclosure); Applications of communication (Decision-making and problem-solving, Conflict management, Team development and team-building, Negotiation, Persuasion, Reinforcement, Reflecting); Leadership communication (Leadership).

To reduce the respondent's bias, closed-ended questions were preferred (Akintoye & Main, 2007: 601).

## 7.4 Response rate

Ninety-seven (97) completed questionnaires were returned, resulting in a response rate of 32%. According to Moyo & Crafford (2010: 68), contemporary built-environment survey response rates range between 7% and 40%, in general. It is significant in respect of the

reliability of the response rate that the majority of the responses received were from project managers. However, the responses from the project managers did not distort the response data.

## 7.5 Data analysis and interpretation of findings towards the proposed model

A 5-point Likert scale was used to obtain the opinions of the respondents and to analyse the results. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling, 1997; Burns & Grove, 1997). These ordinal scales measure levels of agreement/disagreement. For the purpose of analysis and interpretation, the following scale measurement was used regarding mean scores, where 1 is not important (>1.0 and ≤1.8), 2 fairly important (>1.8 and ≤ 2.6), 3 important (>2.6 and ≤ 3.4), 4 very important (>3.4 and ≤ 4.2), and 5 extremely important (>4.2 and ≤ 5.0). The data were captured using the SPSS program, upon which the findings were reviewed against the foregoing literature review.

## 8. Results and findings

### 8.1 Respondents' profile

The first part of the questionnaire contained questions on the demographic profile of the respondents who are in the best position to comment on the communication skills and applications of communication that project managers should possess. Table 1 shows the professions of the respondents and Table 2 shows the years of experience in a profession. The majority of the responses (52.6%) were received from project managers and quantity surveyors. Of the respondents, 30% did not complete the question on the years of experience in a profession. The valid cases showed that 42% of the professionals have more than 10 years' experience in their professions, of whom 13.4% have 25 years or more experience. There is a reasonable proportional distribution in the number of years' experience of respondents; 42% of the respondents have between zero and five years' experience; nearly half of the valid respondents have between six and fifteen years' professional experience.

Table 1:    Respondents' profile

| *Profession of respondents* | *Number of respondents in this profession* | *Percentage (%) of respondent in this profession* |
|---|---|---|
| Quantity surveying | 25 | 25.8 |
| Engineering | 11 | 11.4 |
| Architecture | 10 | 10.3 |
| Construction management | 5 | 5.1 |
| Construction project management | 10 | 10.3 |
| Project management | 26 | 26.8 |
| Other | 10 | 10.3 |
| **Total** | **97** | **100** |

Table 2:    Respondents years of experience in profession

| *Profession* | *Years of experience in profession* N of valid cases = 68 (70%) N of incomplete profiles = 29 (30%) Total N = 97 (100%) | | | | | | | *Total valid cases* |
|---|---|---|---|---|---|---|---|---|
| | *Years not indicated on profile* | *0-5* | *6-10* | *11-15* | *16-20* | *21-25* | *25+* | |
| Quantity surveying | | 6 (46%) | 2 (15%) | 1 (13%) | 0 (0%) | 1 (13%) | 3 (23%) | **13** |
| Engineering | | 6 (66%) | 1 (11%) | 1 (11%) | 0 (0%) | 0 (0%) | 1 (11%) | **9** |
| Architecture | | 2 (50%) | 0 (0%) | 0 (0%) | 0 (0%) | 1 (25%) | 1 (25%) | **4** |
| Construction management | | 2 (50%) | 2 (50%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | **4** |
| Construction project management | | 0 (0%) | 1 (10%) | 4 (40%) | 1 (10%) | 2 (20%) | 2 (20%) | **10** |
| Project management | | 10 (45%) | 4 (18%) | 4 (18%) | 2 (9%) | 1 (4%) | 1 (4%) | **22** |
| Other related professions | | 3 (50%) | 1 (16%) | 0 (0%) | 1 (16%) | 0 (0%) | 1 (16%) | **6** |
| Incomplete profiles | 29 (30%) | | | | | | | |
| **Total** | **29** | **29** | **11** | **10** | **4** | **5** | **9** | **68** |
| Total (%) | (30%) | (42%) | (16%) | (14.9%) | (5.9%) | (7.8%) | (13.4%) | (70%) |

## 8.2 Importance levels of communication skills and applications of communication

Based on the scale measurement used regarding mean scores, where 1 is not important (>1.0 and ≤1.8), 2 fairly important (>1.8 and ≤ 2.6), 3 important, (>2.6 and ≤ 3.4), 4 very important (>3.4 and ≤ 4.2), and 5 extremely important (>4.2 and ≤ 5.0), the results in Table 3 show the mean scores for the importance levels of project manager communication skills and applications of communication as perceived by the respondents.

Table 3:   Communication skills and applications of communication of project managers

| Communication skills and communication applications | Response (%) (N=97) | | | | | Average mean score | Ranking |
|---|---|---|---|---|---|---|---|
| | 1 Not important…………5 Extremely important | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | | |
| Leadership | 0 | 1.0 | 6.2 | 20.6 | 69.2 | 4.5 | 1 |
| Decision-making and problem-solving | 0 | 1.1 | 7.2 | 20.6 | 68.1 | 4.5 | 2 |
| Listening | 0 | 0 | 15.4 | 33.0 | 48.6 | 4.2 | 3 |
| Motivation | 0 | 1.0 | 7.2 | 43.3 | 45.5 | 4.2 | 3 |
| Verbal competency | 0 | 1.0 | 17.9 | 37.5 | 40.6 | 4.2 | 3 |
| Conflict management | 0 | 3.1 | 15.5 | 34.0 | 44.4 | 4.1 | 4 |
| Meetings | 0 | 0 | 15.5 | 42.2 | 39.1 | 4.1 | 4 |
| Team development and team-building | 0 | 4.1 | 9.3 | 45.4 | 38.2 | 4.1 | 4 |
| Writing competency | 0 | 1.0 | 14.4 | 46.4 | 35.2 | 4.1 | 4 |
| Negotiation | 0 | 4.1 | 16.5 | 36.1 | 40.3 | 4.0 | 5 |
| Explaining | 1.1 | 4.1 | 8.2 | 43.3 | 40.3 | 4.0 | 5 |
| Questioning | 0 | 10.7 | 15.4 | 43.3 | 27.6 | 3.9 | 6 |
| Trusting | 0 | 3.0 | 19.6 | 42.2 | 32.2 | 3.9 | 6 |
| Presentation | 0 | 3.2 | 23.7 | 38.2 | 31.9 | 3.8 | 6 |
| Persuasion | 0 | 2.1 | 26.8 | 38.2 | 29.9 | 3.8 | 6 |
| Reinforcement | 1.0 | 5.2 | 18.5 | 43.5 | 28.9 | 3.8 | 6 |
| Public and mass communication | 4.1 | 7.2 | 37.2 | 30.9 | 17.6 | 3.4 | 7 |
| Humour and laughter | 5.2 | 13.4 | 33.0 | 37.1 | 8.3 | 3.2 | 8 |
| Reflecting | 10.3 | 8.2 | 34.0 | 34.0 | 10.5 | 3.1 | 9 |

| Communication skills and communication applications | Response (%) (N=97) | | | | | Average mean score | Ranking |
|---|---|---|---|---|---|---|---|
| | 1 Not important............5 Extremely important | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | | |
| Self-disclosure | 20.6 | 28.9 | 21.6 | 20.6 | 5.3 | 2.5 | 10 |
| Average | | | | | | 3.8 | |

Rated extremely important, the following communication skills and applications of communication were identified as the core communication skills and applications within the proposed model: decision-making and problem-solving (Ms=4.5); listening and verbal competency as well as motivation and persuasion (Ms=4.2); meetings, writing competency and presentation; team-building and team development as well as management of conflict (Ms=4.1).

Rated very important or important, the following communication skills and applications of communication were identified as the important communication skills and applications elements within the proposed model: negotiation and explaining (Ms=4.0); questioning and trusting (Ms=3.9); presentation, persuasion and reinforcement (Ms=3.8); public communication (Ms=3.4); humour and laughter (Ms=3.2); reflecting (Ms=3.1), and self-disclosure (Ms=2.5).

Leadership (Ms=4.5) was rated the highest communication skill and, together with management communication skills, forms the other elements within the proposed model.

## 9. Proposed model for construction project management communication

With the literature and empirical reviews as foundation, a model is proposed that is viewed as an integrated system with communication as fundamental core, since the research demonstrated that communication skills and applications of communication support sound management and strong leadership.

### 9.1 Communication skills and leadership model

Figure 1 illustrates the proposed Communication Skills and Leadership Model for Construction Project Management. The model is viewed as an expanding circle with communication centre to leadership, like a pebble dropped in water. Communication influences all activities related to management and leadership. The effectiveness of communication is again influenced by the level of core

communication skills and applications of communication, indicated in Figure 1 from A to F, from decision-making and problem-solving to conflict management, as well as the important communication skills and applications of communication indicated in Figure 1 from 1 to 6, from negotiation and trust to self-disclosure. The model consists of communication as the foundation with four circles around this core. The first circle constitutes the core communication skills and applications of communication; the second circle, the important communication skills and applications of communication; the third circle, management, and the fourth circle, leadership.
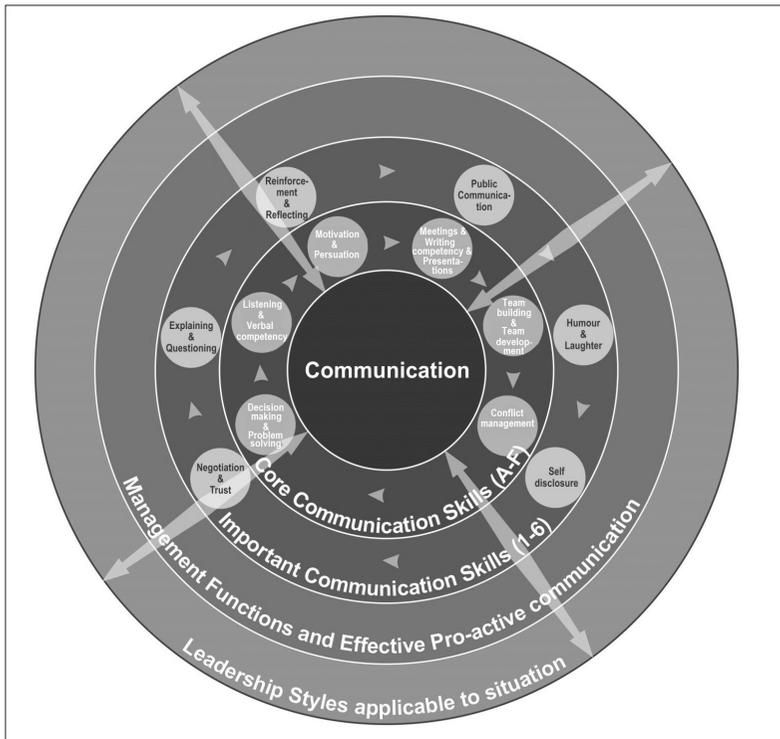


Figure 1:     Communication skills and leadership model for construction project management

Source:     Author's own design

Communication is regarded as the foundation and starting point of all activities in the construction project management industry. This core supports the following circles: core communication skills and applications of communication, important communication skills

and applications of communication, management functions and effective pro-active communication, and leadership styles to be applied, in other words the situation based on sound communication.

### 9.1.1 Core communication skills and applications of communication

The first circle, A to F, following the communication foundation, is shown as a circle and in a sequence supported by the literature reviewed, but in combinations; this is sensible, since some of the managerial skills are sequential and are closely linked. The core communication skills and applications of communication strengthen and enhance communication and will assist the construction project manager to communicate more effectively. The sequence starts with A, decision-making and problem-solving, as the most important core communication skill and applications of communication skill set. A construction project manager needs to make sound decisions and solve problems as well as communicate them well in order to enhance communication interaction and understanding of management and leadership requirements to the advantage of the project.

Decision-making and problem-solving is followed by the combination of listening and verbal competency (B). The construction project manager cannot execute a project successfully without the skill of verbal competency in the form of discussions, orders, briefings, and instructions. Effective listening forms part of verbal competency and involves not only listening to what is being said, but also having discussions and conversations in order to achieve results.

Third in the sequence is C, motivation and persuasion. The project manager has to motivate team members through communication, and persuade them to achieve the objectives of the project. The project team needs guidance, encouragement, convincing, and direction in order to perform well.

The above is followed by meetings, writing competency and presentation (D). Meetings are used to inform, reach decisions, and discuss aspects concerning the project and are the project manager's principal forum to manage the project and communicate with the team members and stakeholders. The decisions at meetings are recorded in writing. Written reports, letters, instructions, minutes, specifications, bills of quantities, preambles, preliminaries, certificates and electronic communication are essential for the smooth running of projects and are used as evidence in the event of disputes and conflict. Presentations are also used in conjunction with mostly written

reports. Written communication serves as evidence for reference purposes during the project.

Fifth in the sequence of the first circle is E, the core application of communication, team-building and team development. This application focuses on developing people as individuals or as groups, as well as the project team, and aims to achieve project goals and objectives.

The sixth and last application of communication skill in the sequence is F, management of conflict. During the management of a project, the construction project manager often needs to address differences and disputes that may affect the project's objectives and success. Effective application of communication skills may resolve conflict and may lead to an improved project environment.

### 9.1.2 Important communication skills and applications of communication

The second circle, 1 to 6, shows the important communication skills in sequence and, as with A to F, is supported by the study. This set of skills supports and strengthens the core communication skills and applications of communication. First, negotiation, as an important application of communication, ensures that agreements are reached with stakeholders, to the advantage of the project. Trust between parties during a negotiation process is important in order to ensure continuous activity and performance.

Next in the sequence of the second circle of important communi-cation skills and applications of communication are explaining and questioning. The project manager cannot execute a project without explaining the expectations to the project team members and allowing them to question decisions and explanations; this will support harmony and the team's understanding of the project objectives.

Allowing team members to repeat the information explained to them indicates understanding and reflects comprehension of the conversation. Thus, repeating the information that was presented is the third important communication skill in the sequence.

Fourth in the sequence is public communication. A project manager sometimes needs to provide information to the stakeholders and public regarding the project in order to ensure support for, and understanding of the project.

Humour and laughter follow public communication. The construction project manager can use humour and laughter effectively to defuse a difficult situation and to create an atmosphere where people are

at ease to have open discussions about problems, solutions and project issues.

Sixth in the sequence of the second circle of important communication skills is self-disclosure; revealing personal information helps people know each other and enables them to work together effectively.

### 9.1.3 Management

The third circle represents management. Effective management is based on the management functions of planning, organising, leading, coordinating, activating, controlling, communication, motivation, delegation, staffing, disciplining, and decision-making. The core and important skills A to F and 1 to 6 reinforce management's structural application as an important skill. Management directs and structures activities through functions, while leadership, the last circle, combines project execution, operations and production by means of communication as fundamental activity.

### 9.1.4 Leadership

The circle leadership is very important to the construction project manager who needs the skills of corporate and general communication in order to communicate effectively as a leader. Leadership strengthens and integrates communication of construction project management in terms of effectiveness, comprehensibility, team-building and execution. The public views the project leader as the face of the project.

It is proposed that if all areas of communication, from the six core communication skills and applications of communication to the six important communication skills and applications of communication, and effective management and quality leadership are in position to ensure the effective flow of communication, the result will be a project that meets requirements. Communication thus flows from the foundation communication using all communication skills and applications of communication to support leadership, management and project execution.

## 10.    Conclusion and recommendation

Appropriate literature gave rise to a range of structured questions that were used to obtain quantitative data from the survey participants. Analysis of the data with literature and the results from the survey determined the elements of a proposed model and showed that the communication skills expected from project

managers can be grouped into core (decision-making, problem-solving, listening, verbal competency, motivation, persuasion, meetings, writing competency, presentation, team-building and team development, conflict management) and important skills (negotiation, trust, explaining, questioning, reinforcement, reflecting, public communication, humour and laughter, self-disclosure), which together with management and leadership communication form the main basis of the proposed model. The research results showed that communication is fundamental to the development of leadership ability and effective management in order to produce successful projects. The model includes a core set of communications and application skills, which by using in combination with the important management and leadership elements of the model is proposed to assist construction project managers in developing their communication abilities, and through improved communication, improve their management and leadership abilities, ensuring the successful execution of projects.

Implementation and use of the proposed model relies on the willingness of construction project managers relative to understand the importance of such a model. It is, therefore, recommended that the interrelated 'skills' and 'applications' included in the model are of utmost importance. These include 'engaging people', which proffers the encouragement of construction project managers to take ownership in an attempt to introduce and implement this communication skills model to their firms.

This research does not consider the model as a complete means to an end. Further research is needed in order to develop an instrument to measure the level of an individual's or group's core and important communication skills and applications of communication to improve their management and leadership capability.

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