

Chapter 8 Bibliography

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www.baadd.org
www.numericjobs.com
www.joboptions.co.za
www.sfsu.edu
<http://webmail.worldonline.co.za>
<http://jobs-ireland.com>
www.cameron-brooks.com
www.ayuniversal.com/jobs.htm
www.d-cypha.co.nz/opportunities/employment.html
www.absoluteisonline.com/employment.htm
www.mckinsey.com.cn/work/work_options_02analyst.htm
www.nationjob.com/showjob.cgi/tin1122.htm
www.zsassociates.com/careers/workinghere/profiles/analyst_profile.html
<http://home.techies.com>
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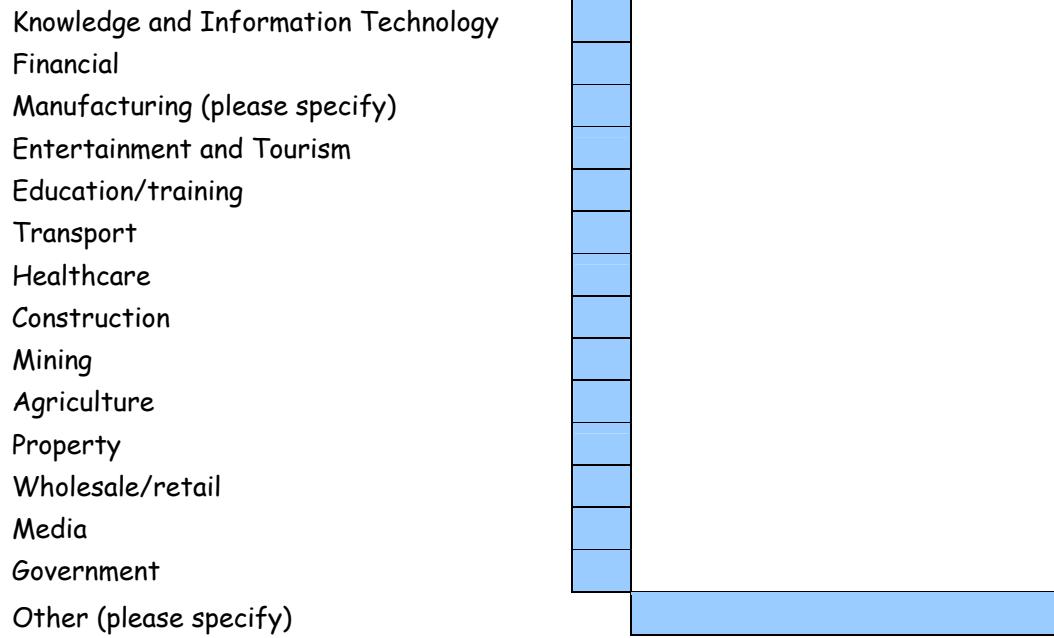
Appendix 1

Questionnaire – IT/Business relationship

Section A Demographic information.

Surname		<input type="text"/>
Initials		<input type="text"/>
First name		<input type="text"/>
Company/employer		<input type="text"/>
Job title		<input type="text"/>
Company address		<input type="text"/>
Telephone numbers	Work :	<input type="text"/>
	Cell :	<input type="text"/>
Email address		<input type="text"/>
Where do you work?		
IT department	<input type="checkbox"/>	
Other business department	<input type="checkbox"/>	
Independent consultant	<input type="checkbox"/>	
Your job responsibilities		<input type="text"/>
Highest academic qualifications (post matric) (e.g. BSc(Hons)(Computer Science), MBA)		
Qualification		<input type="text"/>
Year completed		<input type="text"/>
Institution		<input type="text"/>
Does your company		
Use outsourced IT services	<input type="checkbox"/>	
Use in-house IT services	<input type="checkbox"/>	
Provide IT service (outsourcer)	<input type="checkbox"/>	

What is the main focus of your company (sector)?



Section B

The purpose of this section is to establish the significance of various factors in contributing towards failure of IT projects and an adverse business-IS/IT relationship at your organisation. Please indicate the significance of the following factors in contributing towards and adverse relationship between business and IS/IT by marking the relevant column with X:

- 1 - Very significant (VS)
- 2 - Significant (S)
- 3 - Unsure (U)
- 4 - Not significant (NS)
- 5 - Not significant at all (NSA)

Please avoid selecting 'Unsure' as far as possible. Additional information can be added to the 'comments' row at the end of each category (include the relevant question number with your comment).

Category 1

1 2 3 4 5
VS S U NS NSA

The real business need is not understood and documented (ineffective requirement specification)

- 1.1 Users don't know what they really want
- 1.2 The scope of the project is not well-defined, therefore conflict results
- 1.3 A lack of clear and consistent definition of the problems leads to the development of systems with which users are dissatisfied.
- 1.4 Developers build what they believe is needed, without having any real knowledge of the business
- 1.5 Weak business case - the need is not justified in ways that directly relates to the business needs
- 1.6 IT does not provide the right combination of technical expertise and understanding of the business requirements to provide technical solutions that will provide answers to the real business problems
- 1.7 Clients can only tell IT what they want when they see it. Developers don't give clients something they can see, in simple, plain language
- 1.8 Project goals and objectives are not thoroughly defined and therefore the project requirements are out of context

	1	2	3	4	5

1.9 Failure to ask the right people the right questions at the right time

Comments :

Category 2

Project scope changes (Changing business needs / technology)

- 2.1 Scope creep occurs throughout the project
- 2.2 Inflexibility of design to incorporate unscheduled changes in requirements
- 2.3 Users lose enthusiasm and sense of ownership because their required changes are not made ("frozen specs")
- 2.4 Users change their minds on their perceptions
- 2.5 Competitors introduce new technologies and features
- 2.6 Technology changes halfway through the project
- 2.7 Business requirements change halfway through the project
- 2.8 End users do not know what they're asking for

Comments:

Category 3

Insufficient client expectation management

- 3.1 There is a difference between the expectations of end users from computer systems and their actual performance.
- 3.2 High expectations of users are caused by vendor's self-serving claims and the glitter of technology. End-users and IS professionals are often misled by the glitter of new technology and vendors' inflated claims - their focus then shifts from problem solving to working with the latest technology and software packages.
- 3.3 Unrealistically high expectations of users in the face of limited resources
- 3.4 Unmanaged expectations - not clearly and frequently communicated to all stakeholders
- 3.5 Failure of IT to meet its commitments

Comments:

Category 4

Lack of Communication

- 4.1 No clear communication processes between business and IT
- 4.2 No clear and excellent communication channels that are crucial for success.
- 4.3 No "common vocabulary" among business partners and IT professionals.

4.4 The techniques for solving the communications problem - e.g. joint application development and close consultation with subject matter experts - aren't sufficient

4.5 At the heart of the communication problem is the fact that business users understand their business at the business process level, while developers understand it in terms of data structures, etc.

Comments:

Category 5

Poor documentation practices

5.1 Lack of accurate, legible and complete documentation

5.2 Good documentation that is very important for effectively managing and implementing projects does not exist. A requirements document is mandatory.

5.3 The requirements document does not truly reflect the needs

Comments:

Category 6

Poor testing

6.1 Poor testing - testing fail to catch faults before a system goes live

6.2 Poorly planned tests

6.3 Inadequate time to perform tests

Comments:

Category 7

People issues / behavioural issues / cultural issues

7.1 Major cause of most software failures is the people rather than technology

7.2 IT investments fail to deliver business value because of cultural, organisational and leadership gaps between IT and business.

7.3 Companies fail to recognize the cultural differences between business managers and IT professionals and therefore fail to take steps to bridge those differences

7.4 Line-of-business managers and IT professionals approach their daily jobs and new challenges very differently

7.5 An organizational culture and ethos that demonstrates people-friendly principles, respecting the potential of employees, does not exist.

7.6 People resist change because they do not want to shift from their comfort zones

7.7 Some people within organisations are more powerful than others through their positions of connections with powerful people

Comments:

Category 8

Adverse interpersonal relationships

8.1 There is no harmony in the group

8.2 IT departments do not build personal relationships and be caught doing things right

8.3 Relationships are not developed on all levels of the organisation

8.4 Lack of affiliation - business and IT seem to go into different directions

8.5 Lack of a close relationship between IT and business

Comments:

Category 9

Lack of customer ownership / collaboration

9.1 Customer resistance because the users do not identify with the software system, and sees it as belonging to them.

9.2 Business does not feel that the IT project belongs to them

9.3 Clients are afraid of having their security or position put at risk

9.4 A lack of customer acceptance and confidence, resistance to change and hidden agendas.

9.5 End users provide incomplete or wrong data because they are happy with what they are using presently and do no want to change

9.6 There is no business buy-in because the project idea comes out of the IT side

Comments:

Category 10

Lack of shared goals

10.1 Different goals - group members have different needs and objectives that are not harmonized

10.2 People are moving in different directions and do not connect and add their energies to each other in bringing about a goal.

Comments:

Category 11

Negative attitude towards the IS/IT function

11.1 Business sees IT as a necessary evil - an enabler at best

11.2 Business sees IT as a never-ending drain on the bottom line

- 11.3 Business thinks IT only wants to embrace the latest in technology
 - 11.4 IT is fighting against the business
 - 11.5 IT does not have a very good track record
 - 11.6 IT tries to tell the business what it can and cannot do
 - 11.7 Rumours about IT damage projects and long-term goals
 - 11.8 Most IT departments are held in very low esteem
 - 11.9 Business should recognize that the IT department is more than a cost center or a necessary evil
 - 11.10 End users do not trust the developers
 - 11.11 Because of their negative image, user support for future IT projects becomes more difficult.
 - 11.12 Companies have developed an unfortunate and destructive culture of "us" versus "them"
- Comments:

Category 12

Lack of strategic alignment

- 12.1 Strategic goals are not clearly articulated and well-understood throughout the organisation and therefore IT has nothing to align itself to
 - 12.2 There is no well-defined corporate strategy
 - 12.3 IS/IT is not involved in the development of corporate strategy
 - The priorities of the IT strategic plan are not linked to the strategy of the enterprise
 - 12.4 IT shortfall - IT fails to support the business strategy
 - 12.5 IT under-utilisation - business strategy fails to utilize existing IT resources to the fullest extent possible.
 - 12.6 Poorly executed good strategies or well-executed bad strategies
- Comments:

Category 13

Strategic role/involvement of IT manager

- 13.1 IT and business executives are not truly collaborating and focusing on the same measurement goals - any strategy will inevitably go awry in formulation or execution
- 13.2 Few companies have the critical number of enterprise-technology executives within their senior ranks who can recognize how advanced technologies should be strategically deployed to increase market value.
- 13.3 Business and IT executives do not comfortably work together constructively.
- 13.4 The head of IT is not a member of the board of directors

13.5 The CIO reports to the CFO, not the CEO

Comments:

Category 14

Skills, attributes and attitudes of IT personnel

14.1 Insufficient training/education of IT professionals

14.2 Work overload, skills shortages in the IT function

14.3 Turnover of staff leads to discontinuity

14.4 Inability to attract and retain the information technology resources with the required skills set

14.5 Project team members have to learn the technology as they go

14.6 There is not enough emphasis on soft skills in the IT function

14.7 There is no commitment to education from the highest levels of the organisation

14.8 Not enough emphasis is placed on finding people with soft skills

14.9 There is not an attitude of constant refreshing and retraining in the organisation

14.10 Developers are not well grounded in the business

14.11 The developers don't understand the business model and see the bigger picture of the business

14.12 Poor training may result in people not co-operating with the information system leading to failure and project abandonment.

14.13 Technology is too complex for most business managers to understand

14.14 Business managers hardly understand the IT organisation's strengths and challenges in managing the company's IT infrastructure

Comments:

Category 15

Lack of shared responsibility

15.1 Business unit participants should be full-time members of the project teams

15.2 Business partners and IT professionals should share responsibility for managing risk

15.3 Business partners and IT professionals should share responsibility for IT project success

15.4 While with any IT project failure the IT department must accept some portion of that responsibility, too often that portion is too large and too restricted.

Comments:

Category 16

Insufficient equipment and infrastructure

16.1 Unplanned absence of resources because of breakdowns of equipment

16.2 Instability of infrastructure

16.3 Unplanned absence of resources because of breakdowns of equipment and turnover of personnel

Comments:

Category 17

Lack of user involvement

17.1 Lack of user involvement because of behavioural, organizational and political issues

17.2 The project champion is not involved through the entire lifecycle of the project

17.3 The project champion does not address the business-related issues as they arise

17.4 People assigned to the project from the business unit do not take their assignments seriously

17.5 Business unit people do not remain active participants in the development and testing of the project

17.6 Senior managers adapt a "hands-off" policy when it comes to IT projects because it is too technical

17.7 Senior managers don't ask questions and challenge assumptions because they don't understand the technical aspects of the project

17.8 Senior managers not actively involved.

17.9 Senior level sponsor not on board for the duration of the project.

Comments:

Category 18

Lack of knowledge transfer between IT and the business

18.1 Business does not empower IT by exposing them to the business needs

18.2 Business has a lack of understanding of IT and their role in its ultimate success

18.3 Meetings are not held to explain business decisions

18.4 Stakeholders do not understand the development process

18.5 Stakeholders are unable to relate to each other's skills or responsibilities

18.6 You also need knowledge transfer, so that the person in IT gains knowledge of the business issues and can think of IT in the context of the business, and vice versa for business people.

18.7 Business people do not have an understanding of IT capabilities - they don't know what is possible and impossible, and they don't think realistically.

18.8 Business unit members or implementation teams do not participate on the team through the initial implementation and into the support phase.

18.9 People get caught up in their work - they move from one project to the other without gathering or applying lessons learned.

Comments:

Category 19

Different measures of success

19.1 Group members have different perceptions and bias as to what makes a good system

19.2 Success or failure measured in different way

19.3 The gap between how IT executives think they are performing (against business expectations) and how they are really performing (based on CEO perceptions) is widening

Comments:

Category 20

Management issues:

Organisation/business management

20.1 Bad organisational setting and management style - the arrangement of organizational subsystems, the division of labour and hierarchy of authority

20.2 The CEO does not have basic knowledge about how IT interweaves throughout the business

20.3 Organisational culture - affects system requirements and system acceptance

20.4 The management team is not a real team

20.5 Business executives do not understand the requirements, risks and rewards of using advanced technologies.

20.6 Corporate leaders are not proficient in managing both profit-and-loss operations and new IT deployments - so-called "enterprise-technology executives"

20.7 Insufficient management commitment to fund a project, be involved in the project and allocate enough human resources to participate in the project

Comments:

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Category 21

IT management

21.1 The CIO does not take up the responsibility to bridge the gap between IT and business

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21.2 There is a bad relationship between the CEO and the CIO

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21.3 The CEO does not trust the CIO and does not communicate with him/her frequently

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21.4 The CIO does not have detailed knowledge of the organisation's operational units and cannot talk at business level

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21.5 The CIO does not ensure that all members of the team contribute and does not maintain a realistic timetable to meet delivery dates

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21.6 The CIO is not a business person first and a technologist second

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21.7 The person with the best knowledge of technology, not business, is the CIO

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21.8 The head of the IT group is a manager, not a leader (managing is getting people to do what you want. Leading is getting people to want what you want)

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21.9 IT executives feel they are under huge pressure if their projects are over budget, late, buggy or inadequate to meet their company's business needs.

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21.10 Many CIO's do not effectively measure the impact they have on the businesses they support, leaving them vulnerable

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21.11 Poor prioritisation by IT management

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Comments:

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Category 22

Project issues

22.1 Unrealistic project completion date coupled with continually changing requirements

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22.2 Long or unrealistic time scales

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22.3 Defects in final software

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22.4 Inability to realize sufficient value from IT

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22.5 Application complexity

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22.6 A project is signed off on the promise that errors will be fixed later

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22.7 Senior managers sign projects off without understanding the benefits and risks associated with the project

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22.8 A formal contract is not signed between the organisation and the vendor

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Comments:

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Category 24

Project manager issues

- 24.1 Lack of skills and expertise
- 24.2 Experience, authority and stature of PM inconsistent with nature, scope and risks of project
- 24.3 IT project managers do not establish credibility with their business unit peers by demonstrating business process knowledge
- 24.4 Projects are managed singly - like disjoint construction projects
- 24.5 The project manager may try to shift the blame for a failed project to others
- 24.6 The project managers does not regularly report the status of the project
- 24.7 The project manager obscures or hides project-related problems
- 24.8 The project manager is not assigned to the project full-time
- 24.9 Inadequate people management skills

Comments:

Category 25

Finances

- 25.1 IT allocation decisions made incorrectly
- 25.2 IT costs not included in the annual corporate budget, i.e. lack of collaboration between the business and technology sides.
- 25.3 The IT budget is too low relative to sales
- 25.4 Money that is allocated to a project is used carelessly, paying for objects that contribute less or nothing in the project.

Comments:

Section C

Identify and rank the ten most important categories contributing to relationship problems between IS/IT and business by marking them with 1 - 10 in the blue column (from 1 -most important to 10 - least important)

Category

1. The real business need is not understood and solved (ineffective requirements specification)
2. Project scope changes (changing business needs / technology)
3. Insufficient client expectation management
4. Lack of Communication between IT- and business
5. Poor documentation practices
6. Poor testing
7. People issues / behavioural issues / cultural issues (politics, power, culture)
8. Customers don't take ownership of the solution
9. Negative attitude towards the TS/IT function
10. Interpersonal relationship problems (trust, empathy, affiliation)
11. Lack of shared goals
12. Lack of shared responsibility
13. Lack of strategic alignment between IT and business strategy
14. IT manager/CIO not part of strategy formulation team/board of directors)
15. Insufficient skills, attributes and attitudes of IT employees
16. Equipment and infrastructure problems
17. Lack of user involvement
18. Lack of knowledge transfer between IT and the business (understanding each other)
19. Different perceptions of the measures of success
20. Organisation/business management problems
21. IT management problems
22. IT Project issues (e.g. complexity, time scales)
23. Project management issues (e.g. bad planning, risk management)
24. Project manager issues (e.g. skills, training)
25. Financial constraints (e.g. budgets, insufficient funds)

Appendix 2

Demographics of participants – IT/Business relationships

67 IT managers and 48 business managers from the following companies took part in the survey (in alphabetical order):

Company:

ABSA
Accenture
Afrox
Anglo American Platinum Corporation
Arivia.kom
AST
Astute HR
Automobile of Association(AA)
AVITRONICS
Barone,
Budge & Dominick
Careways
Centricity
Comparex Africa
CS Holdings
CSIR
Department Of Edcation
Department Of Forestry And Water Affairs
Department Of Health
Dept. Of Pubic Enterprise
Dept Of Social Development
Dept. Of Transport
P.C. CLOBE
Eskom
First National Bank
GCIS PMP (Denel)
Glass Power Business Systems (Pty) Ltd
Grintek Telecom
Herman Stols Rekenmeesters
Highveld Steel & Vanadium
Johnnic Entertainment
Leretech Technologies
Maslex(Pty)Ltd
Medikredit
Mobile Scanning Systems (PTY) LTD
Mogalakwena municipality
Nampak
Nashua Mobile
National Research Foundation
Nkangala District Council
NMC
Northwest Star Transport
Pasdec Resources SA LTD
PCS Projects / Comparex Africa
PMP (Denel)
Pranisha
Pretoria Software Solutions
SA Air Force College

SA Power Business Systems (Pty) Ltd
Saampro (PTY) Ltd
Sabinet Online
SABS
Sasol
Siemens Ltd
Sisonke Global Systems (Pty) Ltd
SITA (PTY) LTD
SITA Elevate Solutions
SODECOR
Standard Bank Standard Bank
Statistic South Africa
Tshwane University of Technology (TUT)
Telkom SA Ltd
The IQ Business Group
The Presidency
Tilca Infr Man Apptitude
Transwerk
TSI

The job titles of the participants (in alphabetical order) are as the following:

Job titles

Account Executive - Retail
Application Development Manager
Assistant director administration
Assistant Director IT
Assistant Manager
Associated General Accountant
Branch Manager
Business Analyst
Business Analyst
Business Analyst
Business Architect
Business Manager
Business Manager
Business Specialist
Business Specialist
Call Centre Manager
CEO
Chief Engineer
Chief Engineer
CIO
CIO (GITO)
Commercial Manager
Manager (Thrip)
Commercial Projects Advisor
Computer Technician
Computer Technician
Contract Execution Manager
Contract Execution Manager
Database Administrator
Dean of Faculty of Information and Communication Technology
Deputy Director HRM
Deputy Director:IT Networks And Customer Care
Development Director

Director
Director
Director
Director
Director
ETD Manager
ETD Manager
Financial Account Manager
Financial Controller
Financial Director
Financial IT Consultant
Group IT Manager
IS and Business Consultant
IS Consaltant
IS Consaltant
IS Manager
IT Facilities Manager
IT Manager
IT Manager
IT Manager
IT Manager
IT Manager
IT manager
IT Manager
IT Manager
IT Manager : Project manager
IT Manager : Project manager
IT Specialist
Junior IT Manager
Locomotives Business Manager
Manager
Manager
Manager (Thrip)
Manager,
Manager:
Managing Director
Managing Director
Marketing Manager
MIS IT Manager
MIS Manager
National QA Manager
Network & Server Administrator
Network Manager
NMG Director Communications
Operation Manager
Operations Manager
Policy Analyst
Portfolio Manager
Portfolio Manager
Program Manager (IT)
Programme Manager
Project Manager
Project Manager
Project Manager
Project Manager Manufacturing
Sales Manager
Senior Advisor

Senior Business Analyst
Senior Operations Manager
Senior Team Leader
Senior Technical Manager Knowledge Management & Strategy Director
Managing Director
Service Delivery Manager
Senior Consultant
Senior Manager - Enterprise Systems
Senior Manager - Enterprise Systems
Software Developer Specialist (Business Solutions & Strategy Alignment)
Software Development Manager
Software Development Manager
Software Engineer
Solutions Architect
Specialist IT
SW Specialist
Technical Sales IT Manager
Web Admin Manager Policies, Procedure and work instruction
Web Designer
Works Manager

Appendix 3

Results – business-IT relationship

1. Ranking of categories in section C of the questionnaire

Categories that were selected by the largest percentage of respondents as one of the ten- and five most important, respectively:

1.1 Both IT and business managers

Most selected as option 1-10

Category	Frequency
The real business need is not understood and solved (ineffective requirements specification)	60
Lack of Communication between IT- and business	56
Project scope changes (changing business needs / technology)	53
Lack of shared goals	50
Lack of shared responsibility	50
Financial constraints (e.g. budgets, insufficient funds)	44
People issues / behavioral issues / cultural issues (politics, power, culture)	42
Lack of strategic alignment between IT and business strategy	41
Lack of knowledge transfer between IT and the business (understanding each other)	40
Different perceptions of the measures of success	39
Insufficient client expectation management	37
Negative attitude towards the TS/IT function	37
Lack of user involvement	35
Customers don't take ownership of the solution	32
Insufficient skills, attributes and attitudes of IT employees	32
Poor testing	31
Project management issues (e.g. bad planning, risk management)	29
Poor documentation practices	27
Equipment and infrastructure problems	26
IT Project issues (e.g. complexity, time scales)	25
IT manager/CIO not part of strategy formulation team/board of directors)	24
Interpersonal relationship problems (trust, empathy, affiliation)	22
Project manager issues (e.g. skills, training)	20
IT management problems	18
Organisation/business management problems	17

Most selected as option 1-5

Category	Frequency
The real business need is not understood and solved (ineffective requirements specification)	42
Lack of Communication between IT- and business	39
Project scope changes (changing business needs / technology)	38
Financial constraints (e.g. budgets, insufficient funds)	28
Lack of strategic alignment between IT and business strategy	28
People issues / behavioral issues / cultural issues (politics, power, culture)	21
Lack of knowledge transfer between IT and the business (understanding each other)	20
Lack of shared goals	19
Lack of shared responsibility	19
Insufficient client expectation management	19
Lack of user involvement	19
Different perceptions of the measures of success	15
Customers don't take ownership of the solution	15
Project management issues (e.g. bad planning, risk management)	15
IT manager/CIO not part of strategy formulation team/board of directors)	15

Negative attitude towards the TS/IT function	14
Poor testing	14
IT Project issues (e.g. complexity, time scales)	14
Insufficient skills, attributes and attitudes of IT employees	12
Poor documentation practices	12
Project manager issues (e.g. skills, training)	9
Equipment and infrastructure problems	7
Interpersonal relationship problems (trust, empathy, affiliation)	5
Organisation/business management problems	5
IT management problems	2

1.2 IT managers

Most selected as 1-10

Category	Frequency
Lack of Communication between IT- and business	35
Project scope changes (changing business needs / technology)	32
The real business need is not understood and solved (ineffective requirements specification)	30
Lack of strategic alignment between IT and business strategy	28
People issues / behavioral issues / cultural issues (politics, power, culture)	26
Lack of shared goals	26
Lack of shared responsibility	26
Financial constraints (e.g. budgets, insufficient funds)	24
Insufficient client expectation management	22
Negative attitude towards the TS/IT function	21
Lack of user involvement	20
Different perceptions of the measures of success	20
Poor testing	19
Lack of knowledge transfer between IT and the business (understanding each other)	19
Project management issues (e.g. bad planning, risk management)	19
Insufficient skills, attributes and attitudes of IT employees	18
Customers don't take ownership of the solution	17
Poor documentation practices	16
IT manager/CIO not part of strategy formulation team/board of directors)	15
IT Project issues (e.g. complexity, time scales)	15
Equipment and infrastructure problems	15
Organisation/business management problems	13
IT management problems	13
Interpersonal relationship problems (trust, empathy, affiliation)	11
Project manager issues (e.g. skills, training)	9

Most selected as 1-5

Category	Frequency
Lack of Communication between IT- and business	24
Project scope changes (changing business needs / technology)	24
The real business need is not understood and solved (ineffective requirements specification)	18
Lack of strategic alignment between IT and business strategy	18
Financial constraints (e.g. budgets, insufficient funds)	17
People issues / behavioral issues / cultural issues (politics, power, culture)	14
Lack of user involvement	12
Lack of shared goals	11
Lack of shared responsibility	11
IT manager/CIO not part of strategy formulation team/board of directors)	10
IT Project issues (e.g. complexity, time scales)	10
Insufficient client expectation management	9
Poor testing	9
Project management issues (e.g. bad planning, risk management)	9
Insufficient skills, attributes and attitudes of IT employees	9

Negative attitude towards the TS/IT function	8
Customers don't take ownership of the solution	8
Different perceptions of the measures of success	7
Poor documentation practices	7
Project manager issues (e.g. skills, training)	4
Organisation/business management problems	3
Interpersonal relationship problems (trust, empathy, affiliation)	3
Equipment and infrastructure problems	2
IT management problems	2
Lack of knowledge transfer between IT and the business (understanding each other)	9

1.3 Business managers

Most selected as 1-10

Category	Frequency
The real business need is not understood and solved (ineffective requirements specification)	28
Lack of shared goals	24
Lack of shared responsibility	24
Lack of Communication between IT- and business	20
Project scope changes (changing business needs / technology)	20
Lack of knowledge transfer between IT and the business (understanding each other)	20
Different perceptions of the measures of success	19
Financial constraints (e.g. budgets, insufficient funds)	18
Insufficient client expectation management	15
People issues / behavioral issues / cultural issues (politics, power, culture)	15
Lack of user involvement	15
Negative attitude towards the TS/IT function	15
Project management issues (e.g. bad planning, risk management)	13
Lack of strategic alignment between IT and business strategy	12
Customers don't take ownership of the solution	12
Insufficient skills, attributes and attitudes of IT employees	12
Equipment and infrastructure problems	12
Poor documentation practices	11
Poor testing	11
IT Project issues (e.g. complexity, time scales)	10
Project manager issues (e.g. skills, training)	9
Interpersonal relationship problems (trust, empathy, affiliation)	9
IT manager/CIO not part of strategy formulation team/board of directors)	8
IT management problems	6
Organisation/business management problems	4

Most selected as 1-5

Category	Frequency
The real business need is not understood and solved (ineffective requirements specification)	22
Lack of Communication between IT- and business	15
Project scope changes (changing business needs / technology)	13
Lack of knowledge transfer between IT and the business (understanding each other)	11
Financial constraints (e.g. budgets, insufficient funds)	10
Lack of shared goals	9
Lack of shared responsibility	9
Different perceptions of the measures of success	9
Insufficient client expectation management	9
Lack of strategic alignment between IT and business strategy	9
People issues / behavioural issues / cultural issues (politics, power, culture)	7
Project management issues (e.g. bad planning, risk management)	7
Customers don't take ownership of the solution	7
Lack of user involvement	6

IT Project issues (e.g. complexity, time scales)	6
Negative attitude towards the TS/IT function	5
Poor documentation practices	5
Poor testing	5
Insufficient skills, attributes and attitudes of IT employees	4
Equipment and infrastructure problems	4
IT manager/CIO not part of strategy formulation team/board of directors)	4
Project manager issues (e.g. skills, training)	3
Interpersonal relationship problems (trust, empathy, affiliation)	2
Organisation/business management problems	2
IT management problems	0

2. Second ranking of categories

Average of the questions in each category

The average number of people who answered strongly agree and agree to the questions was calculated and the categories were ranked accordingly.

IT manager

Lack of shared responsibility	85
Lack of shared goals	78
Insufficient client expectation management	74
Different measures of success	72
Poor documentation practices	71
Poor testing	70
The real business need is not understood and documented	69
Lack of Communication	68
Skills, attributes and attitudes of IT personnel	67
Lack of knowledge transfer between IT and the business	67
People issues / behavioural issues / cultural issues	66
Adverse interpersonal relationships	66
Project scope changes (Changing business needs / technology)	65
Lack of customer ownership / collaboration	63
Lack or user involvement	63
Project issues	63
Project management issues	59
Negative attitude towards the IS/IT function	57
Organisation/business management	57
Project manager issues	57
Strategic role/involvement of IT manager	56
Lack of strategic alignment	53
IT management	50
Finances	50
Insufficient equipment and infrastructure	44

Business managers

Lack of shared responsibility	85
Lack of shared goals	80
Insufficient client expectation management	75
Poor testing	75
Lack of Communication	74
The real business need is not understood and documented	69
Adverse interpersonal relationships	69
Poor documentation practices	65

Lack of knowledge transfer between IT and the business	65
People issues / behavioural issues / cultural issues	63
Different measures of success	63
Project scope changes (Changing business needs / technology)	60
Skills, attributes and attitudes of IT personnel	60
Lack of user involvement	60
Project issues	60
Project management issues	57
Project manager issues	57
Strategic role/involvement of IT manager	55
Lack of customer ownership / collaboration	54
Negative attitude towards the IS/IT function	50
Organisation/business management	50
Finances	50
Lack of strategic alignment	49
Insufficient equipment and infrastructure	37
IT management	35

3. Ranking of questions within each category

IT managers

Category 1

The real business need is not understood and documented (ineffective requirement specification)

1. Failure to ask the right people the right questions at the right time
2. Users don't know what they really want
3. A lack of clear and consistent definition of the problems leads to the development of systems with which users are dissatisfied.
4. The scope of the project is not well-defined, therefore conflict results
5. Project goals and objectives are not thoroughly defined and therefore the project requirements are out of context
6. IT professionals speak of "requirements gathering" as if the requirements were scattered about, waiting for us to pick them up and drop them into a basket. Clients can only tell them what they want when they see it. It is their job as developers to give clients something they can see, in simple, plain language
7. Developers build what they believe is needed, without having any real knowledge of the business
8. Weak business case – the need is not justified in ways that directly relates to the business needs
9. IT does not provide the right combination of technical expertise and understanding of the business requirements to provide technical solutions that will provide answers to the real business problems

Category 2

Project scope changes (Changing business needs / technology)

1. Scope creep occurs throughout the project
2. Business requirements change halfway through the project
3. Users change their minds on their perceptions
4. Inflexibility of design to incorporate unscheduled changes in requirements
5. End users do not know what they're asking for
6. Users lose enthusiasm and sense of ownership because their required changes are not made ("frozen specs")
7. Competitors introduce new technologies and features
8. Technology changes halfway through the project

Category 3

Insufficient client expectation management

1. Unrealistically high expectations of users in the face of limited resources
2. High expectations of users are caused by vendor's self-serving claims and the glitter of technology. End-users and IS professionals are often misled by the glitter of new technology and

- vendors' inflated claims – their focus then shifts from problem solving to working with the latest technology and software packages.
3. There is a difference between the expectations of end users from computer systems and their actual performance.
 4. Unmanaged expectations – not clearly and frequently communicated to all stakeholders
 5. Failure of IT to meet its commitments

Category 4

Lack of Communication

1. At the heart of the communication problem is the fact that business users understand their business at the business process level, while developers understand it in terms of data structures, etc.
2. No “common vocabulary” among business partners and IT professionals.
3. No clear and excellent communication channels that are crucial for success.
4. No clear communication processes between business and IT
5. The techniques for solving the communications problem – e.g. joint application development and close consultation with subject matter experts – aren't sufficient

Category 5

Poor documentation practices

1. Lack of accurate, legible and complete documentation
2. Good documentation that is very important for effectively managing and implementing projects does not exist. A requirements document is mandatory.
3. The requirements document does not truly reflect the needs

Category 6

Poor testing

1. Inadequate time to perform tests
2. Poor testing – testing fail to catch faults before a system goes live
3. Poorly planned tests

Category 7

People issues / behavioural issues / cultural issues

1. People resist change because they do not want to shift from their comfort zones
2. Some people within organisations are more powerful than others through their positions of connections with powerful people
3. Major cause of most software failures is the people rather than technology
4. Line-of-business managers and IT professionals approach their daily jobs and new challenges very differently
5. IT investments fail to deliver business value because of cultural, organisational and leadership gaps between IT and business.
6. Companies fail to recognize the cultural differences between business managers and IT professionals and therefore fail to take steps to bridge those differences
7. An organizational culture and ethos that demonstrates people-friendly principles, respecting the potential of employees, does not exist.

Category 8

Adverse interpersonal relationships

1. Lack of a close relationship between IT and business
2. Relationships are not developed on all levels of the organisation
3. Lack of affiliation – business and IT seem to go into different directions
4. There is no harmony in the group
5. IT departments do not build personal relationships and be caught doing things right

Category 9

Lack of customer ownership / collaboration

1. A lack of customer acceptance and confidence, resistance to change and hidden agendas.

2. Customer resistance because the users do not identify with the software system, and sees it as belonging to them.
3. Clients are afraid of having their security or position put at risk
4. Business does not feel that the IT project belongs to them
5. There is no business buy-in because the project idea comes out of the IT side
6. End users provide incomplete or wrong data because they are happy with what they are using presently and do not want to change

Category 10

Lack of shared goals

1. People are moving in different directions and do not connect and add their energies to each other in bringing about a goal.
2. Different goals – group members have different needs and objectives that are not harmonized

Category 11

Negative attitude towards the IS/IT function

1. Business should recognize that the IT department is more than a cost center or a necessary evil
2. Business sees IT as a necessary evil – an enabler at best
3. Business sees IT as a never-ending drain on the bottom line
4. Business thinks IT only wants to embrace the latest in technology
5. Companies have developed an unfortunate and destructive culture of “us” versus “them”
6. Because of their negative image, user support for future IT projects becomes more difficult.
7. IT tries to tell the business what it can and cannot do
8. IT does not have a very good track record
9. Most IT departments are held in very low esteem
10. IT is fighting against the business
11. Rumours about IT damage projects and long-term goals
12. End users do not trust the developers

Category 12

Lack of strategic alignment

1. Strategic goals are not clearly articulated and well-understood throughout the organisation and therefore IT has nothing to align itself to
2. IT under-utilisation – business strategy fails to utilize existing IT resources to the fullest extent possible.
3. There is no well-defined corporate strategy
4. IS/IT is not involved in the development of corporate strategy
5. The priorities of the IT strategic plan are not linked to the strategy of the enterprise
6. Poorly executed good strategies or well-executed bad strategies
7. IT shortfall – IT fails to support the business strategy

Category 13

Strategic role/involvement of IT manager

1. Few companies have the critical number of enterprise-technology executives within their senior ranks who can recognize how advanced technologies should be strategically deployed to increase market value.
2. Business and IT executives do not comfortably work together constructively.
3. IT and business executives are not truly collaborating and focusing on the same measurement goals - any strategy will inevitably go awry in formulation of execution
4. The head of IT is not a member of the board of directors
5. The CIO reports to the CFO, not the CEO

Category 14

Skills, attributes and attitudes of IT personnel

1. Work overload, skills shortages in the IT function
2. There is not enough emphasis on soft skills in the IT function
3. Inability to attract and retain the information technology resources with the required skills set

4. There is not an attitude of constant refreshing and retraining in the organisation
5. Turnover of staff leads to discontinuity
6. Project team members have to learn the technology as they go
7. Developers are not well grounded in the business
8. The developers don't understand the business model and see the bigger picture of the business
9. Business managers hardly understand the IT organisation's strengths and challenges in managing the company's IT infrastructure
10. Poor training may result in people not co-operating with the information system leading to failure and project abandonment.
11. Not enough emphasis is placed on finding people with soft skills
12. Insufficient training/education of IT professionals
13. Technology is too complex for most business managers to understand
14. There is no commitment to education from the highest levels of the organisation

Category 15

Lack of shared responsibility

1. Business partners and IT professionals should share responsibility for managing risk
2. Business partners and IT professionals should share responsibility for IT project success
3. While with any IT project failure the IT department must accept some portion of that responsibility, too often that portion is too large and too restricted.
4. Business unit participants should be full-time members of the project teams

Category 16

1. Instability of infrastructure
2. Unplanned absence of resources because of breakdowns of equipment and turnover of personnel
3. Insufficient equipment and infrastructure
4. Unplanned absence of resources because of breakdowns of equipment

Category 17

Lack of user involvement

1. Lack of user involvement because of behavioural, organizational and political issues
2. Business unit people do not remain active participants in the development and testing of the project
3. The project champion is not involved through the entire lifecycle of the project
4. People assigned to the project from the business unit do not take their assignments seriously
5. Senior managers adopt a "hands-off" policy when it comes to IT projects because it is too technical
6. Senior level sponsors are not on board for the duration of the project.
7. Senior managers don't ask questions and challenge assumptions because they don't understand the technical aspects of the project
8. Senior managers not actively involved.
9. The project champion does not address the business-related issues as they arise

Category 18

Lack of knowledge transfer between IT and the business

1. Lack of knowledge transfer, so that the person in IT gains knowledge of the business issues and can think of IT in the context of the business, and vice versa for business people.
2. Business has a lack of understanding of IT and their role in its ultimate success
3. Meetings are not held to explain business decisions
4. People get caught up in their work – they move from one project to the other without gathering or applying lessons learned.
5. Business does not empower IT by exposing them to the business needs
6. Business people do not have an understanding of IT capabilities - they don't know what is possible and impossible, and they don't think realistically.
7. Stakeholders do not understand the development process
8. Stakeholders are unable to relate to each other's skills or responsibilities

9. Business unit members or implementation teams do not participate on the team through the initial implementation and into the support phase.

Category 19

Different measures of success

1. Group members have different perceptions and bias as to what makes a good system
2. Success or failure measured in different way
3. The gap between how IT executives think they are performing (against business expectations) and how they are really performing (based on CEO perceptions) is widening

Category 20

Management issues:

Organisation/business management

1. Business executives do not understand the requirements, risks and rewards of using advanced technologies.
2. Insufficient management commitment to fund a project, be involved in the project and allocate enough human resources to participate in the project
3. Organisational culture – affects system requirements and system acceptance
4. The management team is not a real team
5. Corporate leaders are not proficient in managing both profit-and-loss operations and new IT deployments – so-called “enterprise-technology executives”
6. Bad organisational setting and management style - the arrangement of organizational subsystems, the division of labour and hierarchy of authority
7. The CEO does not have basic knowledge about how IT interweaves throughout the business

Category 21

IT management

1. IT executives feel they are under huge pressure if their projects are over budget, late, buggy or inadequate to meet their company’s business needs.
2. Many CIO’s do not effectively measure the impact they have on the businesses they support, leaving them vulnerable
3. The CIO does not take up the responsibility to bridge the gap between IT and business
4. Poor prioritisation by IT management
5. The head of the IT group is a manager, not a leader (managing is getting people to do what you want. Leading is getting people to want what you want)
6. The CIO does not ensure that all members of the team contribute and does not maintain a realistic timetable to meet delivery dates
7. The CIO is not a business person first and a technologist second
8. The CIO does not have detailed knowledge of the organisation’s operational units and cannot talk at business level
9. The CEO does not trust the CIO and does not communicate with him/her frequently
10. The person with the best knowledge of technology, not business, is the CIO
11. There is a bad relationship between the CEO and the CIO

Category 22

Project issues

1. Unrealistic project completion date coupled with continually changing requirements
2. Long or unrealistic time scales
3. Application complexity
4. Defects in final software
5. Inability to realize sufficient value from IT
6. A project is signed off on the promise that errors will be fixed later
7. Senior managers sign projects off without understanding the benefits and risks associated with the project
8. A formal contract is not signed between the organisation and the vendor

Category 23

Project management issues

1. High on-going maintenance for systems
2. Inadequate assignment of activity accountabilities
3. Incorrect assumptions regarding resource availability
4. The use of new and unproven technology
5. Schedule overruns
6. Improper planning, estimating, scheduling and monitoring
7. Poor estimates
8. Weak risk management
9. Missing or incomplete review and approval activities
10. Projects not delivered on time and within budget
11. Poor project planning – inadequate risk management and a weak project plan
12. Incorrect estimates of activity durations
13. Change in key individuals (business sponsor, project manager, vendor manager)
14. Premature commitment to a fixed budget and schedule
15. Does not provide flexible applications, easy enhancements and reusable code
16. Training lacks practical insight – the skill of project management is knowing when and where to apply the techniques
17. Taking shortcuts through and around the system development methodology
18. Low morale within team
19. Poor project planning
20. The project team hasn't been assembled correctly
21. Inappropriate level of attention to managing project risks
22. Ineffective application of project standards and processes
23. Lack of organisation's commitment to the system development methodology
24. There is no project management methodology in place
25. Project is given to the wrong people
26. Failure to establish upper-management commitment to the project
27. Management of software projects is inadequate
28. Unavailability of needed tools
29. Unsuitable working environment
30. The IT teams are too large
31. Team not physically located together

Category 24

Project manager issues

1. Inadequate people management skills
2. Experience, authority and stature of PM inconsistent with nature, scope and risks of project
3. Lack of skills and expertise
4. The project manager is not assigned to the project full-time
5. Projects are managed singly – like disjoint construction projects
6. The project manager may try to shift the blame for a failed project to others
7. IT project managers do not establish credibility with their business unit peers by demonstrating business process knowledge
8. The project manager obscures or hides project-related problems
9. The project managers does not regularly report the status of the project

Category 25

Finances

1. IT allocation decisions made incorrectly
2. IT costs not included in the annual corporate budget, i.e.lack of collaboration between the business and technology sides.
3. The IT budget is too low relative to sales
4. Money that is allocated to a project is used carelessly, paying for objects that contribute less or nothing in the project.

Business managers

Category 1

The real business need is not understood and documented (ineffective requirement specification)

1. The scope of the project is not well-defined, therefore conflict results
2. Failure to ask the right people the right questions at the right time
3. A lack of clear and consistent definition of the problems leads to the development of systems with which users are dissatisfied.
4. Developers build what they believe is needed, without having any real knowledge of the business
5. Project goals and objectives are not thoroughly defined and therefore the project requirements are out of context
6. Users don't know what they really want
7. IT does not provide the right combination of technical expertise and understanding of the business requirements to provide technical solutions that will provide answers to the real business problems
8. IT professionals speak of "requirements gathering" as if the requirements were scattered about, waiting for us to pick them up and drop them into a basket. Clients can only tell them what they want when they see it. It is their job as developers to give clients something they can see, in simple, plain language
9. Weak business case – the need is not justified in ways that directly relates to the business needs

Category 2

Project scope changes (Changing business needs / technology)

1. Business requirements change halfway through the project
2. Scope creep occurs throughout the project
3. Users lose enthusiasm and sense of ownership because their required changes are not made ("frozen specs")
4. End users do not know what they're asking for
5. Inflexibility of design to incorporate unscheduled changes in requirements
6. Competitors introduce new technologies and features
7. Technology changes halfway through the project
8. Users change their minds on their perceptions

Category 3

Insufficient client expectation management

1. There is a difference between the expectations of end users from computer systems and their actual performance.
2. Unmanaged expectations – not clearly and frequently communicated to all stakeholders
3. High expectations of users are caused by vendor's self-serving claims and the glitter of technology. End-users and IS professionals are often misled by the glitter of new technology and vendors' inflated claims – their focus then shifts from problem solving to working with the latest technology and software packages.
4. Failure of IT to meet its commitments
5. Unrealistically high expectations of users in the face of limited resources

Category 4

Lack of Communication

1. At the heart of the communication problem is the fact that business users understand their business at the business process level, while developers understand it in terms of data structures, etc.
2. No clear communication processes between business and IT
3. No clear and excellent communication channels that are crucial for success.
4. No "common vocabulary" among business partners and IT professionals.
5. The techniques for solving the communications problem – e.g. joint application development and close consultation with subject matter experts – aren't sufficient

Category 5

Poor documentation practices

1. Good documentation that is very important for effectively managing and implementing projects does not exist. A requirements document is mandatory.
2. Lack of accurate, legible and complete documentation

3. The requirements document does not truly reflect the needs

Category 6

Poor testing

1. Poor testing – testing fail to catch faults before a system goes live
2. Poorly planned tests
3. Inadequate time to perform tests

Category 7

People issues / behavioural issues / cultural issues

1. People resist change because they do not want to shift from their comfort zones
2. Line-of-business managers and IT professionals approach their daily jobs and new challenges very differently
3. Some people within organisations are more powerful than others through their positions of connections with powerful people
4. Major cause of most software failures is the people rather than technology
5. IT investments fail to deliver business value because of cultural, organisational and leadership gaps between IT and business.
6. Companies fail to recognize the cultural differences between business managers and IT professionals and therefore fail to take steps to bridge those differences
7. An organizational culture and ethos that demonstrates people-friendly principles, respecting the potential of employees, does not exist.

Category 8

Adverse interpersonal relationships

1. Lack of affiliation – business and IT seem to go into different directions
2. Lack of a close relationship between IT and business
3. Relationships are not developed on all levels of the organisation
4. There is no harmony in the group
5. IT departments do not build personal relationships and be caught doing things right

Category 9

Lack of customer ownership / collaboration

1. A lack of customer acceptance and confidence, resistance to change and hidden agendas.
2. Customer resistance because the users do not identify with the software system, and sees it as belonging to them.
3. Business does not feel that the IT project belongs to them
4. End users provide incomplete or wrong data because they are happy with what they are using presently and do not want to change
5. Clients are afraid of having their security or position put at risk
6. There is no business buy-in because the project idea comes out of the IT side

Category 10

Lack of shared goals

1. People are moving in different directions and do not connect and add their energies to each other in bringing about a goal.
2. Different goals – group members have different needs and objectives that are not harmonized

Category 11

Negative attitude towards the IS/IT function

1. Business should recognize that the IT department is more than a cost center or a necessary evil
2. IT does not have a very good track record
3. Business sees IT as a never-ending drain on the bottom line
4. Business thinks IT only wants to embrace the latest in technology
5. Companies have developed an unfortunate and destructive culture of “us” versus “them”
6. IT tries to tell the business what it can and cannot do
7. Because of their negative image, user support for future IT projects becomes more difficult.

8. Business sees IT as a necessary evil – an enabler at best
9. IT is fighting against the business
10. Most IT departments are held in very low esteem
11. Rumours about IT damage projects and long-term goals
12. End users do not trust the developers

Category 12

Lack of strategic alignment

1. IT under-utilisation – business strategy fails to utilize existing IT resources to the fullest extent possible.
2. Strategic goals are not clearly articulated and well-understood throughout the organisation and therefore IT has nothing to align itself to
3. IT shortfall – IT fails to support the business strategy
4. Poorly executed good strategies or well-executed bad strategies
5. The priorities of the IT strategic plan are not linked to the strategy of the enterprise
6. IS/IT is not involved in the development of corporate strategy
7. There is no well-defined corporate strategy

Category 13

Strategic role/involvement of IT manager

1. Few companies have the critical number of enterprise-technology executives within their senior ranks who can recognize how advanced technologies should be strategically deployed to increase market value.
2. IT and business executives are not truly collaborating and focusing on the same measurement goals - any strategy will inevitably go awry in formulation of execution
3. The CIO reports to the CFO, not the CEO
4. Business and IT executives do not comfortably work together constructively.
5. The head of IT is not a member of the board of directors

Category 14

Skills, attributes and attitudes of IT personnel

1. The developers don't understand the business model and see the bigger picture of the business
2. Work overload, skills shortages in the IT function
3. Inability to attract and retain the information technology resources with the required skills set
4. Project team members have to learn the technology as they go
5. Business managers hardly understand the IT organisation's strengths and challenges in managing the company's IT infrastructure
6. Developers are not well grounded in the business
7. Poor training may result in people not co-operating with the information system leading to failure and project abandonment.
8. Insufficient training/education of IT professionals
9. Turnover of staff leads to discontinuity
10. There is not enough emphasis on soft skills in the IT function
11. Technology is too complex for most business managers to understand
12. There is not an attitude of constant refreshing and retraining in the organisation
13. Not enough emphasis is placed on finding people with soft skills
14. There is no commitment to education from the highest levels of the organisation

Category 15

Lack of shared responsibility

1. Business partners and IT professionals should share responsibility for IT project success
2. Business partners and IT professionals should share responsibility for managing risk
3. Business unit participants should be full-time members of the project teams
4. While with any IT project failure the IT department must accept some portion of that responsibility, too often that portion is too large and too restricted.

Category 16

1. Instability of infrastructure
2. Unplanned absence of resources because of breakdowns of equipment and turnover of personnel

3. Unplanned absence of resources because of breakdowns of equipment
4. Insufficient equipment and infrastructure

Category 17

Lack of user involvement

1. The project champion is not involved through the entire lifecycle of the project
2. Lack of user involvement because of behavioural, organizational and political issues
3. Senior managers don't ask questions and challenge assumptions because they don't understand the technical aspects of the project
4. Business unit people do not remain active participants in the development and testing of the project
5. The project champion does not address the business-related issues as they arise
6. Senior managers adopt a "hands-off" policy when it comes to IT projects because it is too technical
7. Senior level sponsors are not on board for the duration of the project.
8. Senior managers not actively involved.
9. People assigned to the project from the business unit do not take their assignments seriously

Category 18

Lack of knowledge transfer between IT and the business

1. Lack of knowledge transfer, so that the person in IT gains knowledge of the business issues and can think of IT in the context of the business, and vice versa for business people.
2. Business people do not have an understanding of IT capabilities - they don't know what is possible and impossible, and they don't think realistically.
3. People get caught up in their work – they move from one project to the other without gathering or applying lessons learned.
4. Business does not empower IT by exposing them to the business needs
5. Meetings are not held to explain business decisions
6. Stakeholders are unable to relate to each other's skills or responsibilities
7. Business unit members or implementation teams do not participate on the team through the initial implementation and into the support phase.
8. Stakeholders do not understand the development process
9. Business has a lack of understanding of IT and their role in its ultimate success

Category 19

Different measures of success

1. Success or failure measured in different way
2. Group members have different perceptions and bias as to what makes a good system
3. The gap between how IT executives think they are performing (against business expectations) and how they are really performing (based on CEO perceptions) is widening

Category 20

Management issues:

Organisation/business management

1. Insufficient management commitment to fund a project, be involved in the project and allocate enough human resources to participate in the project
2. Organisational culture – affects system requirements and system acceptance
3. Corporate leaders are not proficient in managing both profit-and-loss operations and new IT deployments – so-called "enterprise-technology executives"
4. Bad organisational setting and management style - the arrangement of organizational subsystems, the division of labour and hierarchy of authority
5. Business executives do not understand the requirements, risks and rewards of using advanced technologies.
6. The CEO does not have basic knowledge about how IT interweaves throughout the business
7. The management team is not a real team

Category 21

IT management

1. IT executives feel they are under huge pressure if their projects are over budget, late, buggy or inadequate to meet their company's business needs.
2. The CIO does not take up the responsibility to bridge the gap between IT and business
3. The head of the IT group is a manager, not a leader (managing is getting people to do what you want. Leading is getting people to want what you want)
4. Many CIO's do not effectively measure the impact they have on the businesses they support, leaving them vulnerable
5. Poor prioritisation by IT management
6. The CIO does not have detailed knowledge of the organisation's operational units and cannot talk at business level
7. The person with the best knowledge of technology, not business, is the CIO
8. The CIO does not ensure that all members of the team contribute and does not maintain a realistic timetable to meet delivery dates
9. The CIO is not a business person first and a technologist second
10. There is a bad relationship between the CEO and the CIO
11. The CEO does not trust the CIO and does not communicate with him/her frequently

Category 22

Project issues

1. Long or unrealistic time scales
2. Defects in final software
3. Unrealistic project completion date coupled with continually changing requirements
4. A project is signed off on the promise that errors will be fixed later
5. Application complexity
6. Senior managers sign projects off without understanding the benefits and risks associated with the project
7. Inability to realize sufficient value from IT
8. A formal contract is not signed between the organisation and the vendor

Category 23

Project management issues

1. Schedule overruns
2. Poor project planning – inadequate risk management and a weak project plan
3. Incorrect estimates of activity durations
4. Poor project planning
5. Projects not delivered on time and within budget
6. High on-going maintenance for systems
7. Inappropriate level of attention to managing project risks
8. Ineffective application of project standards and processes
9. Poor estimates
10. Lack of organisation's commitment to the system development methodology
11. Premature commitment to a fixed budget and schedule
12. Improper planning, estimating, scheduling and monitoring
13. Failure to establish upper-management commitment to the project
14. Team not physically located together
15. Training lacks practical insight – the skill of project management is knowing when and where to apply the techniques
16. Incorrect assumptions regarding resource availability
17. Inadequate assignment of activity accountabilities
18. The use of new and unproven technology
19. Project is given to the wrong people
20. Low morale within team
21. There is no project management methodology in place
22. Change in key individuals (business sponsor, project manager, vendor manager)
23. Missing or incomplete review and approval activities
24. Weak risk management

25. Taking shortcuts through and around the system development methodology
26. Management of software projects is inadequate
27. Does not provide flexible applications, easy enhancements and reusable code
28. The project team hasn't been assembled correctly
29. Unavailability of needed tools
30. Unsuitable working environment
31. The IT teams are too large

Category 24

Project manager issues

1. Projects are managed singly – like disjoint construction projects
2. Lack of skills and expertise
3. IT project managers do not establish credibility with their business unit peers by demonstrating business process knowledge
4. Inadequate people management skills
5. Experience, authority and stature of PM inconsistent with nature, scope and risks of project
6. The project manager may try to shift the blame for a failed project to others
7. The project managers does not regularly report the status of the project
8. The project manager obscures or hides project-related problems
9. The project manager is not assigned to the project full-time

Category 25

Finances

1. IT allocation decisions made incorrectly
2. Money that is allocated to a project is used carelessly, paying for objects that contribute less or nothing in the project.
3. IT costs not included in the annual corporate budget, i.e. lack of collaboration between the business and technology sides.
4. The IT budget is too low relative to sales

4. Ranking of all the questions

All the issues in all the categories of the questionnaire were ranked according to the number of respondents who strongly agreed and agreed to each issues. The 34 most important issues and the 12 least important issues (overall) are shown here.

IT managers

The 34 most important issues are:

1. Business partners and IT professionals should share responsibility for managing risk
2. Failure to ask the right people the right questions at the right time
3. Business partners and IT professionals should share responsibility for IT project success
4. While with any IT project failure the IT department must accept some portion of that responsibility, too often that portion is too large and too restricted.
5. You also need knowledge transfer, so that the person in IT gains knowledge of the business issues and can think of IT in the context of the business, and vice versa for business people.
6. Users don't know what they really want
7. Unrealistic project completion date coupled with continually changing requirements
8. Scope creep occurs throughout the project
9. People resist change because they do not want to shift from their comfort zones
10. People are moving in different directions and do not connect and add their energies to each other in bringing about a goal.
11. Work overload, skills shortages in the IT function
12. Business should recognize that the IT department is more than a cost center or a necessary evil

13. A lack of clear and consistent definition of the problems leads to the development of systems with which users are dissatisfied.
14. Unrealistically high expectations of users in the face of limited resources
15. Some people within organisations are more powerful than others through their positions of connections with powerful people
16. Group members have different perceptions and bias as to what makes a good system
17. IT executives feel they are under huge pressure if their projects are over budget, late, buggy or inadequate to meet their company's business needs.
18. High on-going maintenance for systems
19. The scope of the project is not well-defined, therefore conflict results
20. High expectations of users are caused by vendor's self-serving claims and the glitter of technology. End-users and IS professionals are often misled by the glitter of new technology and vendors' inflated claims – their focus then shifts from problem solving to working with the latest technology and software packages.
21. Major cause of most software failures is the people rather than technology
22. Business unit participants should be full-time members of the project teams
23. There is a difference between the expectations of end users from computer systems and their actual performance.
24. Unmanaged expectations – not clearly and frequently communicated to all stakeholders
25. Inadequate time to perform tests
26. Business requirements change halfway through the project
27. Success or failure measured in different way
28. Inadequate assignment of activity accountabilities
29. Users change their minds on their perceptions
30. At the heart of the communication problem is the fact that business users understand their business at the business process level, while developers understand it in terms of data structures, etc.
31. A lack of customer acceptance and confidence, resistance to change and hidden agendas.
32. Different goals – group members have different needs and objectives that are not harmonized
33. Business sees IT as a necessary evil – an enabler at best
34. There is not enough emphasis on soft skills in the IT function

The twelve least important issues are:

1. The CIO is not a business person first and a technologist second
2. The project managers does not regularly report the status of the project
3. The CIO does not have detailed knowledge of the organisation's operational units and cannot talk at business level
4. IT shortfall – IT fails to support the business strategy
5. Unsuitable working environment
6. Insufficient equipment and infrastructure
7. The CEO does not trust the CIO and does not communicate with him/her frequently
8. The person with the best knowledge of technology, not business, is the CIO
9. Unplanned absence of resources because of breakdowns of equipment
10. The IT teams are too large
11. Team not physically located together
12. There is a bad relationship between the CEO and the CIO

Business managers

The 34 most important issues are:

1. Business partners and IT professionals do not share responsibility for IT project success
2. Business partners and IT professionals do not share responsibility for managing risk
3. Business unit participants are not full-time members of the project teams
4. There is a difference between the expectations of end users from computer systems and their actual performance.
5. The scope of the project is not well-defined, therefore conflict results

6. Lack of knowledge transfer, so that the person in IT gains knowledge of the business issues and can think of IT in the context of the business, and vice versa for business people.
7. At the heart of the communication problem is the fact that business users understand their business at the business process level, while developers understand it in terms of data structures, etc.
8. People resist change because they do not want to shift from their comfort zones
9. People are moving in different directions and do not connect and add their energies to each other in bringing about a goal.
10. Poor testing – testing fail to catch faults before a system goes live
11. Failure to ask the right people the right questions at the right time
12. Unmanaged expectations – not clearly and frequently communicated to all stakeholders
13. Line-of-business managers and IT professionals approach their daily jobs and new challenges very differently
14. Different goals – group members have different needs and objectives that are not harmonized
15. A lack of clear and consistent definition of the problems leads to the development of systems with which users are dissatisfied.
16. No clear communication processes between business and IT
17. Developers build what they believe is needed, without having any real knowledge of the business
18. Business requirements change halfway through the project
19. High expectations of users are caused by vendor's self-serving claims and the glitter of technology. End-users and IS professionals are often misled by the glitter of new technology and vendors' inflated claims – their focus then shifts from problem solving to working with the latest technology and software packages.
20. Business should recognize that the IT department is more than a cost center or a necessary evil
21. No clear and excellent communication channels, that are crucial for success.
22. Poorly planned tests
23. The developers don't understand the business model and see the bigger picture of the business
24. Business people do not have an understanding of IT capabilities - they don't know what is possible and impossible, and they don't think realistically.
25. Schedule overruns
26. Project goals and objectives are not thoroughly defined and therefore the project requirements are out of context
27. Scope creep occurs throughout the project
28. No "common vocabulary" among business partners and IT professionals.
29. Inadequate time to perform tests
30. Lack of customer acceptance and confidence, resistance to change and hidden agendas.
31. People get caught up in their work – they move from one project to the other without gathering or applying lessons learned.
32. Success or failure measured in different way
33. Poor project planning – inadequate risk management and a weak project plan
34. Incorrect estimates of activity durations

The twelve least important issues are

1. Rumours about IT damage projects and long-term goals
2. End users do not trust the developers
3. The CIO does not ensure that all members of the team contribute and does not maintain a realistic timetable to meet delivery dates
4. Unsuitable working environment
5. The CIO is not a business person first and a technologist second
6. Unplanned absence of resources because of breakdowns of equipment
7. An organizational culture and ethos that demonstrates people-friendly principles, respecting the potential of employees, does not exist.
8. The management team is not a real team
9. The IT teams are too large
10. Insufficient equipment and infrastructure
11. There is a bad relationship between the CEO and the CIO
12. The CEO does not trust the CIO and does not communicate with him/her frequently

Appendix 4
Questionnaire – analysts

Appendix 5

Cover email message to participate in the survey on business- and systems analysis

Dear research participant

The Computer Society of South Africa (CSSA), the Business- and Systems Analysis Special Interest Group (BASA SIG) and the department of Business Applications and IT Management (within the Faculty of ICT) at Tshwane University of Technology (TUT) invite you to participate in an important jointly launched research project. The project has been designed to determine the industry perceptions of business- and systems analysis in South African companies and the professionals following these careers. The Special Interest Group has set the goal to create a professional body and a body of knowledge (BOK) for business- and systems analysts and the results of this survey will be used as a starting point towards such a BOK.

We would like to thank the people who completed the (extensive!) questionnaire during the first round in April and who have given us some very valuable input. Based on these results we compiled a more focused, shorter version of the questionnaire. You will see that we eliminated the confusion added by different definitions of business analysis, systems analysis, the role and responsibilities of the business/systems analyst.

We would greatly appreciate you taking the time to complete this questionnaire to give us information on the world of analysis. The questionnaire consists of three sections covering demographic data, the world of analysis and the competencies and attributes required of analysts. We assure you that your time and valued input into this survey will make a significant difference to the effectiveness of learners, educators and practicing business- and systems analysts. Please also distribute this email to your analyst colleagues and friends to complete.

It should not take you more than 20 minutes to complete all the questions. You can answer one section at a time with breaks in between. Where applicable, please make use of the comments field included in each question to add any important information. The results of the survey will be discussed at a general SIG meeting (contact Gabi at gabi@cssa.org.za or Stephanie at lcistephanie@icon.co.za for details on the SIG meetings).

To complete the questionnaire, go online and click on this link <http://www.peoplesurveys.co.za/body.aspx?do=survey> OR cut and paste the link into your internet browser website field and click enter. A login page should appear.

Your user name is: analysis

Your password is: survey

It is important to enter these words in lower case and do NOT use any capital letters.

If you have any questions about the survey please contact me on 0832718608. If you have any technical difficulties in answering the survey (e.g. you cannot access the comments fields) please e-mail Erez Greenberg at erez@peoplesurveys.co.za

Friendly regards

Nina Evans

Tshwane University of Technology (TUT)

Appendix 6

Demographics – business/systems analysis

Participating companies

Employees from the following 37 companies took part in the survey:

1. Absa bank Group IT
2. Alexander Forbes financial services
3. Autotronix
4. Bell Equipment Co. SA
5. Columbus Stainless
6. Comparex Africa
7. De Beers
8. Dimension Data
9. eBucks.com
10. Epiuse
11. ESKOM
12. First National Bank
13. HSBC Investment Services(Africa)(Pty)Ltd
14. IHD
15. Investec Bank (UK) Ltd
16. IQ Business Group
17. JSE Securities Exchange South Africa
18. Kwazar
19. Land Agricultural & Development Bank
20. Multichoice Africa Pty Ltd
21. Nedbank Ltd
22. Nedcor
23. OIS
24. Optimal Information Systems Pty Ltd
25. Osiris Trading
26. Public financial services agency
27. RCI
28. RENNIES Bank
29. Sage Life Ltd
30. Sasol Polymers
31. SITA (State IT Agency)
32. Spornet
33. Spornet IT
34. Tshwane University of Technology (TUT)
35. TELKOM SA
36. University of the Witwatersrand
37. Vodacom (Pty) Ltd

The main focus area of the respondents' companies were:

Sector	% of respondents
Financial	47
Knowledge and Information Technology	13
Transport	11
Manufacturing (please specify)	6
Education/training	5
Entertainment and Tourism	5
Government	3
Media	3
Other	3
Telecommunications	3
Healthcare	1

Type of IT service provided by the company

Type of company	% of respondents
Provide IT service (outsourcer)	13
Use in-house IT services	74
Use outsourced IT services	13

Participants

Job titles and years experience of the participants

Business/systems analyst	3 years
Deputy Director: Business Systems Analysis	18 months
Business Process Analyst	1 year
Owner	3 years
Director	2 years
Specialist: business analysis	2 months
Specialist Business Analyst	9 months
Analyst	6 years
Manager (Process Management)	15 months
Project Manager	5 years
Deputy Director: Business Analysis	3 years
Director – Projects	5 Yrs
Analyst - Planning and process improvement	4 years
Analyst	7 yrs
Requirements Engineer	8 years
After Sales Systems Analyst	2 years
Competency Specialist – Analysis	7 years
Business/technical analyst	one month
Analyst	6 years
Analyst	2 years
Chief systems analyst	23 years
Senior Business Analyst	2years
Product Specialist	1 year
Planning Business Process Specialist (BPS)	1 year
Business Intelligence Analyst	2 years 3 months

University of Pretoria etd – Evans, A (2004)

Business Analyst (Development)	5 Months
Senior developer	18 months
Specialist Software Systems	4 years
MIS Analyst	15.5 years
Business Analyst	2.5 years
Business Analyst	4 years
Manager Process Improvement	3 years
Manager: Automation and Manufacturing systems	12 months
Product Specialist	1 year
Business Analyst	3 years
Business Analyst	8 years
Systems Analyst	+/_ 5 years
Senior Systems Analyst	2 Years
Product Specialist/Business Analyst	1 year
Data & System Analyst	3 years
Business Analyst - Projects & Problem Resolution	3 years
Business Analyst	1 year, 8 months
Business Analyst	1yr
Manager - Business Analysis	2 years
Business Analyst	4 years
Consultant/Analyst	1 yr, 6 months
Solutions Analyst	4 years
Business Analyst	3 1/2 years
Business Analyst	5 years
System Analyst	10 years
MU Specialist	2 years
Product Specialist (Business Analyst)	3 years, 3 months
Consultant	1 year
Consultant	1 year
Business Analyst	4 years
Product Integrator - Project Manager	6 weeks
Senior Consultant	1 year
Support controller	7 years
Business Analyst Project Manager	6 months
Business Design Consultant	5 years
Business Analyst	18 months
Senior Business analyst	2 years
Project Manager/Business analyst	2.5 years
Business Analyst	3 years
Systems Analyst	2 years
Business analyst	8 years
Senior Systems analyst	6 years
Business Analyst	4 years
Lead Analyst	5 years - various companies
Business Analyst	1y, 4y prior
Business analyst	1 YEAR 8 MONTHS
Analyst	8 years
Systems Analyst	1.5 yeas
Senior lecturer	3 years
Business Analyst	5 years

Previous experience of participants

Head of Data Warehouse development 2 years
 Data Warehouse analyst 3 years
 Programming - 5 years

Project manager - 8 years business analyst - 10 years

Analyst - Programmer : 2 years
Business Analyst : 10 years

IT specialist 4 years, it programmer 2 years,
IT Business Analyst 2 years,
IT Project Manager 1 year,
IT line man (BA group) 3 years

Senior Business Analyst - 2 years
Senior Analyst - 4 years
Systems Consultant - 2 years

Civil Draughtsman - 12 years
Plant Maintenance (IT)- 3 years
Engineering Assistant (IT)- 2 years
Strategic Planning (IT)- 1 year
Production Planning (IT) - 3 years
IT - 6 years

Manager (Process & IT Deployment) - 2 years

Project Manager (Production Planning Systems) - 5 years

Middle Manager - 3 years

Chief Programmer - 7 years
Programmer / Senior Programmer - 8 years

Project Engineer, 11 yrs

Strategic facilitator - 1 yr

Programming - 3 yrs
Supply chain analyst - 1yr

Customer instructing development house 3 years

Project leader - 3 years

Programmer 5

Project Manager - 2 years;
Business Analyst - 6 years;
Accountant/ Fin. Manager - 8 years;
Software consultant (system configuration included) - 6 years

Technical support - 7 years Customer relationship management - 1 year

Clerical work in operational environment - 24 years

Programmer/Systems Engineer 13 Years

Systems analyst/programmer computer sciences 2 year
Systems analyst/programmer 7 years
Analyst/programmer 5 years

Corporate Finance Manager - 2years
Financial Manager - 2years
Accountant - 3years

Business Analyst - 4 years

Sales and Operations Planning (4 Years)

Statistician 5 years,
IT manager 5 years,
BI Consultant 12 years,
Data architect 6 months,
Director 1 year

Systems Analyst 3 - Years

Consultant - 25 years

Analyst Programmer (5yr) -
Manager Software systems (1,5yr)-
Change Management (Team Member)- 1 yr

Finance And MIS Junior Manager

Business Analysis - 3 years
Programmer - 2 years

Training 3 years
Configuration Analyst 2 years
Test Analyst 1 year

General Banking Experience 21 years

Telecommunications technician - 3 years
Control & Instrumentation engineer - 8 years
Software engineer - 5 years

Business analysis 1 year

Special Projects - SubProject Manager,
Team Leader,
Subject Expert - 3 years

Project Manager 10 years;
Programmer 3 years;
Systems Analyst 10 years;
Bureau Manager 3 years;
Business Analyst 10 years;
Bookkeeper 3 years

Banking 10 years,
Support 5 years

Business Analyst - 5 Yrs
Support manager - 7 Yrs
Project manager - 5 Yrs

Business Systems Analyst (6 years)

Project Manager (3 years)

Data Analyst (1 year)

DBA (1 year)

Analyst Programmer (1 year)

Project Engineer - 4 years

System Developer - 3 years

None

Trainee Accountant-1,5yrs

Junior Business Analyst-6 months

Developer/Analyst 1 year

Normal banking duties - 5 years

Maintenance analyst 3 yrs

Analyst - 6 years

Business and Systems Analysis - 10 years

Analyst Sub Project Manager - 2Years

Project Co-ordinator - 3 years

Admin - 14 years

Developer - 4 years

Analyst - 6 years

BA - 4 years

Business / System / Project Manager - 6 Years

System Analysis/Design/Development - 1 year

Product Support Manager/System Architect - 3 years

System Integrator/Development - 2 years

Software Developer - 2 years

BA - 3 years

Programmer 2 years

Analyst Programmer 4 years

Systems Analyst 2 years

Software Project Manager 1 year

System Engineer 4 years

Software Engineer 13 years

Helpdesk(2yrs)

Banking (1.5yrs)

Project Manager - 2.5 years

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Programme Manager - 3 years
Systems Manager - 7 years
Business Analyst - 10 years

Strategic/Corporate project leader

Business Analyst - 5 years

Systems analyst - 10 years
Project manager - 5 years
Manager 5 years
IT architect 10 years

Programmer - 3 years DBA - 1 year
BI Consultant - 4 years
Data Warehouse Specialist - 3 years

General Banking

Programmer - 4 years

QA and Testing - 1,5 years

Project Manager - 3 Years Analysis - 10 years
Programming - 12 years
MIS consultant 3 years
Methodologies consultant 1,5 years
Financial consultant 6 years

Always Financial services (13y), 8 years lines experience prior to going IT route

Bank branch teller - 2years

Manager in business 10 yrs

Programmer, system designer, lecturer

2 years experience in the business environment

Academic qualifications

Highest qualification	% of respondents
St 10	13
National certificate	24
National diploma	13
Degree	26
Honours degree	18
Masters degree	5
Doctorate	1

Formal training in other areas

Skill	% of respondents
IT skills	89
Business skills	66
Interpersonal skills	59

Department within the company

Department	% of respondents
IT department	66
Business department	28
Independent consultant	6

Responsibilities of participants

Major responsibility	% of respondents
Both business- and systems analysis	42
Business analysis	40
Systems analysis	9
Other	9

Host departments of the participants

Major responsibility	IT department (%)	Business department (%)	Independent consultant (%)
Both business- and systems analysis	72	6	21
Business analysis	56	34	10
Systems analysis	71	0	29

Appendix 7

Results of the survey – business and systems analysis

Major responsibilities of analysis (ranked in descending order of importance)

All the respondents:

Responsibility in current job	Frequency (f)
Extract and document user requirements	71
Analyse/record existing business administration processes	64
Identify needs for new information systems and/or technology	63
Evaluate different solutions	62
Determine the impact of new systems on the business	57
Testing (User acceptance) New Line	49
Design new business administration processes	44
Activity diagrams	43
Documentation of Computer Systems	43
Testing (IT Development)	42
Training users	39
System implementation (Business usage/administration)	38
Use cases	37
System implementation (Hardware/software)	27
Install, maintain and administer existing computer applications	26
Link Computer System activities to Business Administration Activities	25
State diagrams	20
Link Computer System activities to the Accounting general Ledger	17
Place Computer Systems Activities/functions within the organogram	17
Review Job Description content as a result of computerisation	11

Business analysis:

Responsibility in current job	Frequency (f)
Extract and document user requirements	30
Analyse/record existing business administration processes	27
Determine the impact of new systems on the business	25
Identify needs for new information systems and/or technology	23
Evaluate different solutions	22
Design new business administration processes	22
Testing (User acceptance) New Line	19
Activity diagrams	17
Use cases	17
System implementation (Business usage/administration)	15
Training users	15
Testing (IT Development)	12
Documentation of Computer Systems	10
Place Computer Systems Activities/functions within the organogram	7
Install, maintain and administer existing computer applications	6
Link Computer System activities to the Accounting general Ledger	6
Link Computer System activities to Business Administration Activities	6
State diagrams	5
System implementation (Hardware/software)	5
Review Job Description content as a result of computerisation	5

Systems analysis:

Responsibility in current job	Frequency (f)
Documentation of Computer Systems	7
Extract and document user requirements	6
Evaluate different solutions	6
Testing (IT Development)	6
Identify needs for new information systems and/or technology	5
Activity diagrams	5
System implementation (Hardware/software)	5
Analyse/record existing business administration processes	4
Install, maintain and administer existing computer applications	4
Determine the impact of new systems on the business	4
State diagrams	3
System implementation (Business usage/administration)	3
Testing (User acceptance) New Line	3
Use cases	3
Training users	3
Design new business administration processes	2
Link Computer System activities to Business Administration Activities	2
Link Computer System activities to the Accounting general Ledger	1
Place Computer Systems Activities/functions within the organogram	1
Review Job Description content as a result of computerisation	1

Both business- and systems analysis:

Responsibility in current job	Frequency (f)
Extract and document user requirements	31
Analyse/record existing business administration processes	30
Identify needs for new information systems and/or technology	30
Evaluate different solutions	29
Testing (User acceptance) New Line	25
Determine the impact of new systems on the business	24
Documentation of Computer Systems	23
Testing (IT Development)	22
Activity diagrams	21
Design new business administration processes	18
Training users	18
System implementation (Business usage/administration)	17
Link Computer System activities to Business Administration Activities	16
Use cases	15
Install, maintain and administer existing computer applications	13
System implementation (Hardware/software)	13
State diagrams	12
Link Computer System activities to the Accounting general Ledger	10
Place Computer Systems Activities/functions within the organogram	8
Review Job Description content as a result of computerisation	4

A number of questions were asked to determine the viewpoints of analysts on different matters. The responses were as follows:

Do you need an IT background to do your current job?

	Percentage	f BA	f SA	f BASA
Essential	53.16	10	4	23
Useful, but not essential	44.30	20	3	10
Don't know	0	0	0	0
Not really necessary	1.27	1	0	0
Not necessary at all	0	0	0	0

Do you apply business knowledge to increase the effectiveness of computer systems?

	Percentage	f BA	f SA	f BASA
Very often	62.03	17	3	23
Often	31.65	14	4	6
Don't know	3.80	0	0	3
Seldom	1.27	0	0	1
Never	0	0	0	0

Do you act as a liaison between business people who have a business situation and technology people who provide IT solutions?

	Percentage	f BA	f SA	f BASA
Very often	67.09	25	3	21
Often	25.32	5	2	10
Don't know	0	0	0	0
Seldom	5.06	1	2	1
Never	0	0	0	0

Are you directly involved in software development?

	Percentage	f BA	f SA	f BASA
Very often	24.05	3	4	10
Often	29.11	7	2	12
Don't know	1.27	0	0	1
Seldom	30.38	15	1	7
Never	13.92	6	0	3

Do you use both electronic- and physical document flows between activities of people when analysing a business?

	Percentage	f BA	f SA	f BASA
Very often	35.44	9	2	13
Often	41.77	14	4	14
Don't know	8.86	3	1	2
Seldom	8.86	4	0	3
Never	1.27	0	0	0

Do you analyse the business requirements before specifying a system (i.e a customised solution or existing package)?

	Percentage	f BA	f SA	f BASA
Always	64.56	18	4	23
Most of the time	24.05	8	1	10
Don't know	0	0	10	0
Seldom	7.59	5	1	0
Never	2.53	0	1	0

Are you responsible for producing technical requirement specifications?

	Percentage	f BA	f SA	f BASA
Very often	15.19	2	2	8
Often	29.11	8	2	12
Don't know	1.27	0	0	0
Seldom	27.85	9	2	10
Never	22.78	10	1	3

Do you actively participate in the decision making with senior user management towards automation strategies?

	Percentage	f BA	f SA	f BASA
Very often	1.27	5	3	11
Often	26.58	16	2	9
Don't know	39.24	2	0	1
Seldom	3.80	7	2	9
Never	24.05	1	0	3

Do you consider yourself to be

	Percentage	f BA	f SA	f BASA
A technical expert with some business knowledge	43%	6	6	17
A business expert with some technical skills	54%	24	1	16

Do you think there is a need for academic training of students in a combination of IT skills, business skills and interpersonal skills?

	Percentage	f BA	f SA	f BASA
Strongly agree	68.35	18	5	25
Agree	27.85	13	2	6
Don't know	1.27	0	0	1
Disagree	1.27	0	0	1
Strongly disagree	0	0	0	0

The need for academic training linked to the qualification of the respondents

Qualification	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
Matric	40	40	0	10	0
National Certificate	53	47	0	0	0
National Diploma	70	30	0	0	0
Degree	76	24	0	0	0
Honours degree	86	7	7	0	0
Masters	100	0	0	0	0
Doctorate	100	0	0	0	0

Which of the following concepts/techniques do you use in your job?

Concept	f All	f BA	f SA	f BASA
Value chains / end-to-end processes	56	24	6	23
Decomposition and partitioning the above	36	17	4	14
Documentation of each task in detail with data, controls and business rules	53	21	5	24
Entity relationship diagram / logical data model	55	21	5	25
Functional decomposition	47	21	4	19
Object orientation	33	10	1	18
Business event data flow diagrams	50	20	4	22
Agile methodologies	6	2	0	4
Use case	32	14	1	14

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Process flow charts / swim lanes	60	25	6	26
Narrative text	27	15	1	9
IDEF	17	10	1	5
Converting analysis models to design models	27	8	2	16
Structured design	26	5	2	17
Self-developed design techniques	21	3	2	14
Identification of the automation boundary	21	9	1	10
Object Oriented design	22	4	2	14
Develop the pseudocode	14	4	1	9
Document the data dictionary	29	11	1	16
Business process management	53	22	2	26

Which of the following technical (IT related) skills do you use in your job?

IT skill	f All	f BA	f SA	f BASA
ERP software	15	6	2	6
MS Office	77	31	7	33
MS Project	64	26	6	28
MSQuery	12	1	1	7
Visual Basic	21	5	3	10
MS FrontPage	13	3	1	7
SQL	33	7	5	18
UML	19	8	0	8
HTML	16	4	3	6
ASP	8	2	1	4
Java	5	0	2	2
Corba	0	0	0	0
Sun Solaris	1	0	0	1
UNIX	4	0	0	3
CASE tools	26	12	1	13
Data modelling tools	44	15	3	20
RUP (Rational Unified Process)	20	9	1	7

Indicate whether you apply knowledge of the following principles?

Principle	f All	f BA	f SA	f BASA
Enterprise Resource Planning	22	10	1	10
Relational database	50	19	5	23
Client-server	36	11	2	19
Database management	41	13	4	21
Web application design/development	19	5	1	10
Data modelling	53	22	5	23
Object oriented analysis/development	37	13	3	18
Data warehousing	24	8	2	13
Shell scripting	3	0	1	2
Strategic thinking	37	14	3	16
E-commerce	17	7	0	7
Software lifecycle (SDLC)	55	23	4	22
Metrics preparation and analysis	13	3	0	8
Risk assessment	45	19	5	17
Data Redundancy	21	8	2	9
Supply chain management	16	6	0	9
Quality management	43	15	4	20
Change management	52	25	2	21
Cost management	27	10	1	12
Financial management	24	13	0	8

From the following list of non-technical skills, please identify ten that are most required in your job

Non-technical skill	f All	f BA	f SA	f BASA
Business sense	67	30	5	29
Analytical skills	74	30	7	31
Research skills	38	18	2	15
Detailed problem solving skills	59	21	7	27
Multitasking	40	16	4	15
Stress management	15	4	2	8
Learning skills	13	5	1	4
Negotiation skills	31	12	2	12
Teamwork and -leadership	53	22	4	22
Facilitation skills	43	18	3	20
Conflict management	24	8	3	9
The ability to work well with people	41	20	2	15
Written communication skills	60	24	6	25
Oral communication skills	42	15	6	17
Listening skills	54	20	5	23
Ability to communicate with non-technical users	45	18	4	21
Technical communication	25	7	3	12
Management and leadership	15	5	1	6
Project Management skills	32	12	3	14
Relationship management skills	19	9	0	9

From the following list of personal attributes, please identify ten that are most required in your job

Attribute	f All	f BA	f SA	f BASA
Proactive	63	26	6	27
Sound judgement	44	17	5	18
Tact/discretion	36	13	5	15
Initiative	55	21	5	24
Creative	41	16	3	18
Self-motivated	60	19	6	28
Team player	56	24	4	26
Innovative	43	14	6	19
Trustworthy	33	13	3	15
Flexible and adaptive	50	18	4	22
Detail oriented	37	17	4	15
Ethical	24	6	3	13
Strong interpersonal relations	39	18	1	15
Action-oriented	30	9	3	14
Open-minded	48	18	5	21
Sense of urgency	21	11	1	9
Mature	30	15	2	10
Take responsibility for own performance and development	44	20	3	16
Value diversity	10	5	1	3
Deal with reality	22	9	0	11

Select the ten most important reasons for Business-IT relationship problems.

All respondents

Reason	Frequency (f)
Lack of Communication between IT- and business	50
Project scope changes (changing business needs / technology)	49
The real business need is not understood and solved (ineffective requirements specification)	47
Lack of knowledge transfer between IT and the business (understanding each other)	37
Insufficient client expectation management	36
Lack of strategic alignment between IT and business strategy	32
Lack of business expert involvement in the process	32
Poor documentation practices	30
Top management doesn't take ownership of the solution	30
Lack of shared goals and responsibility	30
Poor testing practices	29
People issues / behavioral issues / cultural issues (politics, power, culture)	28
Financial constraints (e.g. budgets, insufficient funds)	28
Project management issues (e.g. bad planning, risk management)	27
Different perceptions of the measures of success	24
IT Project issues (e.g. complexity, time scales)	24
Negative attitude towards the TS/IT function	18
Insufficient skills, attributes and attitudes of IT employees	17
Organisation/business management problems	16
Project manager issues (e.g. skills, training)	12
Interpersonal relationship problems (trust, empathy, affiliation)	11
IT management problems	10
Equipment and infrastructure problems	8
IT manager/CIO not part of strategy formulation team/board of directors)	6

Business analysis

Reason	Frequency (f)
Lack of Communication between IT- and business	19
The real business need is not understood and solved (ineffective requirements specification)	17
Project scope changes (changing business needs / technology)	16
Lack of knowledge transfer between IT and the business (understanding each other)	16
Lack of shared goals and responsibility	14
Lack of business expert involvement in the process	14
People issues / behavioral issues / cultural issues (politics, power, culture)	13
Top management doesn't take ownership of the solution	13
Insufficient client expectation management	11
Project management issues (e.g. bad planning, risk management)	11
Poor documentation practices	10
Lack of strategic alignment between IT and business strategy	9
Interpersonal relationship problems (trust, empathy, affiliation)	8
Different perceptions of the measures of success	8
Financial constraints (e.g. budgets, insufficient funds)	8
Poor testing practices	7
Organisation/business management problems	7
IT Project issues (e.g. complexity, time scales)	7
Insufficient skills, attributes and attitudes of IT employees	6
Project manager issues (e.g. skills, training)	6
Negative attitude towards the TS/IT function	4
IT management problems	3
IT manager/CIO not part of strategy formulation team/board of directors)	2
Equipment and infrastructure problems	2

Systems analysis

Reason	Frequency (f)
IT Project issues (e.g. complexity, time scales)	6
Financial constraints (e.g. budgets, insufficient funds)	6
The real business need is not understood and solved (ineffective requirements specification)	5
Project scope changes (changing business needs / technology)	5
Different perceptions of the measures of success	5
Lack of Communication between IT- and business	4
Poor documentation practices	4
Poor testing practices	4
Lack of strategic alignment between IT and business strategy	4
Lack of knowledge transfer between IT and the business (understanding each other)	3
Project management issues (e.g. bad planning, risk management)	3
Top management doesn't take ownership of the solution	2
Lack of shared goals and responsibility	2
Insufficient skills, attributes and attitudes of IT employees	2
Equipment and infrastructure problems	2
IT management problems	2
Insufficient client expectation management	1
People issues / behavioral issues / cultural issues (politics, power, culture)	1
Negative attitude towards the TS/IT function	1
Lack of business expert involvement in the process	1
Organisation/business management problems	1
Project manager issues (e.g. skills, training)	1
Interpersonal relationship problems (trust, empathy, affiliation)	0
IT manager/CIO not part of strategy formulation team/board of directors)	0

Business and systems analysis

Reason	Frequency (f)
Project scope changes (changing business needs / technology)	24
Lack of Communication between IT- and business	24
The real business need is not understood and solved (ineffective requirements specification)	21
Insufficient client expectation management	19
Poor testing practices	16
Lack of strategic alignment between IT and business strategy	15
Lack of knowledge transfer between IT and the business (understanding each other)	15
Lack of business expert involvement in the process	14
Poor documentation practices	13
People issues / behavioral issues / cultural issues (politics, power, culture)	11
Top management doesn't take ownership of the solution	11
Negative attitude towards the TS/IT function	11
Lack of shared goals and responsibility	11
Financial constraints (e.g. budgets, insufficient funds)	11
Different perceptions of the measures of success	9
IT Project issues (e.g. complexity, time scales)	9
Project management issues (e.g. bad planning, risk management)	8
Organisation/business management problems	7
Insufficient skills, attributes and attitudes of IT employees	6
IT management problems	4
IT manager/CIO not part of strategy formulation team/board of directors)	3
Equipment and infrastructure problems	3
Project manager issues (e.g. skills, training)	3
Interpersonal relationship problems (trust, empathy, affiliation)	2

Definitions of business analysis and systems analysis

Business analysis:

Analyse current business practices
Analyse problems
Analyse and define the Business in terms of the systems approach and/or process modelling
Analyse current business processes
Define organisational values & Events
Focus on the business processes at work in an organisation, not current designs
Analyse how business users do their work and how to increase their efficiency and resource utilisation such as labour, time and equipment.
Analyse activities, processes, operations, etc.
Identify current business practices
Benchmark to see how these practices fit
Deal with facts pertaining to processes
The "what" and "HOW" of things
Identify all processes that add value to the organisation.
Analyse processes critical to business Provide critical information on critical points in defined process
Understand your business environment and IT Project management & workflow strategy & planning
Analyse the current business processes and investigate/implement better solutions
Know the business processes and defining requirements of new processes.
Identify the business strategy, determine a solution whether electronic or not in line with strategy
Determine the business objective, finding out what is currently being done and what business require
Understand business, processes & systems that the business uses
Understand the way a company operates, how they use technology, etc
Investigate the business products to determine the best way to attain more profit.
Apply specific business background/knowledge
See the big picture and break this into smaller detailed "chunks"
Comprises all aspects of business performance e.g. strategy, structures, technology, systems, HR, etc.
Use common communication methods (business and IT) to define processes, data rules and interfaces
Understand and define business requirements
Analyse what the user wants from the system
Analyse business requirements
Determine business requirements for purposes of feasibility, risk and impact analysis
Identify requirements for improvements
Analyse the requirements of the business
Understand the client's requirements
Analyse business requirements in terms of strategic objectives
Design and maintain a requirement from business into the designated lines of delivery
Eliciting business needs as embedded in existing processes or as needed extensions of existing processes
Understand the business processes and requirements that drives the business.
Identify and analyse the business requirements

Obtaining requirements from the business users
Consult users
Establishment of business requirements to support a product or service offering
Obtain the exact requirements from the user
Analyse the Business Requirements and design the BSS in such a way for the "coders" to develop
Requirements management
Identify a business's requirements in terms of 'what' they need to function as a business – logically
Use software tools and interviews to document the business processes and requirements of clients
Assisting the Business User in specifying their Business Requirement
Analyse business requirements, provide fast, effective, flexible solutions
Determine the stakeholder requirements
Analyse business requirements
Specify the business requirements (what needs to be done)
Research and compile business specifications
Document and analyse User Requirement Specifications and Business Requirement
Specifications
Understand and interpret a business need or requirement
Define business requirements
Documents requirements
Analyse and document business processes
Document requirements in functional requirements
Produce structured documentation of business requirements
Identify, analyse and document the business requirements
Document requirements in a clear and understandable way.
Convey the need as an IT requirement
Improve business processes
Facilitate creative ideas for business solutions
Provide the most effective process for the user
Investigate the best solution (automated or not)
Model new business processes
The description of business processes performed to support a customer request for action
Model processes with system & people attributes to deliver these events
Define a business problem and recommended solution.
Re-engineer the business
Document, verify and support implementation of requirements
Make recommendations
To find a better way of doing things which eliminates all possible errors
Facilitate the analysis of business processes and the re-engineering of those processes.
Fully understand the business processes and specify how they can be automated and improved upon
Define all business requirements and follow through to ensure that the requirements are met.
Analyse & document current Business procedures and systems to provide solutions to business requirements

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Analyse business requirements and suggest system solution - on a high level
Providing the BEST solution to the user's requirements, having a minimal impacting on time & money.
Focus more on optimising business and the people aspect.
Find the best BUSINESS solution
Analyse & create a solution that satisfies the users' need/requirement
Review the business needs with the view to providing solutions - implement manually / automated
Link business with IT
The missing link between business and IT
Liase with business to extract the requirements for the new system and pass requirements to IT
Gather requirements for a solution, verify that it is correct and communicate to software developer
Provide a common understanding to business people and technical people
The interface between business and technology to ensure user satisfaction.
Facilitate a compromise between various stakeholders
Manage the entire SDLC with the exception of the purely technical component (tech spec and coding)

Systems analysis

In the opinion of one of the respondents, a systems analyst should report to the business analyst. Their functions are:

Technical analysis
Technical analysis of a system / systems to best optimise and utilise the functionality available to the business' benefit.
Analyse and define an application in terms of system models and specifications during the Analysis Phase of the SDLC.
The technical description of systems needed to enable the business processes described in business analysis
Analyse all IT systems in terms of effectiveness, usability, providing the right information, satisfying the need, providing management reporting, mechanisms.
Analyse a computer system and write specifications to enhance the computer system
Analyse current IT Infrastructure to see how it serve the needs of the current business processes
Analyse and document system needs with inputs from the BA
Analyse existing systems that should cater for these needs and the recommendation of such a system or a system to be developed, the provision of information to the system architect/ configurator
Business requirements
Functional requirements
Analyse IT systems and their relation to the business system.
Analysis of the old, impact analysis of the new
Analyse systems IT/Business to ensure compatibility/similarity for easy access to data
Look at actual code to determine how best to improve systems
To ascertain how the system, technical, functions and how and where the new enhancement will fit
Ensure that systems are designed to support the business processes and that it addresses the business requirement & problems.
Analyse whether perceived system problems are actually related to systems or to people. Thus, linking closely to the BA role.
Assesses whether the system is capable of change or new design as specified by business analyst
Provide technical specifications based on business requirements.
Any systems analyst should be able to perform the business analyst function also.
Analyse current & new systems to provide and design solutions to business requirements as documented by Business analysts.
Going into a lower lever of detail, analyse exactly what the system should do.
KNOW by hart the IT side of the business
Analyse the systems used to deliver an optimised business process
Know and understand the business processes, and then see ways in automating manual processes that can be beneficial to the company.
Assist business analysts in defining the processes,
Technical understanding
To understand a business need and interpret it into a technical requirement
Understand the functionality of the systems used by businesses to provide a service to the client.
Have a good understanding of the business product and the a high level understanding at a technical level of the systems involved.
Analysing the systems

Analyse the IS/IT systems (software, code and hardware) of clients in order to optimise
Analyse system data (I/O), flow, data integrity, warehousing and accessibility of data
Analyse the business requirements in a systems context to a level of detail where programming can commence
System investigation to determine the best way of delivering a software/hardware solution based on customer requirements
The IT/IS aspect of business analysis
Analyse to see how feasible is the solution.
Translate user requirements into functional specification
Based on the analysis, check if it conforms to the business need
Make recommendation of possible routes to follow.
Documentation
Formulate Technical specification Assess Application Architecture Fit Evaluate / spec impact on existing systems
Formulate Test Plan Cycles
Determine System requirements from Business requirements
Take the BRD above and then structuring it into a system specification and then designing it into the data base eventually producing detail program specifications for the developers to program
Develop quality system documentation to ensure meeting of user needs.
Take business case and translate into technical requirement and view how architecture, system software, tables, processes etc will be affected with changes to the core system and evaluate system impact, system response etc.
Map the processes, and business information requirement to the systems architecture and data structures in a way that enables IT to build the correct business solution
Design the technical solution and solve business problems
Produce Technical Design and Documentation of Business Requirements
Design system solution to business problem - analyse system impact and architecture - develop / implement the system
It's an activity of a solution design phase, delivering on the URS/BRS
Design and code the newly engineered version of the program.
Construct data models, process flows, use cases and state transition diagrams/entity life cycles to support the business needs in a way that will preserve the firm's existing technological investment, and extend it in a disciplined and cost-conscious way.
Interpret the processes & requirements from business
Create solutions or advise business on the possible system constraints.
Finding the correct solution for the requirements
Assist in defining the physical and the logical design system according to requirements and ensure that they are workable.
Apply the business analysis unto the computer system.
Must be able to make recommendations in line with what the system can do and space availability.
Do technical specifications
Find the best technical solution for the business requirement
Specify the system requirements (how the system will be designed to cater for an ultimate solution for the business needs.

Define the business requirement in a current or new computer system
Converting the ‘what’ into the ‘how’ i.e. the physical component
Define a system/solution to meet the business analysis requirements defined by the business strategy.
Look at existing systems and re-engineering them from a technical perspective
Analyse the architecture that is used in an organisation and propose the required architecture design that is to be optimal in order to provide an effective and efficient solution for the organisation.
Derive technical requirements from the business requirements
Design a system solution in answer to the Business Requirement
Investigate/implement better systems.
Technical solution evaluation/systems architecture & design considerations/tech spec
Automating solutions within the framework of the system to (1) ensure user/client needs are met and (2) ensure system remains stable / flexible and is easily enhanced
Produce data flow diagrams, an interface design and other systems requirements
Ensure that the future business IT needs are established.
Compile application
Provide an effective and accurate system for the needs of the business process
IT specific. Advanced programmer who matched business requirements with system capabilities.
Link specific implementation attributes to business processes (e.g. RACI and system requirements)
Compile Physical Data Models
Define Security & Control Requirement
To analyse the need for, develop & introduce systems that automate as much as possible reducing human inconsistencies and improving control and reporting
Improvement of systems deliverables
Deal with the way information is transformed from data to information, storage, layout, etc.
Identify what type of software and/or hardware would best suit the business requirements to satisfy the customer.
Implement the solution.
Testing
Test the newly engineered version of the program.
Conduct Integration Testing User-Acceptance Testing
Testing the system after creating the Business Systems Specification and test plan together with the system builders (Unit testing, System integrated testing.) Assist with User acceptance testing and implementation.
Unit- and integrated testing.
Training
Prepare Training Material
Conduct Functional training
Mentor development staff and ensure delivery of the finished product in line with the business needs
Provide support to business during UAT and implementation.
Liaison between business and IT people
Close liaison between business & development team during development
Act as the in-betweener between the systems architect and business in order to understand the requirements and delivering the best solution.