

## TWEEDE DEELTENTAMEN INLEIDING GEGEVENSVERWERKING

Faculteit der Exacte Wetenschappen – Vrije Universiteit – 29 mei 2006 – 15.15-17.15

Er mogen geen hulpmiddelen (rekenmachines, formulebladen e.d.) gebruikt worden bij het beantwoorden van de vragen. Succes!

Eindcijfer = ((totaal/ (32)) \* 9) + 1

### Open vragen (20 punten)

Het Nederlandse referentiemodel om bancaire zaken af te handelen is al bijna weer aan vervanging toe: de digitale acceptgiro is in opkomst. In ontwikkelingslanden waar de juiste infrastructuur aanwezig is wordt dat postale giro model overgeslagen en direct overgegaan op mobiel bankieren, getuige de Wizzit case ("my bank in my pocket"), aangezien in sommige landen veel mensen wel een mobiele telefoon hebben, maar geen postkantoor in de buurt en zo door het sturen van een bericht betalen.

Lees nauwkeurig het volgende interview.

Wizzit has done its homework, says Mphahlele

By Ann Crotty

After three years of research and preparatory work, Wizzit Bank was launched last November with the slogan: "My bank in my pocket." It was the first cell phone-based banking facility in the South-Africa and was designed to provide the unbanked and underbanked with an affordable alternative to what was on offer from the mainstream banks.



Pakie Mphahlele, who is the chief executive of Wizzit, is passionate about the product, which he eats, sleeps and breathes. Much of the three years of preparation, he says, was spent designing a product that fitted what members of the target market said they needed from a banking account and also in dealing with the many regulatory and institutional hurdles involved in setting up a small banking operation.

*From nowhere a year ago we now seem to have a whole range of cell phone banking products from which to choose. Where does Wizzit fit in the marketplace?*

Wizzit can be used by anybody, on any network and any phone, who wants to pay for transactions or get cash out of their account, but it is primarily aimed at the unbanked and the underbanked because it is an extremely easy and cost-effective way of paying for transactions.

*For example?*

Well, if you want to top up your prepaid cell phone card, you can do it without going anywhere, you can just organise the payment using your cell phone and Wizzit account details. If you have a Wizzit account, you can use a cell phone to send money to a friend or pay an account. All you need is the other party's account details and bank branch number. Even better, if they are Wizzit account holders, all you need is their cell phone number. So you don't have to stand in queues and you don't have to carry cash around. And you can also get your salary paid into your Wizzit account. If you want to deposit money into your account, you can do so at any post office or branch of Absa or the South African Bank of Athens.

*But can't I do all that with the cell phone product of First National Bank (FNB) or with MTN Banking?*

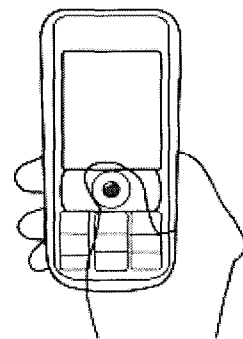
Yes, you can if you have an FNB account and for MTN you would need a fifth-generation [handset] with a 32k SIM card. But our product is designed for individuals who don't have a bank account and who might only have one of the early generation cell phones, often with only 16k SIM cards, and who are also probably relying on pay-as-you-go access to one of the three cell phone companies. This is the profile of the average unbanked or underbanked customer that we are targeting.

*How do you define underbanked, and what size of market are you looking at?*

A lot of people who have bank accounts have them mainly to receive a pay cheque, which they access by queuing up at an ATM and they don't use the account for anything else. According to Finmark Trust, which is funded by the British government and has done a huge amount of work aimed at bringing more people into the banking community, there are between 14 million and 16 million people in the unbanked and underbanked market in this country. This represents 60 percent of the estimated 28 million people who are 'bankable'. So far, it's estimated only 12 million of those 28 million are 'banked'.

*Why did it take from early 2002 to November 2004 to launch Wizzit?*

Our starting point was our determination to find an affordable solution to the unbanked problem. But it wasn't just about affordability, we had to make sure the product was what the market wanted and was appropriate. So we did extensive research, much of which involved talking to people in our target market. What was needed was technology that involved no additional expense for the customer. This meant that we had to be able to use any cell phone and we certainly could not limit the market to individuals who had cell phone contracts; it had to include pay-as-you-go. In talking to the unbanked, it became evident that the big need was for

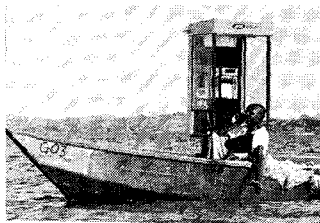


affordable transactional banking, not for loans. There is a big need for workers to be able to remit money to their families who do not live with them. And there's also a need for people to be able to pay expenses such as their rent without having to stand in a queue at a rent office that is miles away from where they work or live. In addition, the Wizzit account holder is issued with a debit card, which can be used to pay for shopping and also to get cash back. The debit card can be used at any ATM but getting cash back from a retailer is a much cheaper option; it costs R1.99 compared with the ATM cost of R4.99.

*And all the other costs?*

It very quickly became clear from talking to our potential customers that they could not understand the concept of being charged a monthly fee or of having to keep a minimum balance in their accounts; Wizzit has no monthly fees and no minimum balance requirements, and there are no penalties for non-use and also no penalties for excessive use. You only pay for what you use. If you're using a cellphone, then purchasing airtime costs 99c, a Wizzit-to-Wizzit transaction costs R2.99 and a Wizzit-to-non-Wizzit transaction costs R4.99. Using the debit card for transactions costs R1.99.

*Aren't those charges the same as the new MTN Banking facility?*



Yes, interestingly, MTN has announced their prices at 1c more than what we launched with and these are about the lowest charges that are possible given the fees that have to be paid to the bank clearing system. And it's great that now there's a few people competing at this level. It can only benefit the customers.

*How did you get access to the clearing system?*

We operate as a division of the SA Bank of Athens, which means that we have a licence to accept deposits. The SA Bank of Athens has been fantastic in its support for us. But getting a licence is only the beginning of the challenges in this particular business arena. Once you've got a licence, you then have to become a player in the national payment system. This payment system is not regulated by the Reserve Bank but by the banks themselves through a rather large self-regulatory body called Pasa [the Payment Association of South Africa].

*But how do you expect to survive in a market that is so dominated by the four big banks? Presumably they could squeeze you out quite easily if they wanted to; they could just push up the price of using the payment system and then either your customers would disappear or your margins would.*

I think there's plenty of room in the market for all of us; it's great that the big banks are moving into cell phone banking and providing some products for the

unbanked, but I'm not sure just how committed they are to that end of the market. We are. Providing banking to the unbanked and the underbanked is our core business. We eat, sleep and breathe it. Our approach to that market is quite different from the big banks. We employ only previously unemployed people and train people from within the community to market our product and to open accounts. To date, we've trained 800 Wizz Kids. The model is very people intensive, which is appropriate given that this is a people business; it does restrain the pace of our growth but it also helps to develop confidence in our product and gives it a lot of credibility. I think it also helps that Nactu [the National Council of Trade Unions], with over 450 000 members, owns 26 percent of Wizzit. That helps with the credibility and also obviously provides us with a good marketing opportunity.

*So how profitable is it?*

This is certainly not the way to make a fast buck, or to make an easy buck. You really do have to be motivated; we are, that's the only way we were able to get this far. To date, the number of transactions in the system is ahead of our original budget. Right now we're budgeting to start producing profit in about 18 months. And when that happens, I'll probably go on holiday. I haven't had one for about two years but management owns 74 percent of the company, which keeps us driven and focused.

### Open Vragen (20 punten):

#### Vraag 1 (3+4+2 punten)

- a. Wat is een information system plan?
- b. Noem de planning questions van een information system plan en de twee niveaus waarop deze beantwoord kunnen worden en geef antwoord op de vragen op strategisch niveau zoals het management van Wizzit dat gedaan had kunnen hebben; doe dit aan de hand van het hele interview.
- c. Welke kosten worden vaak vergeten bij een information system plan?

#### Vraag 2 (2 punten)

Benoem een beveiligingsrisico voor de Wizzit case.

#### Vraag 3 (2 punten)

Waar staat het begrip CASE tools voor?

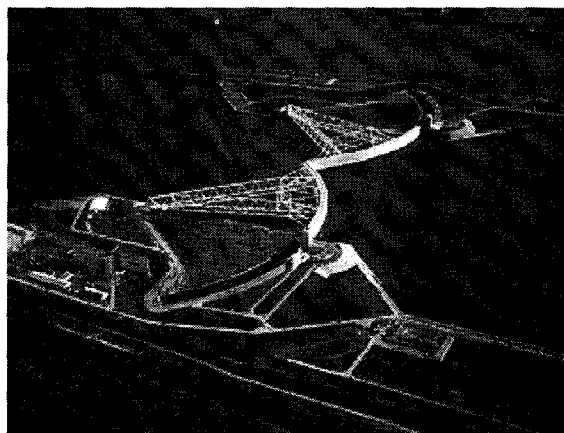
Lees de volgende tekst nauwkeurig:

#### **Hoe betrouwbaar is de Maeslantkering?**

De vraag hoe veilig de Maeslantkering is, is in feite een vraag naar de betrouwbaarheid van de gebruikte software. Daar zitten hoe dan ook fouten in.

Op dit moment is er veel controverse over de Maeslantkering en dan met name over de betrouwbaarheid van het beslissingsondersteunend systeem, het besturingssysteem en het informatie aanleverende systeem. Er worden allerlei getallen genoemd over de betrouwbaarheid van dit agglomeraat. In het AD stond dat best-in-class benchmarks voor een kleine duizend systeemsoftwareprojecten laten zien dat er zelfs bij 98 procent defect removal efficiency nog zo'n 100 ernstige fouten in dat soort software kunnen zitten. In verschillende publicaties staan schattingen dat de faalkans van de Maeslantkeringssoftware wel 1 op 9 tot 1 op 11 is. Volgens staatssecretaris Schultz is een faalkans van 1 op 100 het hoogst haalbare.

Verontrustende cijfers als men kijkt naar het belang van de kering: hij beschermt 1.3 miljoen mensen en honderden miljarden aan economische belangen. Dit is des te verontrustender als men bedenkt dat life-crucial software



ook gebruikt wordt in kerncentrales en luchtverkeerssystemen. We kunnen ons dan ook nauwelijks conflicterende getallen veroorloven en moeten dus preciezer weten of de burger zich echt zorgen moet gaan maken of hij de voeten droog houdt.

In 1997 is de Maeslantkering in gebruik genomen. Tussen 2000 en 2003 zijn de belangrijkste aanpassingen aan de software verricht. Bovendien wordt afgestapt van de computer als alleenheerser. Als de computer overduidelijk verkeerde beslissingen neemt, kan een medewerker na overleg het gezond verstand laten spreken en ingrijpen, zegt het ministerie. Al met al kan zo de kans dat de kering niet sluit worden teruggebracht tot eens in de honderd keer. Voor dit resultaat is sinds 2001 10 miljoen euro uitgegeven aan verbetering van de bolscharnieren van de kering en 11 miljoen aan verbetering van de software en de besluitvorming. Of het echt werkt, weet niemand. De zeven jaarlijkse testsluitingen bij rustig weer zijn altijd goed verlopen.

Vraag 4 (2 + 3 + 2 punten)

- a. Benoem de acht verschillende risicotypes die in het boek van Steven Alter genoemd worden
- b. Geef aan welke risico's in bovenstaande tekst genoemd worden en geef daarbij een relevant voorbeeld voor de Maeslantkering.
- c. Welke taak in de operatie van de Maeslantkering moet niet overgelaten worden aan de computer?

**Multiple Choice vragen (12 punten):**

Vraag 5 (1 punt)

Welke van de onderstaande bedrijven is een ASP (Application Service Provider):

- A Bijenkorf
- B Wizzit
- C PayPal
- D Maeslantkering

Vraag 6 (1 punt)

Welke van de onderstaande processen is geen outsourcing proces:

- A Programmeerwerk van Europees bedrijf laten uitvoeren in India
- B Je kleine broertje/zusje tegen vergoeding jouw afwasbeurt laten doen
- C Het on-line verkopen van management boeken
- D Automatisch verwerken van Acceptgiro's uitbesteden aan daarin gespecialiseerd bedrijf

Vraag 7 (1 punt)

Welk bedrijf verdient aan Cookies:

- A Peijnenburg
- B DoubleClick
- C Opt-in
- D Albert.nl

Vraag 8 (1 punt)

Welk onderzoeksgebied kijkt naar duurzaam beeldschermwerk:

- A IT-economics
- B Autonomy
- C Telecommuting
- D Ergonomics

Vraag 9 (1 punt)

Welke generatie programmeertaal is COBOL:

- A assembly
- B higher level
- C machine language
- D fourth generation

Vraag 10 (1 punt)

Wat is niet één van de vier fasen van ieder IS project:

- A Initiation
- B Development
- C Benchmarking
- D Operation & Maintenance

Vraag 11 (1 punt)

Mensen die computers anthropomorfiseren hebben de neiging om,

- A computer de schuld te geven voor het maken van fouten
- B mensen kwaliteiten van een computer toe te kennen
- C zich vijandig op te stellen jegens computers
- D alle bovengenoemde antwoorden
- E geen van allen

Vraag 12 (1 punt)

Word-processors en spreadsheets zijn voorbeelden van:

- A systeem software
- B system ontwikkelsoftware
- C end-user software
- D applicatiesoftware

Vraag 13 (1 punt)

Voor het grootste gedeelte wordt informatie systeem planning uitgevoerd op twee niveaus:

- A strategisch en tactisch
- B operationeel en strategisch
- C strategisch en project
- D operationeel en financieel

Vraag 14 (1 punt)

Wanneer IS projecten in scope veranderen omdat gebruikers beginnen te leren dat hun originele begrip van de situatie inadequaar was, dan heet deze situatie:

- A requirements creep
- B system development headache
- C moving targets
- D geen van bovengenoemde antwoorden

Vraag 15 (1 punt)

Vertragingen die ontstaan tijdens analyse, design en programmeren kunnen voorkomen worden door het gebruik van:

- A een prototype
- B de traditionele life cycle
- C een application package
- D end-user development

Vraag 16 (1 punt)

Software bugs zijn een fundamenteel probleem met geautomatiseerde systemen, want:

- A testen is eigenlijk een hit-or-miss proces
- B bugs kunnen zichzelf in een later stadium creëren
- C er is geen onfeilbare manier om te bewijzen dat een programma correct werkt
- D testers zijn lui