Wireless Financial Engineering

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ICT ARPL

just another problem that needs a $f(x) = y$

- as techies this is just another problem that needs a suitable equation.

find the solution to this equation

$$V = R – C – A – P - D$$

- V = viability
- R = Revenues
- C = operating Costs
- A = Amortization
- P = Provisions
- D = Debt servicing

R - revenues

sources of income for a wireless network, might include:

- network clients (subscribers)
- hotspot clients (pre-pay)
- VoIP to PSTN gateway services
- thin client hosting, PC leasing
- institutional funding
- data collection (climate data)

C – direct operating Costs

what are the costs?

- bandwidth
- facility rental (renting space, rooftops)
- salaries, contracting
- electricity

A – Amortization costs

- Amortization – the division of capital costs, over the period of serviceability. Used in budgeting to provide funds to replace equipment and for balancing “real costs”. Such as:
  - access points, UPS, servers, switches, cables, buildings (if owned), vehicles, test equipment, printers, routers...

(basically all physical equipment that is used for the “business”)

P - Provisions

- there is risk, that must be planned for. One of the simplest ways to provide deal with risk, is to have insurance. For those things that aren't insured, you need a “penny jar”.
  - how much cash is required to ASSURE the business? (i.e. how much money do we need to reserve to deal with 2 std. dev. of risk)?
  - What risks lie inside of 2 std. dev. of risk in your area? NB: 2 is arbitrary, but is what I use.

D - Debt servicing

- Everyone owes something to someone, fortunately most of our projects are funded by a benefactor with no interest but to see you succeed! (+ a few other things...)
- CASH FLOW is paramount! (digress...)

CASH FLOW!

- What does CASH FLOW mean?
- Why is CASH FLOW such a critical aspect of a project in Africa? (or actually a problem for many “funded” projects anywhere)
- is it a big deal?

Nota Bene CASH FLOW might make or break your project

- access to credit is a problem, because when your “customers” take too long to pay, you still need to pay your bills. This is cash flow. Assuring that you have enough cash available to pay debts. Western companies do a poor job, as they simply rely on having credit to cover shortages.

why is there so much emphasis on these Financial aspects?

- the truth is, that us Westerners, whom are newer to working in the South have not understood the reality of finances.
- what we have found in these projects is that governments are not able to fund these projects, though they would like to, so, new “social enterprise” models have been required.

be dynamic, make sure that your budget is too!

- a critical fault is locking oneself into particular “services” without first analyzing their profitability potential
- as well, many different ideas need to be tried out, “tweaked” and possible cut, so, your budget should be adaptable. Don't let your funder lock you into “good intentions” but “bad business”. (distract them with shiny things while you work on the business!)

Analyzing profitability

- for major services, one needs to evaluate their profitability. For example, many telecentres presume that “navigation” and photocopying are two of their greatest earners, though it is true that they might earn a lot of revenue, the costs to sell those services are high. **So, let the numbers do the talking!**

i.e. photocopying in a Congo telecentre

- Revenue
- $0.10/page
- Costs
  - electricity per month $15
  - toner $70/4000 prints
  - amortization $70/month
- 2000 copies = $200 revenue per month, but with a cost of $155, so total net = $45 not a big earner. (and main d'oeuvre not included)

Financial Projections

- this is a game of trying to project a likely future
- the key is to focus on drawing real data in. Visit competitors, get data from similar projects.
- do not “adjust” the numbers to suit your aim!
- only focus on the big stuff

the two costs, fixed and variable

- Fixed costs
  - costs that are basic to all services at the centre, such as rent, salaries (some times).
  - typically, you take fixed costs and divide this cost among the services for calculating profitability.
  - also known as “overhead”
- Variable costs
  - often, I include this in the “cost to sell” a service
  - these costs scale in relation to the number of sales, paper and ink, for example.

Question: what are the possible revenue sources from a wireless network?

revenues for a wireless network?

- re-selling bandwidth
- hotspots
- VoIP
- anything else?

don't forget about the coffee?

- when offering a service, don't forget about the complimentary services. They can often earn you the real money.
- i.e. many North American restaurants (not including bars) make 80% of their profits on beverages, though people go to eat. Food has high costs, while beverages often have big mark-ups.

lets look at some numbers...

- Scenario A Malawi
- Scenario A Rawanda

your business plan

- you resell your service to 4 clients at 1 euro a month, monthly revenue = 4 euro
- the VSAT costs only 3 euro a month
- monthly profit of 1 euro!