2. Money and Tools for it's management

• Introduction to accounting
  – Profit and Loss
  – Cash flow
  – Balance Sheet
  – Budgets

• Sources of finance

• Stocks, Shares, Futures and Options
Introduction to accounting

• Why have accounts?
  – Instruments on the dashboard of the company
  – To control, you must first measure
  – Statutory duty

  – DO THE BUDGET
  – COMPARE WITH REALITY
Legal requirements;

- Keep proper books of account
- Annual audit
- Solvency
Double entry

• TERMS “Debits and Credits”
  – Debit: to receive. Income Owed to the company
  – Credit: to give. Outgoings. Owed by the company

• Ledgers and balances
• Accountancy programs e.g. Sage, Xero

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEBIT SIDE</td>
<td></td>
<td></td>
<td>CREDIT SIDE</td>
<td></td>
</tr>
</tbody>
</table>
## Vertical Format

<table>
<thead>
<tr>
<th>Income</th>
<th>Sales</th>
<th>Interest</th>
<th>TOTAL Income</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Cost of goods</th>
<th>Salaries</th>
<th>Overheads</th>
<th>Marketing</th>
<th>TOTAL Expenditure</th>
</tr>
</thead>
</table>

Profit
Accounts

Profit & Loss Account

<table>
<thead>
<tr>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Goods Sold (all goods for resale minus any stock left at the time)</td>
<td>Sales (invoices raised etc)</td>
</tr>
<tr>
<td>Expenses (all the costs including wages)</td>
<td></td>
</tr>
<tr>
<td>Profit (always a balancing figure)</td>
<td></td>
</tr>
</tbody>
</table>

Balance Sheet

<table>
<thead>
<tr>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Assets (eg Computer, Car)</td>
<td>Creditors (people you owe money)</td>
</tr>
<tr>
<td>Debtors (people who owe you money)</td>
<td>Loans (banks you owe money)</td>
</tr>
<tr>
<td>Stock (goods for resale)</td>
<td>Capital (the money you put in)</td>
</tr>
<tr>
<td>Bank (assuming a positive balance)</td>
<td>Retained Profit (the profit made so far)</td>
</tr>
</tbody>
</table>
Interlinking of Accounts

- Trade and other Debtors
- Sales and other income
- Capital
- Drawings
- Cash and Bank Balances
- Stock and assets
- Trade and other creditors
- Purchases
Account Example 1

• Open a bank account with £1,000 to start your business
  – Debit: Bank £1,000
  – Credit: Capital £1,000

• Go to market and write a £600 cheque for some Mushrooms
  – Debit: Stock £600
  – Credit: Bank £600 [We could say Debit: Bank -£600 but instead we copy what real Accountants do with minus numbers and change Debit to Credit]
  – Quick check on the bank – We put £1,000 in and spent £600 leaves £400. In accounting speak Debit £1,000 then Credit £600 leaves a Debit of £400
Account Example 2

- Door to door we sell half the Mushrooms for £700 which we pay into the bank
  - Debit: Cost of Goods Sold £300 (half of £600)
  - Credit: Stock £300 (reducing stock for what we sold)
  - Debit: Bank £700
  - Credit: Sales £700

- We can then do some accounts:
  - Profit & Loss Account
    - Cost of Goods Sold £300
    - Profit (=balance) £400
    - Profit (£700)
  - Balance Sheet
    - Stock £300
    - Bank £1,100
    - £1,400
    - Capital £1,000
    - Retained Profit £400
    - £1,400
Accounts 3

• The mushrooms are looking old – We sell the remainder to a caterer for £350
  – Debit: Cost of Goods Sold £300 (being the rest of the stock)
  – Credit: Stock £300
  – Debit: Bank £350
  – Credit: Sales £350

• Now our accounts look like this:
  – Profit & Loss Account
    – Cost of Goods Sold £600
    – Profit (=balance) £450
  – Balance Sheet
    – Stock £0
    – Bank £1,450
  – £1,1450 £1,450

Sales £1,050
Principles of Accounting 1

• Boundaries
  – Entity
  – Periodicity
  – Going concern
  – Quantative

• Ethics
  – Prudence - if in doubt, understate profits, overstate losses
  – Consistent - use the same rules throughout
  – Objective - avoid personal preference
  – Relevance “True and fair”
Principles 2

• Measurement
  – Money
  – Consistent cost basis
  – Realisation
  – Consistent time basis
  – Double entry
  – Materiality
# Example P&L Budget

<table>
<thead>
<tr>
<th>Month</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>12</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>30000</td>
<td>30000</td>
<td>30000</td>
<td>10000</td>
<td>100000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmers</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>30000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overheads</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>30000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total costs</td>
<td>10000</td>
<td>10000</td>
<td>10000</td>
<td>10000</td>
<td>10000</td>
<td>10000</td>
<td>0</td>
<td>0</td>
<td>60000</td>
</tr>
<tr>
<td>Profit in the month</td>
<td>20000</td>
<td>-10000</td>
<td>20000</td>
<td>-10000</td>
<td>-10000</td>
<td>20000</td>
<td>0</td>
<td>10000</td>
<td>40000</td>
</tr>
<tr>
<td>Profit to date</td>
<td>20000</td>
<td>10000</td>
<td>30000</td>
<td>20000</td>
<td>10000</td>
<td>30000</td>
<td>30000</td>
<td>40000</td>
<td>40000</td>
</tr>
</tbody>
</table>
# Example Cashflow

<table>
<thead>
<tr>
<th>Month</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>12</th>
<th>Total</th>
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<td></td>
</tr>
<tr>
<td></td>
<td>30000</td>
<td>30000</td>
<td>30000</td>
<td>30000</td>
<td>10000</td>
<td>10000</td>
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<td></td>
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</tr>
<tr>
<td>Overheads</td>
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<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td></td>
<td>30000</td>
</tr>
<tr>
<td>Total costs</td>
<td>5000</td>
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<td>10000</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>0</td>
<td>0</td>
<td>60000</td>
</tr>
<tr>
<td>Cash flow</td>
<td>-5000</td>
<td>-10000</td>
<td>20000</td>
<td>-10000</td>
<td>20000</td>
<td>-10000</td>
<td>-5000</td>
<td>30000</td>
<td>10000</td>
<td>40000</td>
</tr>
<tr>
<td>Cash in bank</td>
<td>-5000</td>
<td>-15000</td>
<td>5000</td>
<td>-5000</td>
<td>15000</td>
<td>5000</td>
<td>0</td>
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<td>40000</td>
<td>40000</td>
</tr>
</tbody>
</table>
### Revised Cashflow

<table>
<thead>
<tr>
<th>Month</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>16</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30,000</td>
<td>30,000</td>
<td>30,000</td>
<td>10,000</td>
<td>100,000</td>
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<td></td>
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</tr>
<tr>
<td>Expenditure</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmers</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
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<td>5,000</td>
<td>40,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overheads</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>40,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total costs</td>
<td>5,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>10,000</td>
<td>5,000</td>
<td>-</td>
<td>80,000</td>
</tr>
<tr>
<td>Cash flow</td>
<td>-5,000</td>
<td>-10,000</td>
<td>20,000</td>
<td>-10,000</td>
<td>-10,000</td>
<td>20,000</td>
<td>-10,000</td>
<td>-10,000</td>
<td>5,000</td>
<td>-5,000</td>
<td>30,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Cash in bank</td>
<td>-5,000</td>
<td>-15,000</td>
<td>5,000</td>
<td>-5,000</td>
<td>-15,000</td>
<td>-25,000</td>
<td>-5,000</td>
<td>-15,000</td>
<td>-20,000</td>
<td>10,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>
## Example Balance Sheet

Example Balance Sheet as at beginning of Month 9

### FIXED ASSETS

<table>
<thead>
<tr>
<th>Asset</th>
<th>Value (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td>10,000</td>
</tr>
<tr>
<td>Furniture</td>
<td>3,000</td>
</tr>
</tbody>
</table>

### CURRENT ASSETS

<table>
<thead>
<tr>
<th>Asset</th>
<th>Value (€)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-Progress</td>
<td>10,000</td>
<td>retainer, not yet invoiced</td>
</tr>
<tr>
<td>Trade Debtors</td>
<td>30,000</td>
<td>Amount invoiced, but not yet paid</td>
</tr>
<tr>
<td>Cash</td>
<td>0</td>
<td>Normally there would be some petty cash</td>
</tr>
</tbody>
</table>

### LESS: CURRENT LIABILITIES

<table>
<thead>
<tr>
<th>Liability</th>
<th>Value (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade creditors</td>
<td>5,000</td>
</tr>
<tr>
<td>Bank Overdraft</td>
<td>15,000</td>
</tr>
</tbody>
</table>

### NET CURRENT ASSETS

<table>
<thead>
<tr>
<th></th>
<th>Value (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET CURRENT ASSETS</td>
<td>20,000</td>
</tr>
</tbody>
</table>

### REPRESENTING

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (€)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietors Capital</td>
<td>13,000</td>
<td>The proprietor paid for the computer etc</td>
</tr>
<tr>
<td>Plus: Accumulated Profit</td>
<td>20,000</td>
<td></td>
</tr>
</tbody>
</table>
Tests

Liquidity Ratios
- Current Assets
- Acid tests

Profitability Ratios
- Return On Investment
- Gross Profit
- Net Profit
- Mark up

Investment Ratios
- P/E ratio
- Gearing
- Earnings per share

Efficiency Ratios
- Stock turnover
- Asset turnover
- Debtor collection period
- Creditor payment period
Ratios

• Current ratio
  – Current Assets / Current Liabilities
    • Measures liquidity
    • < 1 indicates potential cash flow problems

• Acid test (Quick Health check)
  – (Current Assets-Stocks) / Current liabilities
    • Stocks may not be able to be sold quickly
    • Similar to Current Ratio, but shorter term

• Gearing
  – Net Borrowings / Shareholders’ Funds
    • Reliance on borrowings
    • Vulnerability to interest rate rises

• Return on Investment
  – Profit before Tax / Shareholders Funds
    • Efficiency - 40% for sustainable high growth
Budgeting

• Assumptions
  – “Pessimistic realism”
  – Tell the truth - know the worst

• Sensitivity analysis

• Comparison with actual

• Update!!
Product stages

- Development
- Marketing
- Maintenance

(Dog)  Rising Star  Cash Cow  Dying

Cash

Expenditure

Sales

Revenue

Total

Cumulative

Total cash flow

Time >
Debt and Equity

- **Debt**
  - Loan
    - Credit card, Overdraft, Mortgage, Student Loan, Debenture, Bond etc
    - Interest rates, term, conditions, collateral
    - Repay the same amount regardless of performance

- **Equity**
  - Share of the company
  - Return depends on the performance of the company
    - Can be expensive money
    - Can be valueless if the company folds
    - Only valuable on an exit (sale, IPO etc)
      - Preference shares may have other conditions such as liquidation ratios attached

- Convertible Debentures
- Redeemable Preference Shares
How much will I need?

• **DO THE BUDGET**

• Working assumption no income for 1\textsuperscript{st} year
  – One man band, working from home \textsterling 100,000
  – 5 people, office etc \textsterling 1M
  – 20 people, small factory \textsterling 5M

  – Game, software package $5M
  – New complex chip $100M
Michael Beckwith, Sequoia Capital

OUR TAKE

MANAGE WHAT YOU CAN CONTROL
   SPENDING
   GROWTH ASSUMPTIONS
   EARNINGS ASSUMPTIONS

FOCUS ON QUALITY

LOWER RISK

REDUCE DEBT

Early revenue
Low hanging fruit, Quick wins
Cash flow positive first, expansion later
Lightweight Companies

• Many computer companies need little capital to start
  – Virtual office
  – Spare time or labour for shares
  – Advanced payment from customers
    • Development clubs, Government/EU grants
    • Crowd funding

• Fail early, Fail often
  – Find the market
Sources of finance

• Family and friends £50K
  – Banks
    • Security

• Angels £500K

• Venture Capitalists £5M
  – VCA
  – VCB $25M
  – Mezzanine

• Stock Market floatation $250M
  – Acquisition
  – Exit

FAIRY GODMOTHERS ARE NOW EXTINCT!
Why stages?

- Risk/Reward profile differ
- Successive dilution
- Typically 30% dilution each stage
  - Investment = pre-money valuation/2
  - “Squeeze the Angels”

<table>
<thead>
<tr>
<th>Round</th>
<th>Investment</th>
<th>Pre-money</th>
<th>Post-money</th>
<th>Founders</th>
<th>FFF</th>
<th>Angel</th>
<th>VCA</th>
<th>VCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFF</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>67%</td>
<td>33%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angels</td>
<td>500</td>
<td>1000</td>
<td>1500</td>
<td>44%</td>
<td>22%</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VCA</td>
<td>5000</td>
<td>10000</td>
<td>15000</td>
<td>30%</td>
<td>15%</td>
<td>22%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>VCB</td>
<td>10000</td>
<td>20000</td>
<td>30000</td>
<td>20%</td>
<td>10%</td>
<td>15%</td>
<td>22%</td>
<td>33%</td>
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<tr>
<td>Total</td>
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<tr>
<td>All</td>
<td>15550</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>0.64%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UK Company types

- Sole Trader
- Partnership
- Private company
- Limited Private Company (Ltd)
- Public limited company (plc)
- Listed company
- Special cases (e.g. Trusts, Societies)
Stocks and Shares

• Shares
  – Ordinary and preference
  – Voting and dividend rights
  – Critical amounts (for normal Table A companies)
    • 25+% Blocks “Substantive” resolutions
    • 50+% Day-to-day control
    • 75+% Total control
    • Other trigger points for public companies
  – Other rights and Coupons
  – Directors accountable to shareholders
Buying and Selling Shares

• Illegal to advertise unless a member of an SRO (e.g Broker),
• Private company usually requires Board approval
  – Stamp Duty 0.5%
• Public company:
  – Primary market: Floatation
  – Shares traded on a public exchange
    • Listing: admitted to the Official List (UK: LSE)
  – Secondary market
    • Settlement
    • Illegal to use or divulge inside knowledge
  – Bull market: upward trend
  – Bear market: downward trend
• Capital Gains Tax
Options and Futures

• Contracts to buy or sell at a fixed price at some future date
  – Typically 10%
  – Futures: Must complete as specified
  – Options: Completion optional
    • Option and future contracts can be traded

• Gambling - leave it to the professionals
  – Spread-betting [www.igindex.com](http://www.igindex.com)

• Markets are largely stochastic - no system
  – Frauds:
    • Ponzi
    • Boiler room
Fraud?

Cambs firm slated over share hike

BAD PRESS has hit Cambridgeshire varicose veins firm DioMed. The company, which is listed on the U.S. Nasdaq exchange, has become a target for the New York Post. The paper claims the company, originally a spin-out from Generics Group at Harston, is enjoying an unwarranted hike in its share price following the efforts of a stock promoter who has a large holding stashed away in the Cayman Islands.

"DioMed is exactly the sort of stock that should send any normal person fleeing the room at the mere mention of its name: suspect auditor (Andersen in the U.S.), offshore accounts, weird product, teeny-weeny revenues, board members with back stories -- this stock's got it all, the complete package," the New York Post says.

DioMed's share price has risen more than 200 per cent to $7 this year, the greatest gain of any listed stock on Wall Street in this period.

CEN 27th Mar 2002
Crowd Funding

• Preselling
  – Street Performer
  – Need a prototype or good mockup

• Kickstarter, Indiegogo
  – https://www.kickstarter.com/
  – https://www.indiegogo.com/

• Up to £1m
How much is it worth?

- **Market value**
  - What someone will pay
  - Comparisons

- **Utility value**
  - Customers, lock in, staff, technology
  - Cost to reproduce

- **Asset Value**
  - Often small for startups
    - Not what it cost
  - IPR

- **NPV**
  - Net present value of future profit
  - EBITDA

- **DCF**
  - Discounted cash flow – maybe easier to estimate

- **Statistical models**
  - Black – Scholes