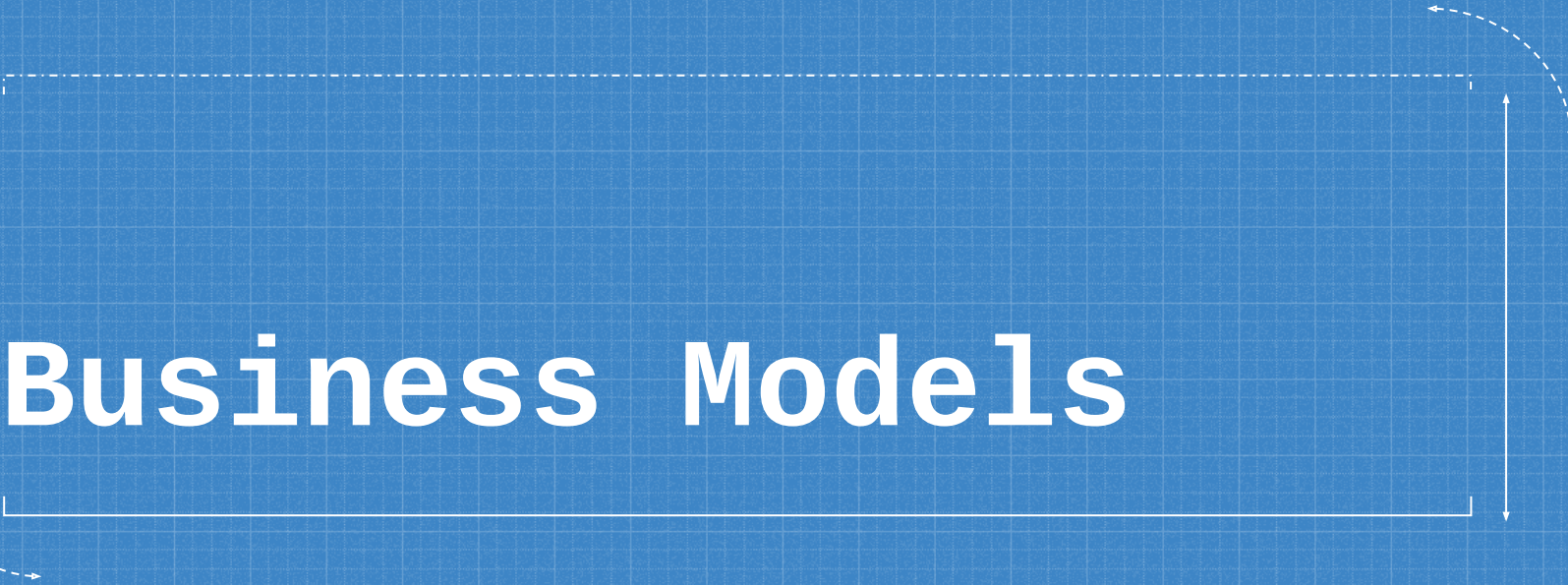




Business Models

Agenda

Foundations

Business Models

Vignette

Pricing and Value Props



What are business models?

How a company creates, delivers and captures value

Goal: A business models that plays to the strengths of the company and provides a desirable interaction for the customer

Why are business models important?

Wrong business model = company death. Right business model = long-term innovation.

Each defines how the company / team organises its resources, operations, processes and stakeholder interactions.

Each has its own special risks that you need to be aware of and mitigate.

Business Model Variables

Revenue Stream: How revenue is generated and its frequency

Price: How much the business can charge

Margin: Profit to company from sales (80%+)

Sales: Mechanism to get innovation into customers' hands

Customer Training: Extent to which specialised training is required

Competitive Differentiation: Degree to which innovation is unique

BTEs: High switching cost, brand/customer loyalty, access to distribution channels

Financial Requirements: Necessary investment to develop + commercialize

Culture/Geography: Extent to which customer needs differ between cultures/geographies

Selecting a Business Model

Medical technology has ~10 standard business models.

Investors prefer tried and true business models for the target field.

Certain business models are significantly more valuable (ongoing revenue streams).

Investors are becoming more open-minded to novel business models, however they still lead to significant market development risk.

The market is shifting towards value-based care (critical for digital health), but this change is extremely slow and your company might be dead by then.

Business Models

Disposables

Reusables

Implantables

Capital Equipment

Services

Fee Per Use

Subscriptions

Over the Counter

Prescriptions

Physician-Sells



Disposables

Products used + discarded without reuse.

Low-Cost Disposables (e.g. Syringes)

- Very low margins with high sales volumes (marketed through low-cost channels)
- Must be easy to use
- Pressure to reduce production cost

High-Cost Disposables (e.g. Surgical Staplers)

- Higher margins (70-80%+) for a technical sales force and high IP protection
- Typically requires specialised training to use
- Pressure for competitive differentiation

(+) regular revenue stream, easy to understand, little risk to buyer

(-) easily replaced by reusables, environment

Reusables

Multi-use products with a moderate life span (e.g. endoscopes, scalpel holders)

Generally considered a poor business model by investors

(+) customers love it, high margins (70-80%), hard to challenge once established

(-) no sources of recurrent revenue, smaller business opportunity, not enough money to have a specialised sales force, higher risk of failure as product is reused, customers unwilling to pay for maintenance

Forcing a Reusable into a Disposable

- Reusability is almost always discovered, which forces you into a reusable model.
- Often leads to negative perceptions of the company.

Reposables: Built-in number of reuse cycles

Implantables

High-risk, high-reward business model. Traditionally been supported by investors for very large markets because of the insanely high BTEs, but generics provide pressure.

(+) 80%+ margin, easy to understand, revenue paired with growth, strong distribution networks exist in most countries

(-) revenue can take years to capture, significant investment/capital, requires an expensive salesforce, recurring liability from implant failure risks

Capital Equipment

Capital expenditure for a technology they will repeatedly use over time (>1 year)

May be sold at/near cost price to capture recurring servicing contracts/disposables.

(+) sale is equal to a long-term commitment, high switching costs

(-) sales cycles can be very long (18 months), introduces sales cycle risks,
stakeholder management is critical

Fee-Per-Use

Fee charged per [x]. E.g. Surgical packs for a procedure

Great when innovation at intersection of product and service.

Great when innovation is truly revolutionary.

(+) great if customers want higher certainty in costs (i.e. cases can get more complex), powerful if significant IP protection or BTEs, great for companies with more product lines to exclude smaller companies

(-) not great if customers do not need higher certainty in costs (i.e. cases are always simple), can be easily challenged by more traditional business models, not great for startups if entrenched company in space

Over the Counter

Technology is sold without a prescription. Depends on ability of patient to choose a treatment path and acquire the product for themselves. Often combined with services.

Must be easy to use. Heavily reliant on usual advertising.

(+) faster to reach market, often a very large market if can partner with retail

(-) requires a strong marketing budget, may be difficult to differentiate your product, consumers spend less time than physicians understanding comparative benefits

Physician-Sell Products

Products sold directly through physicians. Physicians are the “retailer” for the product and will receive a direct incentive to promote/provide the treatment.

Usually present in outpatients and paid by patients rather than insurers.

(+) can be extremely profitable

(-) only acceptable in dermatology, dentistry and optometry in Western cultures, limited to non-essential elective treatments that are NOT medically indicated, margins must be high enough to cover profits and physician's incentive

Other Models

Employer-Funded: Common in digital health, needs to provide a tangible benefit to employers (e.g. mental health programs to reduce sick leave, etc.). Was hot a few years ago, but employers demand more evidence and BTE from packaged products.

Take Home Devices: Not an attractive business model - unfortunately Medicare pays almost nothing for take-home devices (a special category called durable medical equipment or DME). Company is a lot more valuable if device is tied to procedure.

Remote Monitoring: Medicare recently approved some codes, but quite low. Should be a much better reimbursed field, but isn't. A lot of wearable companies are struggling.

Business Model Advice

Evaluate all alternatives before making a decision to avoid missing an opportunity.

Can be difficult to predict the model with greatest likelihood of success. Consider what provides greatest value to the decision-maker and what already works.

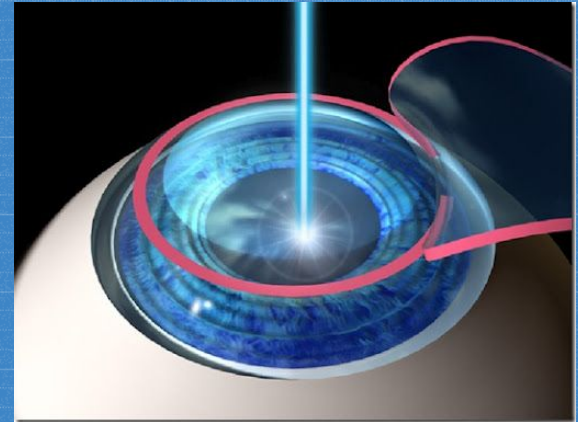
Consider what other business models can be a threat and how to mitigate.

Test with potential purchasers before a final decision.

Vignette

Your team has just invented a way to use lasers to precisely adjust someone's cornea to fix short-sightedness (i.e. the patient will not have to wear glasses again). You think it will be revolutionary. You are aware of another competitor who is also developing a similar technology and has intelligently designed around your patents. Maximising market share is critical. It cost you \$52M to bring this tech to market and you're confident 15-20 ophthalmologists want to commit.

What business model would you recommend? What other actions would you recommend?



VISX (PRK/LASIK)

- Team decided that capital expenditure was too slow for market penetration.
- VISX and main competitor combined their IP to share revenues.
- VISX/Summit were the first to pioneer the per-procedure model.
- \$500K for equipment + \$250 per eye (“licensing fee”)
- Surgeons absolutely hated it. However, they became quiet when they realised how much money they were making (\$1.5-2.5K per eye).
- Nidek (3rd competitor) entered the market. Inferior tech but did not charge a per-procedure licensing fee.
- VISX reduced fee from \$250 to \$110 and used the initial revenue to improve the technology. After significant improvements, increased back to \$250.

Notes: Competitive advantage is critical for per-procedure (a “necessary expense”). Better when everyone is playing by the same rules. Did not have to deal with reimbursement!

Business model	Margin structure	Sales investment	Importance of IP	Barriers to entry	Customer training	Clinical/regulatory hurdles	Financial requirements
Disposable – High Cost	● High	● High	● High	● High	● High	● Neutral	● Neutral
Disposable – Low Cost	○ Low	○ Low	○ Low	○ Low	○ Low	○ Low	● Neutral
Reusable – Pure	○ Low	○ Low	○ Low	○ Low	○ Low	● Neutral	○ Low
Implantable – Mid to High Cost	● High	● High	● High	● High	● High	● High	● High
Capital Equipment – Pure or Combined	● High	● Neutral	● High	● High	○ Low	● Neutral	● High
Service – Pure or Attached to Product	○ Low	○ Low	○ Low	○ Low	● Neutral	○ Low	● Neutral
Fee per Use – Pure or Combined	● Neutral	● High	● High	● Neutral	● High	● High	● Neutral
Subscription	○ Low	○ Low	○ Low	○ Low	○ Low	○ Low	○ Low
Over the Counter – Pure or Combined	● Neutral	● High	● Neutral	● Neutral	○ Low	● Neutral	● Neutral
Prescription – Pure or Combined	● High	● High	● High	● High	● High	● High	● High
Physician-Sell – Pure or Combined	● Neutral	● High	● Neutral	● Neutral	● Neutral	● Neutral	● Neutral

A Note on Pricing

Can be extremely challenging. Have a defendable estimate but might change.

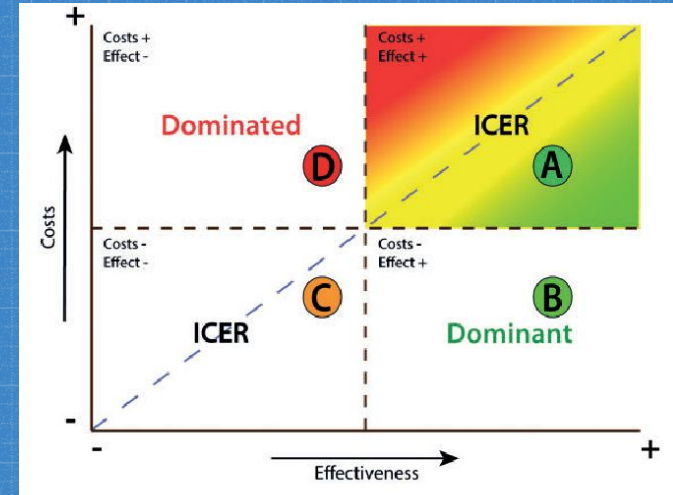
You need to consider several different perspectives:

- Competitors
- Potential Savings/Revenue for Customer
- Health Economics (QALYs gained / cost)
- Reimbursement

US/EU = mix of all, UK = strictly health econ

Advanced Pricing

- Differential Pricing
- Bundled Pricing
- Gain-Sharing: Reduced prices in exchange for higher volumes
- Pay for Performance



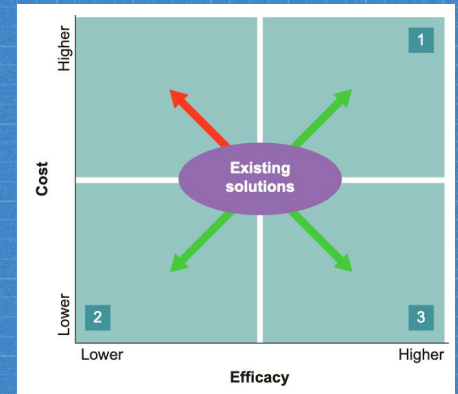
A Note on Value Props

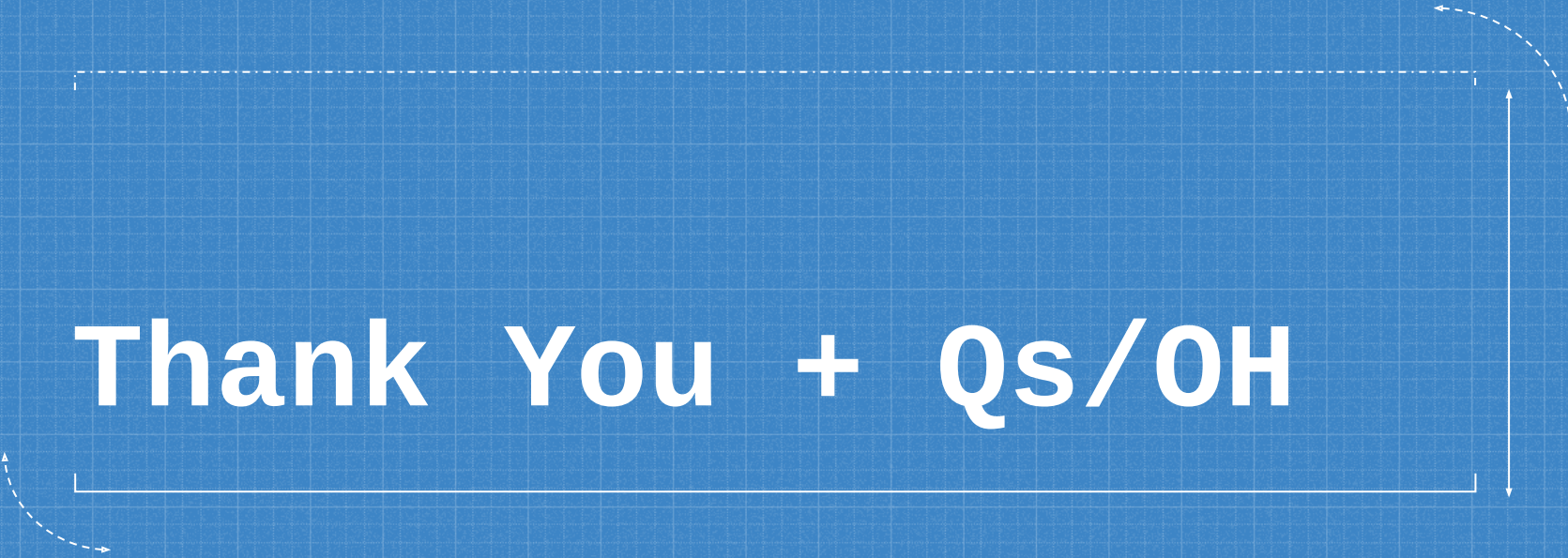
Figure out who your key stakeholders are (e.g. patients, providers, payers).

Intimately understand their pain points.

Figure out the 2-3 most compelling value statements for each stakeholder.

Consider cost, convenience, trust, revenue and connection.



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Thank You + Qs/OH