



**The Abdus Salam
International Centre for Theoretical Physics**



1996-6

Entrepreneurship for Physicists

17 - 21 March 2008

Success Story

Dawood PARKER
Melys Diagnostics, UK

“Success Story?”

Two Ideas

1. A well thought out idea with clearly defined objectives and a clear outcome.
2. An accidental opportunity.

Idea number one:

Atrial Fibrillation Screening
Monitor

What is it?

A screening monitor to identify possible sufferers of Atrial Fibrillation - a condition where the heart beats irregularly and occasionally too fast, leading to inefficient pumping of blood around the body.

Why do we need a screening monitor?

- Many people with AF do not show any symptoms and so go undetected.
- People with AF are at higher risk of having blood clots and subsequent stroke.
- The risk of stroke in these patients can be substantially reduced with the use of warfarin.

NICE on identification and diagnosis

An electrocardiogram (ECG) should be performed in all patients, whether symptomatic or not, in whom atrial fibrillation (AF) is suspected because an irregular pulse has been detected

(NICE/RCGP Press Release on AF Guidance June 2006)

Is there a Business Opportunity?

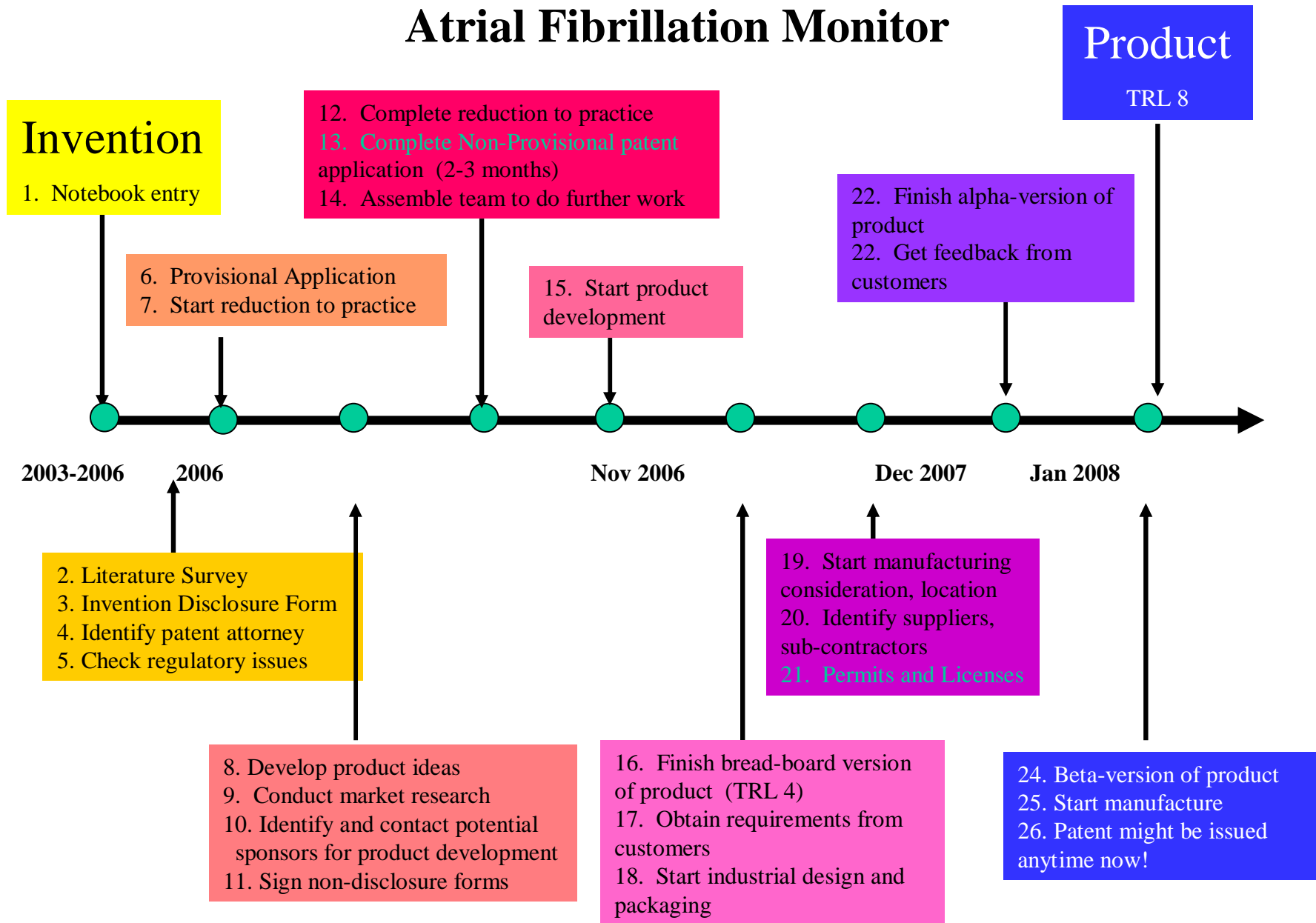
- Find out the market size:
 - Is there a competitive product?
 - Who will buy your product?
 - How much will they pay for it?
- How much will it cost to develop a prototype?

UK Market & Sales		
	GP Surgeries	Pharmacies
Number	12,250	12,000
AFSM Sales (20% take up)	2,450	2400
AFSM Revenue (at £500 per unit)	£1,225.00	£1,200,000
Total UK Revenue		£2,425,000

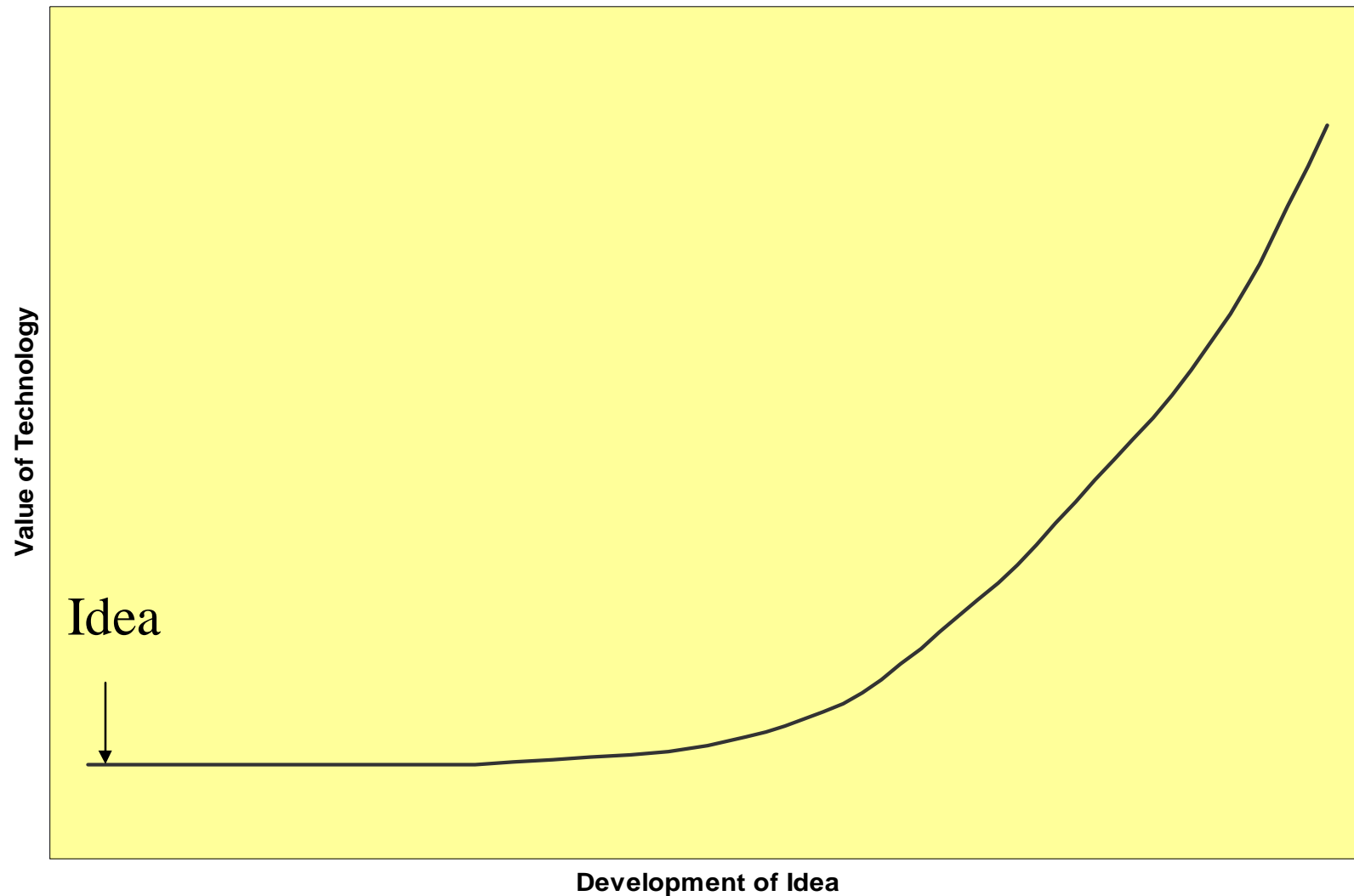
Outside UK Market and Sales

	Rest of Europe	US	Japan
Size of Market	7 x UK market	10 x UK market	2 x UK market
Revenues	£16,975.00	£24,250.000	£4,850.000
Total Revenues			£48,500,000

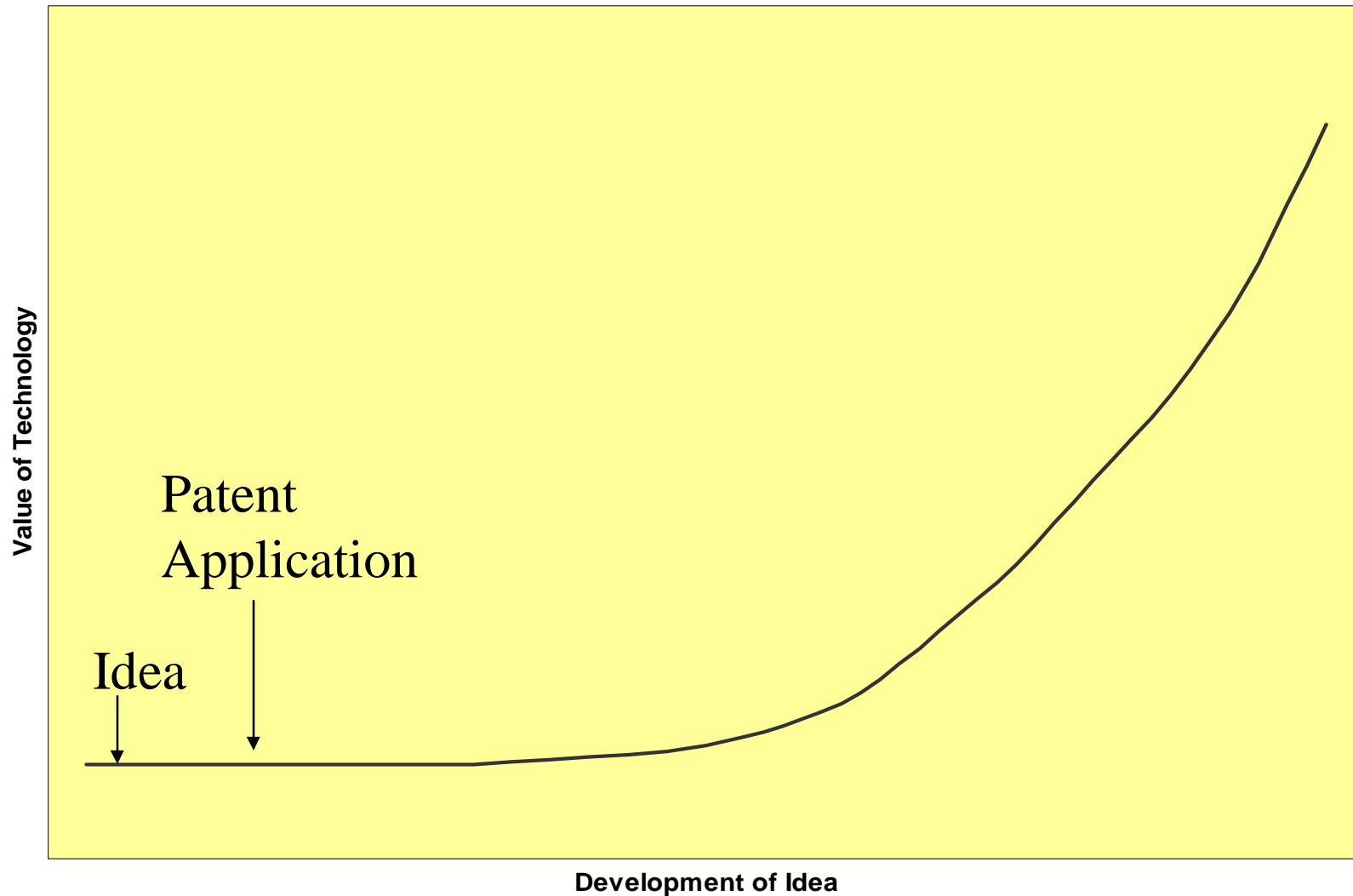
Atrial Fibrillation Monitor



So what is the value of your idea?



Plus Patent Application?



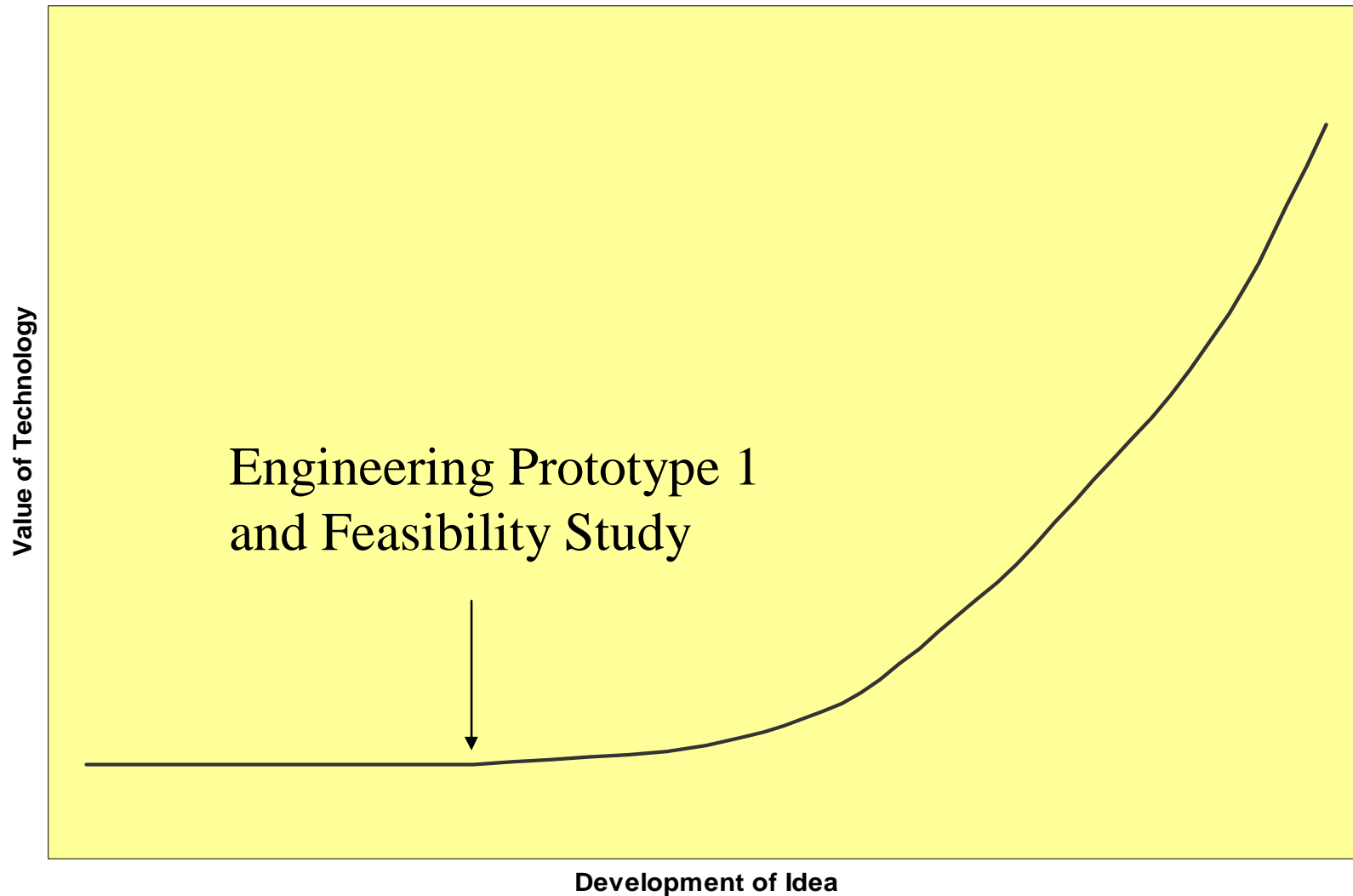
Engineering Prototype 1



Feasibility Study

- Show proof of principle
- For AFSM: Cardiac Consultant compared the monitor predictions with the ECGs of 340 patients.

Value?

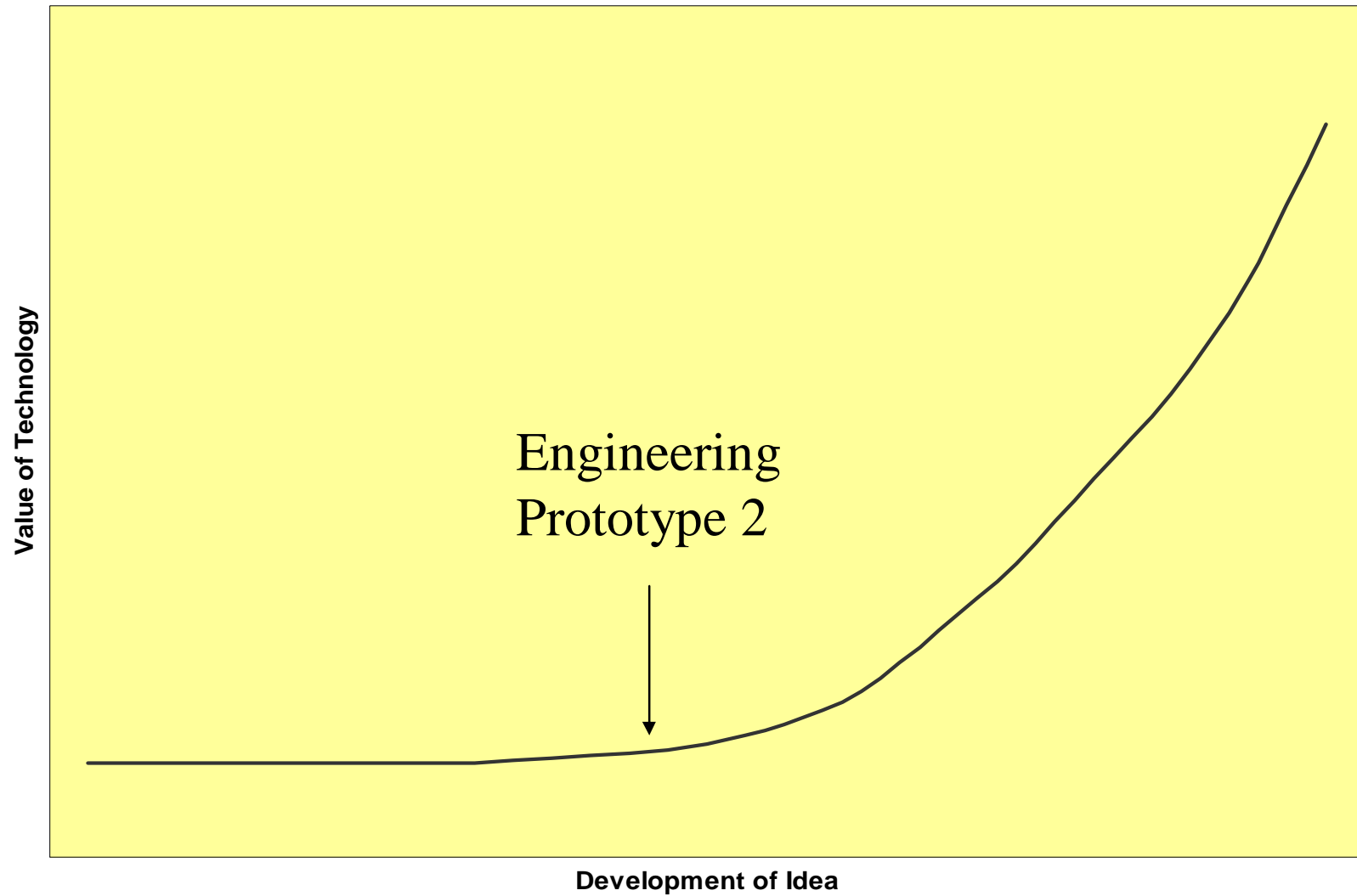


Engineering Prototype 2



- Used for further clinical trials.

Value?

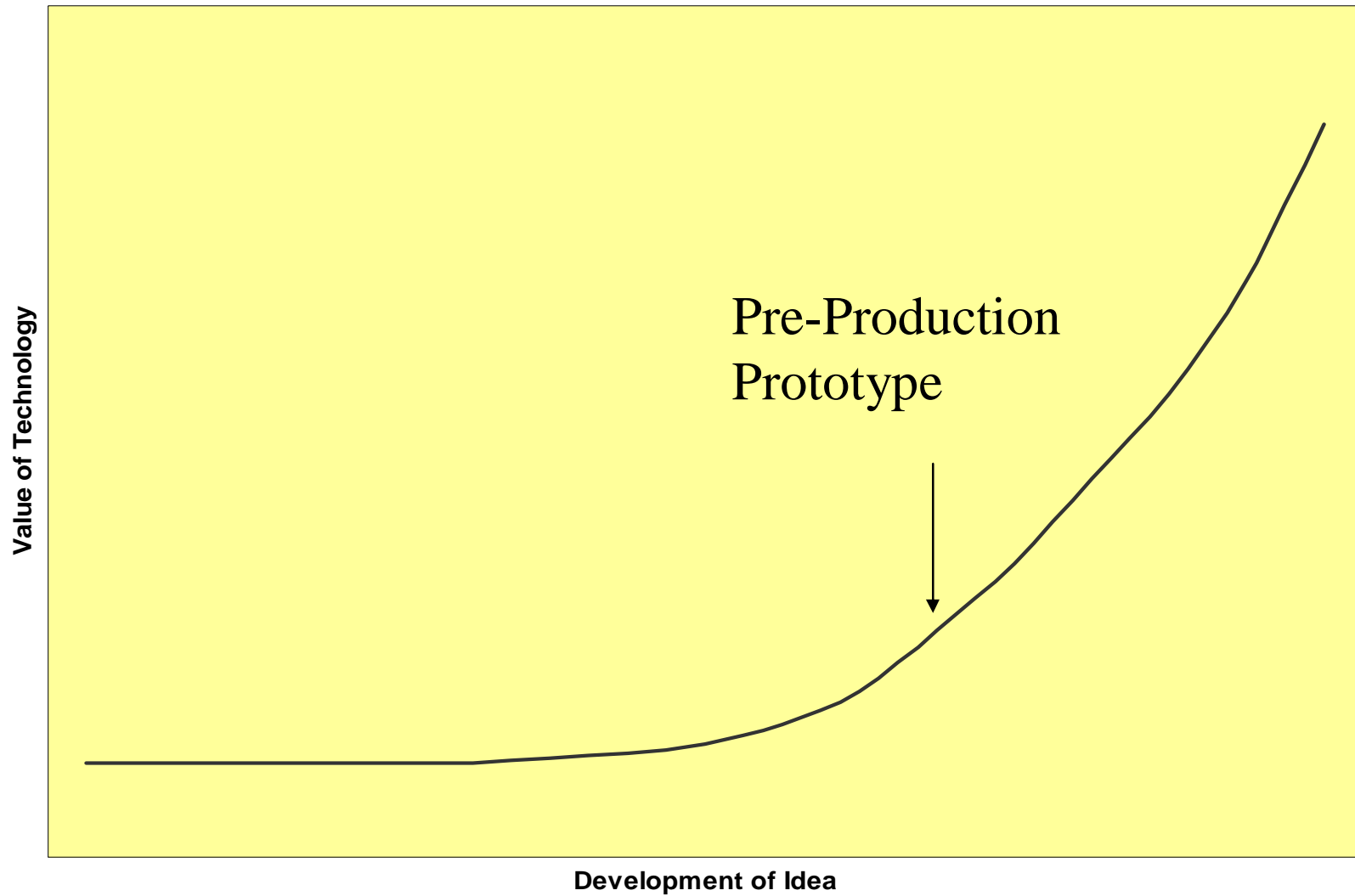


Pre-Production Prototype

- Ergonomic monitor design
 - Subcontract?
 - Cost?
- Compare cost with potential added value.



Value?



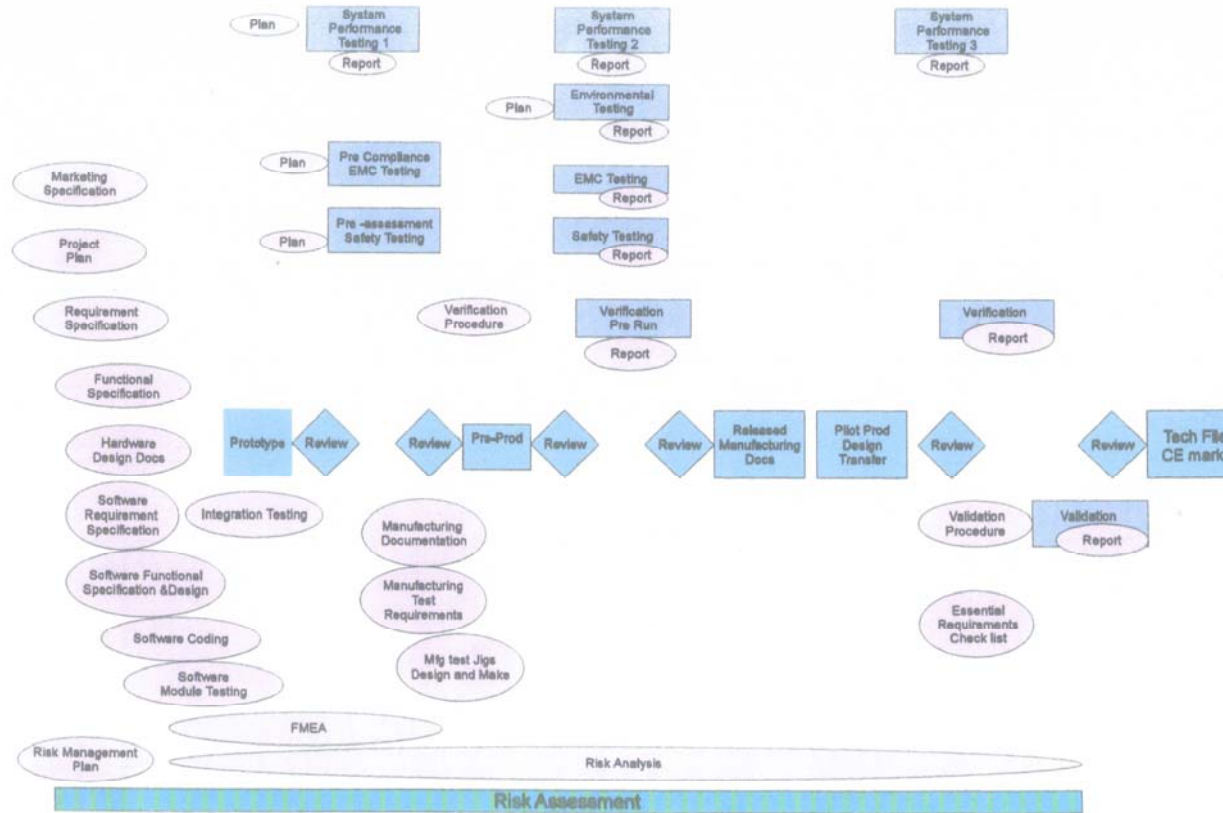
The Wilson-Jungner criteria for appraising the validity of a screening programme (WHO 1968)

- The condition being screened for should be an important health problem
- The natural history of the condition should be well understood
- There should be a detectable early stage
- Treatment at an early stage should be of more benefit than at a later stage
- A suitable test should be devised for the early stage
- The test should be acceptable
- Intervals for repeating the test should be determined
- Adequate health service provision should be made for the extra clinical workload resulting from screening
- The risks, both physical and psychological, should be less than the benefits
- The costs should be balanced against the benefits

Options

- Sell the technology.
- Add value by taking monitor to production.

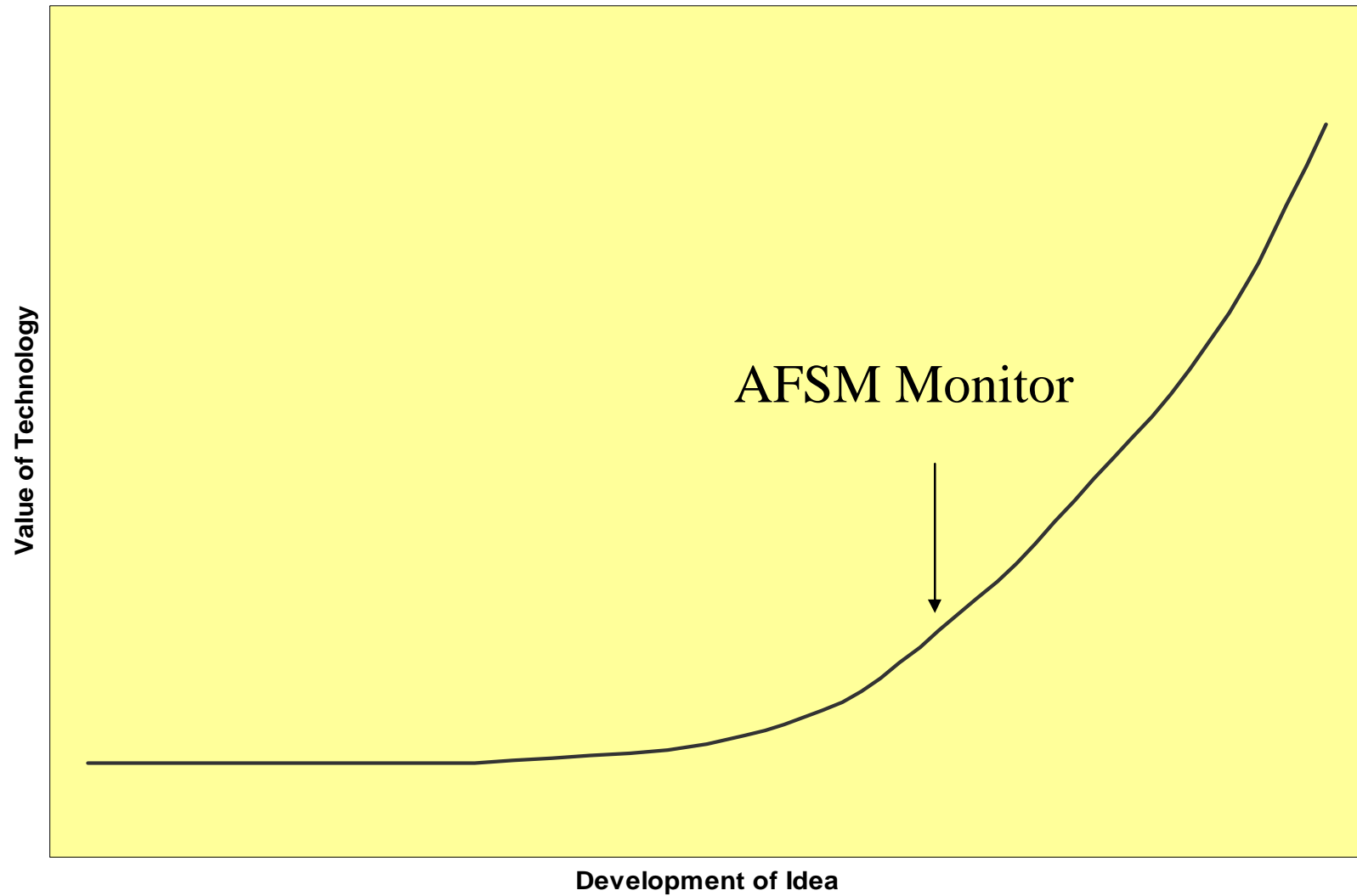
Adding Value...



Funding?

- Grant funding
- Equity Investment

Value?



Idea number two:

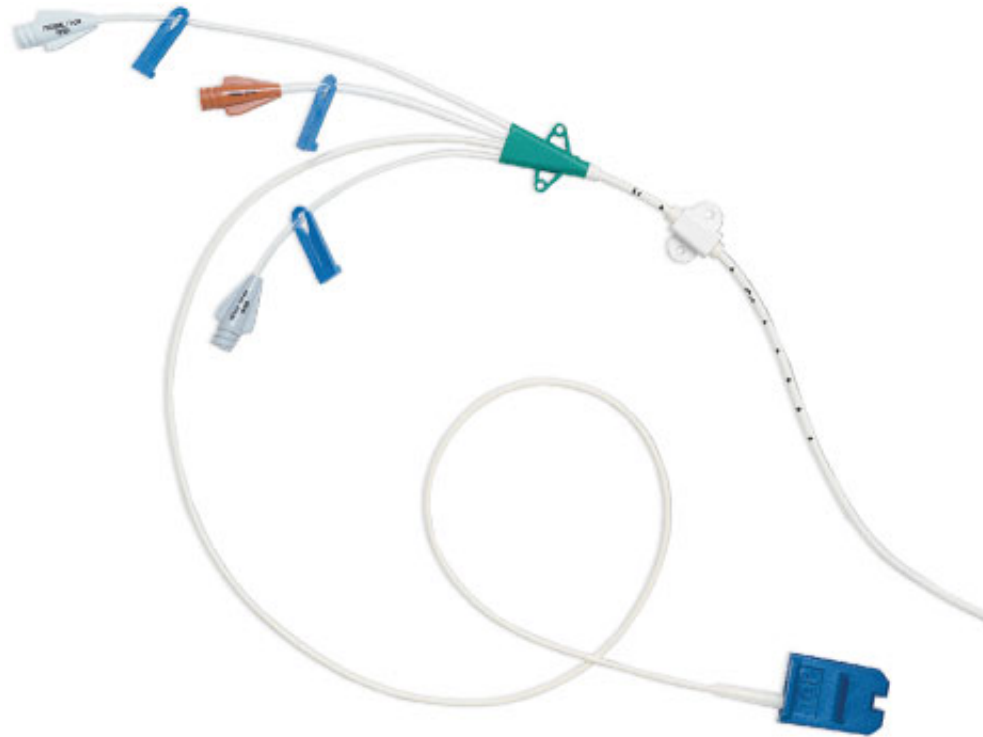
A Calibration Method

Our Technology: Extracorporeal Oxygen Saturation Monitor

O_2 Sat



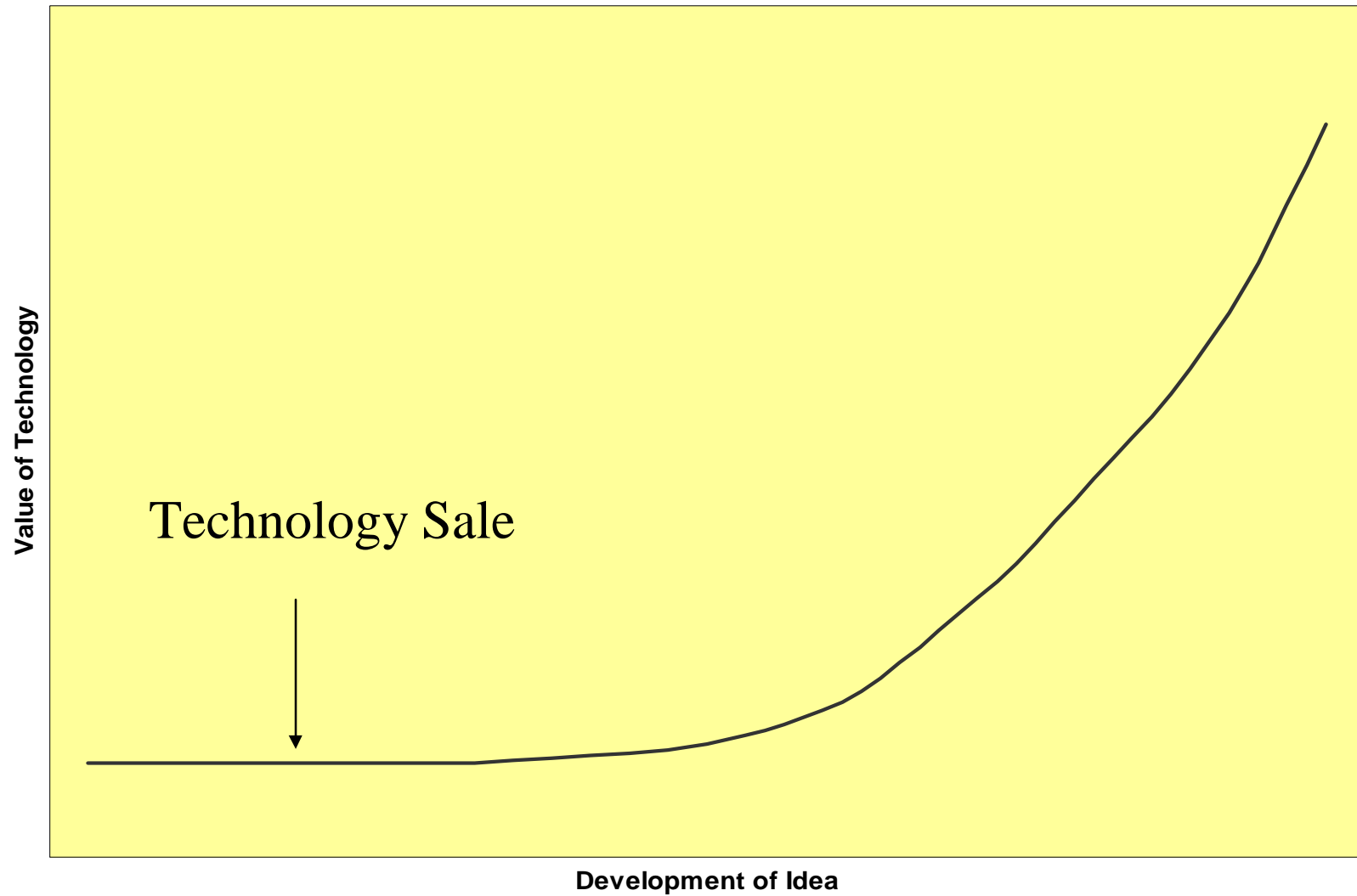
What we saw:
Oxygen Saturation Catheter



By adapting our technology to their invasive catheter we showed that the following advantages could be achieved:

- Calibration free
- Disconnect without loss of calibration
- Lightweight connector
- Cheaper monitoring
- User friendly

Value?



Why?

- No customer education required.
- Added value to a product which had already achieved a good market penetration.
- We held the patent.

Advantage to Us

- Established market.
- No need for feasibility study.
- No engineering prototypes or pre-production prototype required.

The objective for a company is to
be commercially successful,
i.e. to make money

Doing interesting work is not its primary
objective.

A company has legal and financial
obligations that must be met.

Risk

The exploitation of IP offers a high return on investment. However, this approach has inherent uncertainties:

- Successful exploitation can only be achieved by bearing financial risk.
- The risk can be minimised by careful management, but not eliminated.