

Future IVD products – where are they and how to realise them

Forsight workshop IV
P Mundill

Future expectations / needs

- Increased personalisation of improved cost effective treatment
 - Deskillling of the test protocol and the result interpretation
 - Real time monitoring and alert of treatment effectiveness
 - Personalised adjustment in treatment protocols
 - Use of "raw" unprocessed samples
- Treatment selection and denial
 - Public campaigning
 - Health managers and providers challenging pharma claims
 - Regulators increasing post launch surveillance of treatment protocols

Drivers for change – Public pressure

- Health care providers/insurers are now able to use their customer data base to examine therapy effectiveness and influence treatment strategies
- Patient groups are moving from support to advocate roles. The internet has given them access to scientific papers and country specific approvals, which they then use within their local environment
 - In the UK the use of Herceptin for early stage breast cancer has grown on the back of such campaigning
- Cost and risk management requirements
 - Currently diagnostic cost are at 10% of the total health care budget, they can be expected to be more focused on high value treatments
 - Ability to manage chronic conditions at the lowest cost with minimal risk will be increasingly important

Product environment

A test should aid diagnosis and improve treatment outcomes

Regulators	Patients	Public organisations
Health providers	Doctors	Media
Health insurers	Health centres	
	Hospitals	

Scientific community	IVD companies	Pharma companies
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Companies exist to generate wealth

Where are the future medical IVD products ?

- Disease orientated medical researchers
 - Marker / diagnosis options
- Technologist / engineers
 - New materials / principles leading to alternate views
- Current users and customers
 - local understanding
 - working within their current paradigm
 - functionally orientated
- Health providers and developers
 - Health authorities – health insurers
 - Pharmaceutical companies

What will new devices look like



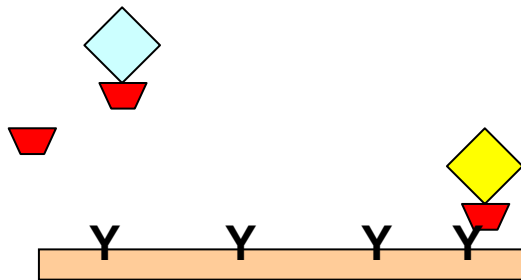
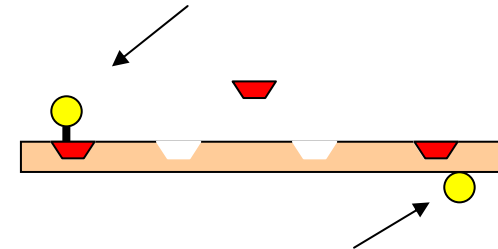
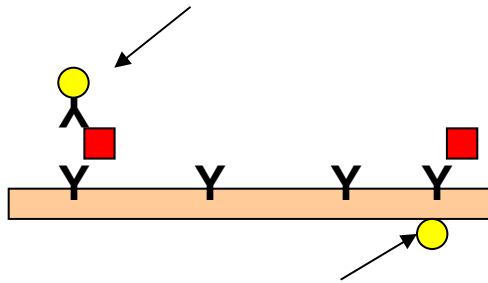
Implanted devices – will it happen

- Heart monitor/ activator – also with wireless alert
- Delivery system for insulin
- Intestine camera
- Implanted RFID for personal identification
 - Harvard medical school is evaluating the use of such chips in their hospitals
 - An American security company is testing their use in volunteer employees as an alternative to ID cards
 - Dutch clubbers are reported to have had them implanted as night club ID, instead of traditional cards

Technology

- Binder – from antibodies to enzymes to imprinted surfaces to designed surfaces
- Detection based on labels attached to binders to surfaces which respond to binding events

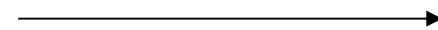
Immuno sensor formats - binder



Binding lead to activation



Changing properties



ph activation, specificity

Technology

- Binder – from antibodies to enzymes to imprinted surfaces to designed surfaces
- Detection based on labels attached to binders to surfaces which respond to binding events
- Digitalisation allows for the processing of complex matrices of data
- Miniaturisation allows for implantable and easy to use formats

Combination products – easy to use

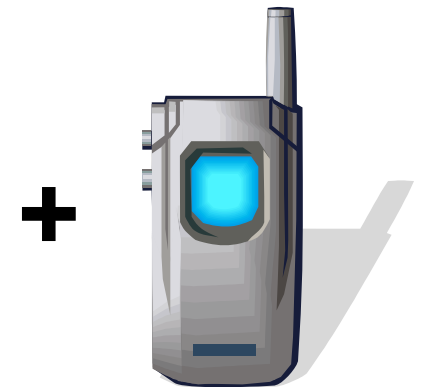
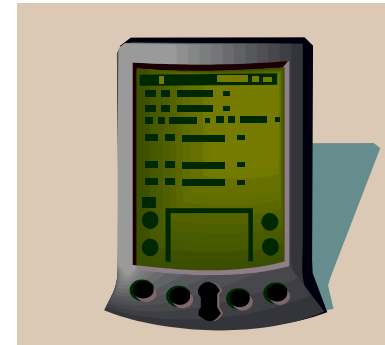
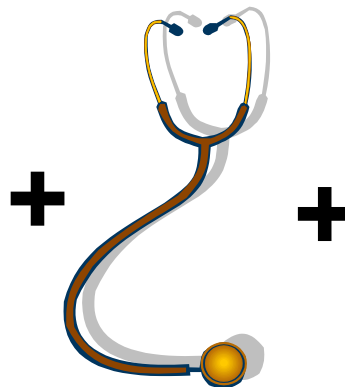
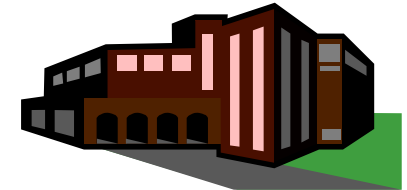


Immunochemistry, optics, ASIC,
decision algorithm

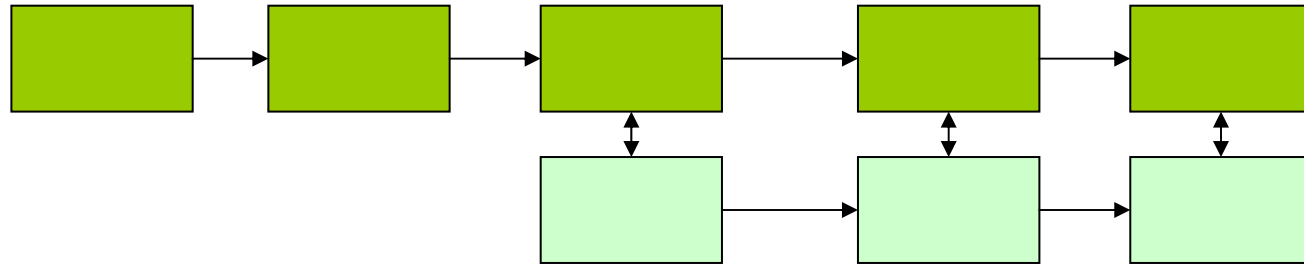
Miniaturised PCR, invisible
sample processing, data base
analysis



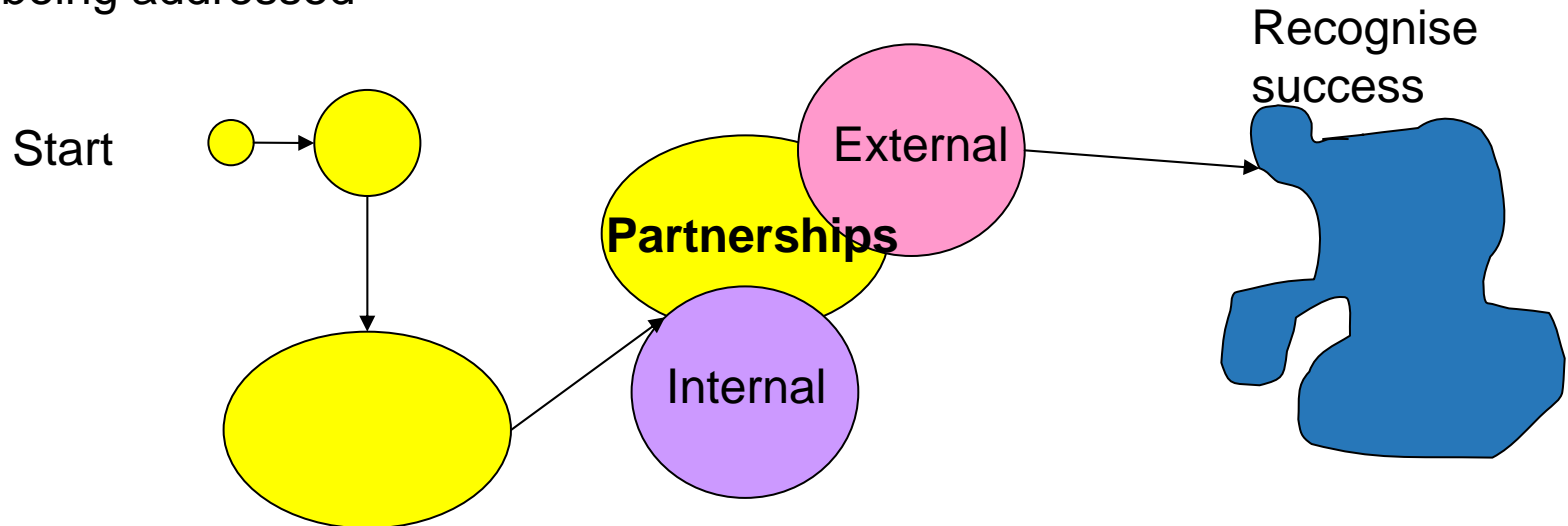
Where & what are these future products



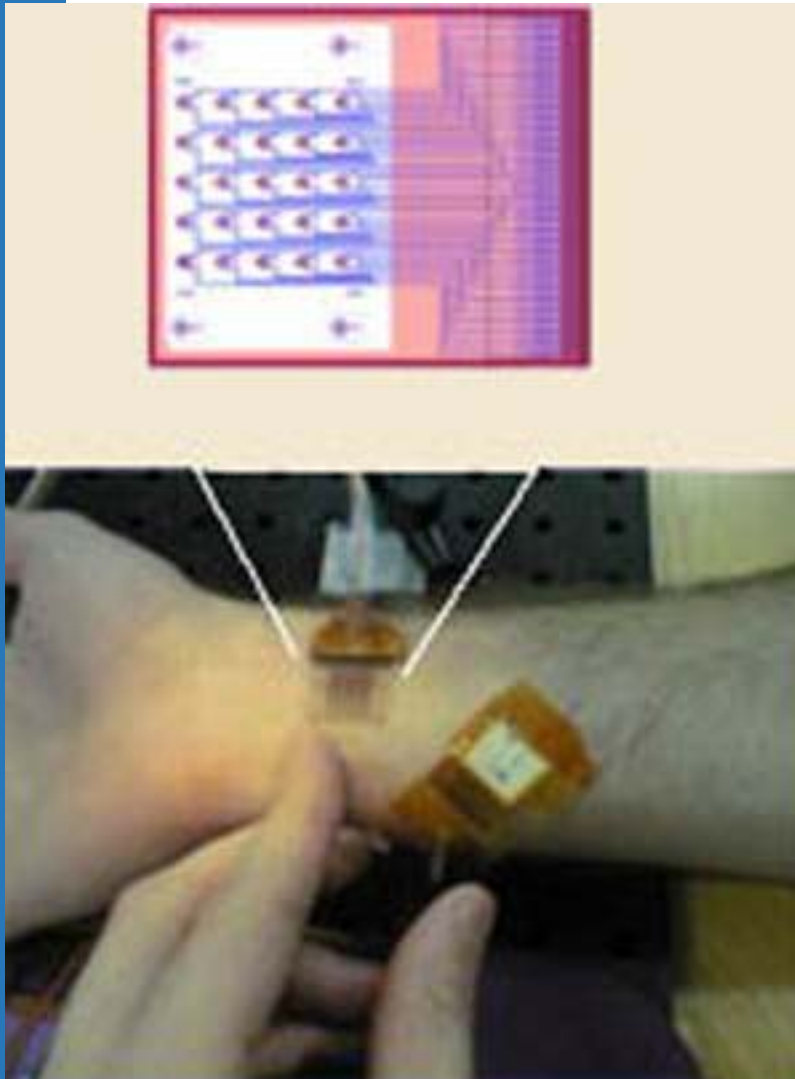
How to get there ?



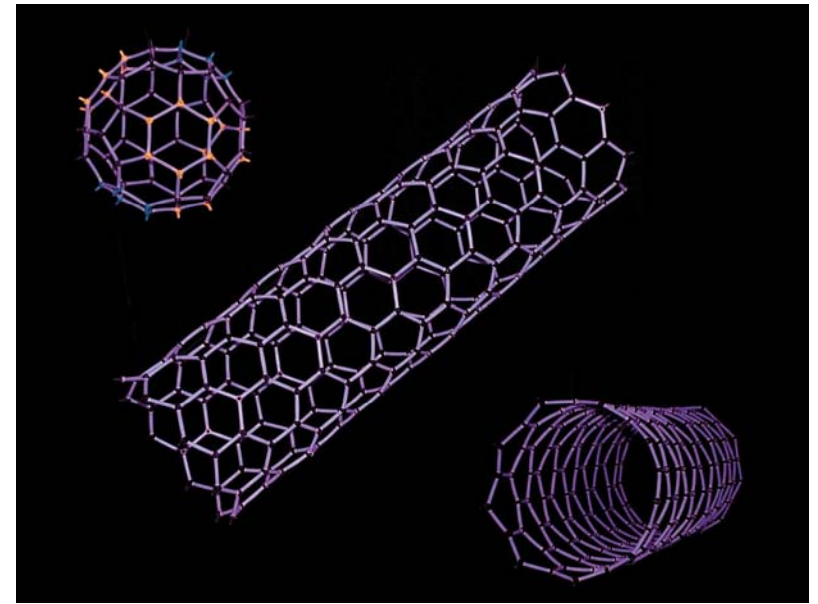
It depends on the question you are asking and the problem being addressed



Future products ?



FOBIS June 2006



Tomorrow a heart or cancer alert ?

Anaud Gadre measurement of glucose

Summary

- Be clear about the problem and the future customer
- Walk the technology shop look for new ideas
- Combine ideas from different places
- Develop a concept to give the maximum benefits
- Use internal and external finance sources
- Walk first before you run
- All projects look like failures at the halfway mark

