

# Commercialising Digitally Enabled Healthcare Applications

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**We help companies to  
develop, prove, scale-up  
and commercialise new  
products and processes**



**We help deliver,  
de-risk and accelerate...**



**...your concepts into  
successful products**



**Biotechnology**



**Biotherapeutics**



**Formulation  
and materials**



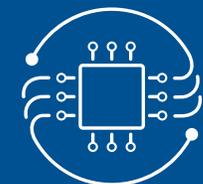
**Pharmaceutical  
processing**



**Photonics**



**Printed  
electronics**



**Flexible hybrid  
electronics**



**Digital**

**...with our expertise and  
core capabilities**

# ...enabling companies in high value markets



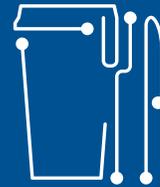
Pharmaceuticals



Medtech



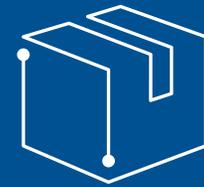
Agritech



Food, drink and  
nutraceuticals



Fast-moving  
consumer goods



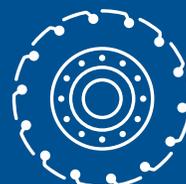
Logistics and  
packaging



Electronics



Energy



Automotive



Aerospace



Speciality chemicals  
and materials

# Capability and Expertise

We help accelerate companies from initial concept design through to market commercialisation.

- Creation and scale up of new IoT systems at scale.
- Ability to cost effectively provide data insights from new concept systems before commercial deployment.
- World leading in Digital Flexible Electronics and supporting firmware and environmental test requirements.
  - 1,500m<sup>2</sup> specialist integration facility to develop and scale-up new IoT applications and systems.
  - 1,500m<sup>2</sup> of cleanroom facility to develop and scale-up of novel electronics components.
- Expertise in managing multi-partner research and development programmes for clients.



## Cleanroom Facility

Development of processes and components involving printing, patterning and encapsulation.

Situated in Durham, UK

## Specialist Integration Facility

Development of flexible hybrid electronics

Situated in Durham, UK



# Application Examples



# Innovating together with CPI

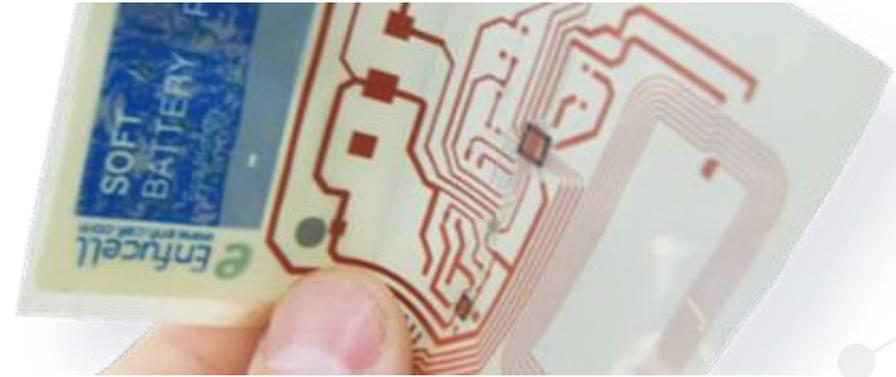
## CASE STUDY

## Digitally enabling the pharma supply chain

Creation of flexible smart tags/labels with embedded flexible hybrid electronics for condition monitoring (temperature and humidity) and global track and trace of clinical medicines

### Outcomes and impact

- *Enabling the reduction of losses in clinical supply chains reducing waste*



AstraZeneca 



# Innovating together with CPI

## CASE STUDY

## Reinventing electronics for mass market applications

Supporting the development of ultra low cost flexible integrated circuits (FlexIC) that can be embedded into everyday objects to make them smart.

### Outcomes and impact

- *Enabling novel flexible electronics to make billions of items smart*
- *Applications include new reusable sample transport and tracking system. Providing item-level digital traceability in real-time from the patient all the way through to the pathology lab.*



PragmatIC



## CASE STUDY

# Commercial Project: Developing Smart Adherence Packaging

CPI worked with Closed Loop Medicine to develop a smart blister pack concept that can be used across a number of disease states



## Project

- New designs processes and prototypes for an NFC enabled smart pill pack concept that logs time and date of when pills are removed from packaging

## Innovation

- Integrate electronics into pill packaging to develop a new adherence hardware that could be used within CLM's "Closed Loop" healthcare ecosystem

## Growth

- Strengthen UK position in connected adherence packaging
- Support CLM to innovate in developing new (closed loop) models of healthcare



# Deposition processes

## HP 1T

### Improving safety through smart helmets

CPI developed a printing process for pressure sensors that were distributed across a flexible surface that when embedded into a helmet, would measure location and force of an impact.

#### OUTCOMES AND IMPACT

- From the prototypes produced by CPI, HP1 Technologies were able to demonstrate functionality to a number of potential customers which has helped to grow their business



Electronic components

Integration and conversion

Products and systems

Specification and design

Quality assurance and testing



**Data capture related to Traumatic Brain Injuries caused by cycling accidents. Upscaling from sketch to proof of system concept**

# CPI align with Ventus Medical to bring novel pharmaceutical electronic nicotine delivery system to clinical trial.

## CASE STUDY

CPI is working with Ventus Medical, a pharmaceutical company specialising in the innovation of novel inhalation technologies. Ventus Medical is creating a nicotine replacement therapy that has been designed to help adult smokers to quit smoking by alleviating nicotine withdrawal symptoms.

### Outcomes and impact

- Working together, CPI has assisted in reducing overall development time and expediting time to market through rapid development of design and manufacturing practices required to deliver this innovative product.
- CPI has reduced costs, increased margins and reduced the time to clinic through the delivery of specialist skills and facilities within the flexible electronics market and medical devices.



# In Summary

- It is difficult to commercialise new digital Healthcare applications
- However, to be competitive in the future, Healthcare organisations cannot remain a largely non-digital system and must harness digital innovations.
- Digital technologies are providing the opportunity to revolutionise time efficiencies to “re-create” more time for empathetic personal interaction and to bring more humanisation back into the clinician/product experience
- We are humans, and digital healthcare innovation is not solely about the technology, but rather it is the common human touch, which must work in a complimentary marriage with information technologies to improve upon the quality and empathy of patient care.

# Thank you

For more information visit [www.uk-cpi.com](http://www.uk-cpi.com)

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