

# Intelligent Products

  
POWERCOAT™  
energizing paper

by  
  
ARJOWIGGINS  
creative papers

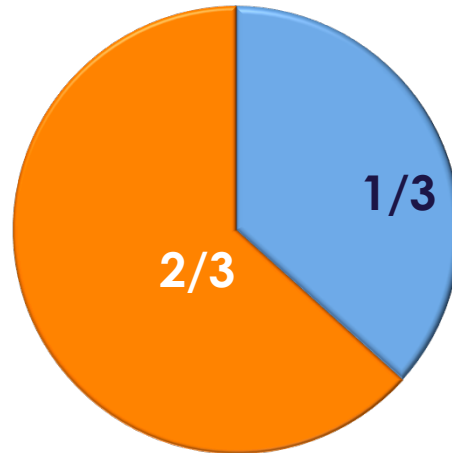
  
POWERCO  
izing pap

# ABOUT US

## SEQUANA

antalis <sup>EM</sup>

- €2.8 bn in sales
- #1 in Europe, #4 worldwide
- Operations in 44 countries
- 2 million tonnes of paper distributed every year
- 110 distribution centres
- More than 6,000 employees



 arjowiggins

- €1.5 bn in sales
- World-leader in technical and creative papers
- High-profile brands including Conqueror, Satimat Green, Cyclus, Cocoon, Rives
- 1.1 million tonnes of paper produced every year
- 25 production sites
- More than 5,200 employees



# arjowiggins

## LEADING MANUFACTURER OF CREATIVE AND TECHNICAL PAPERS

### GRAPHIC

#### GRAPHIC AND SPECIALITY PAPER

Standard coated and recycled papers

Speciality paper (playing cards, transfer, tissue, sterile wraps)

Recycled pulp

### COATED US

#### PAPER FOR PRINTING AND PUBLISHING

Coated paper

### CREATIVE PAPERS

#### PAPER FOR CORPORATE COMMUNICATIONS

Corporate communications

Advertising and promotion

Luxury packaging

Bookbinding, casting

### SECURITY

#### SECURITY PAPER SOLUTIONS

Banknotes

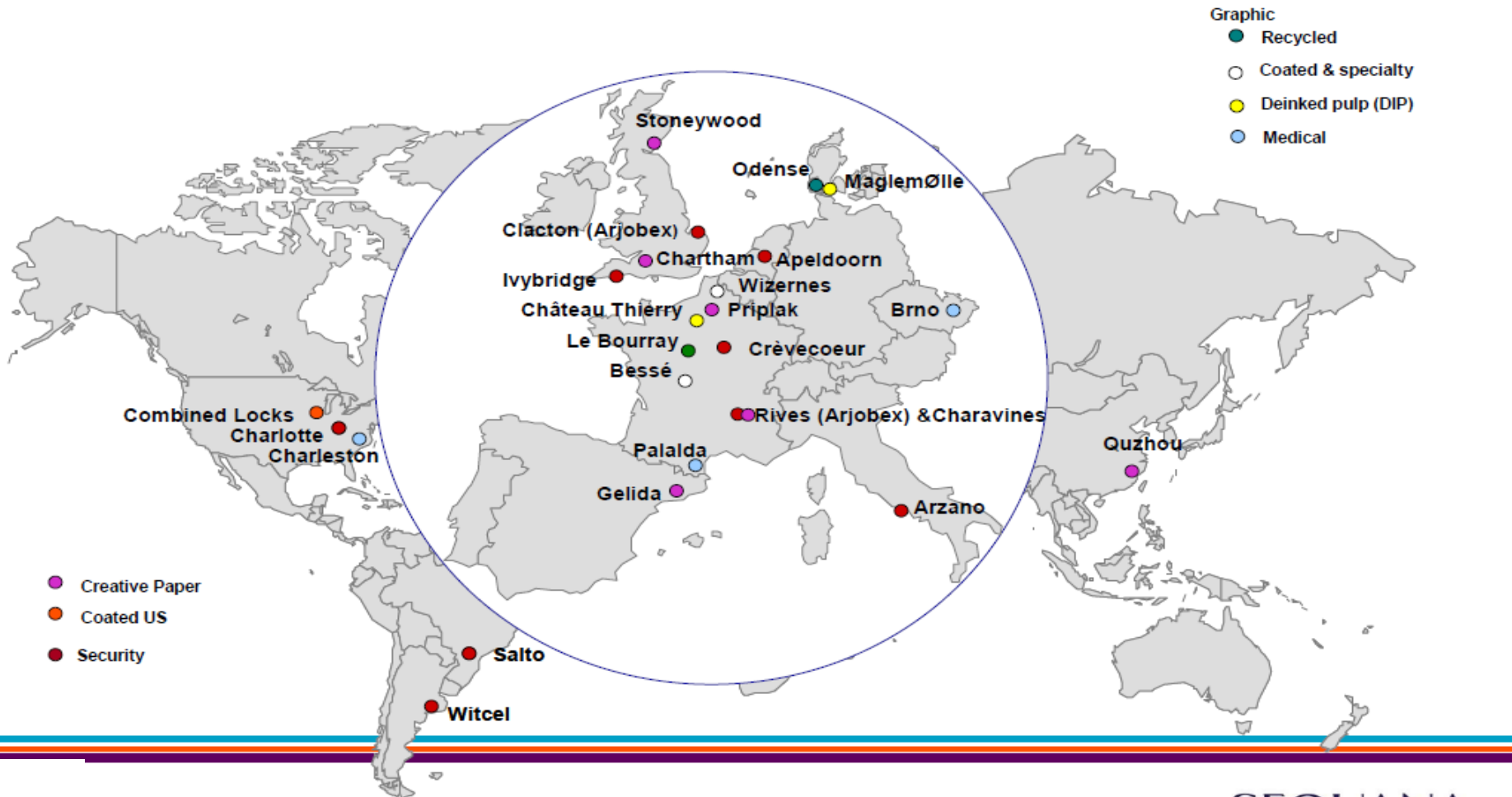
e-documents (biometric passports, traceability solutions)

Brand protection and anti-counterfeit solutions

# 25 PRODUCTION SITES



# arjowiggins



SEQUANA



# POWERCOAT® BY ARJOWIGGINS CREATIVE PAPERS

PAPER AS A SUBSTRATE FOR PRINTED ELECTRONICS, AN ALTERNATIVE TO PLASTICS



FOR INNOVATIVE  
EXCELLENCE



INNOVATION OF THE YEAR  
2013



Printed  
Electronics  
AWARDS  
IDTechEx

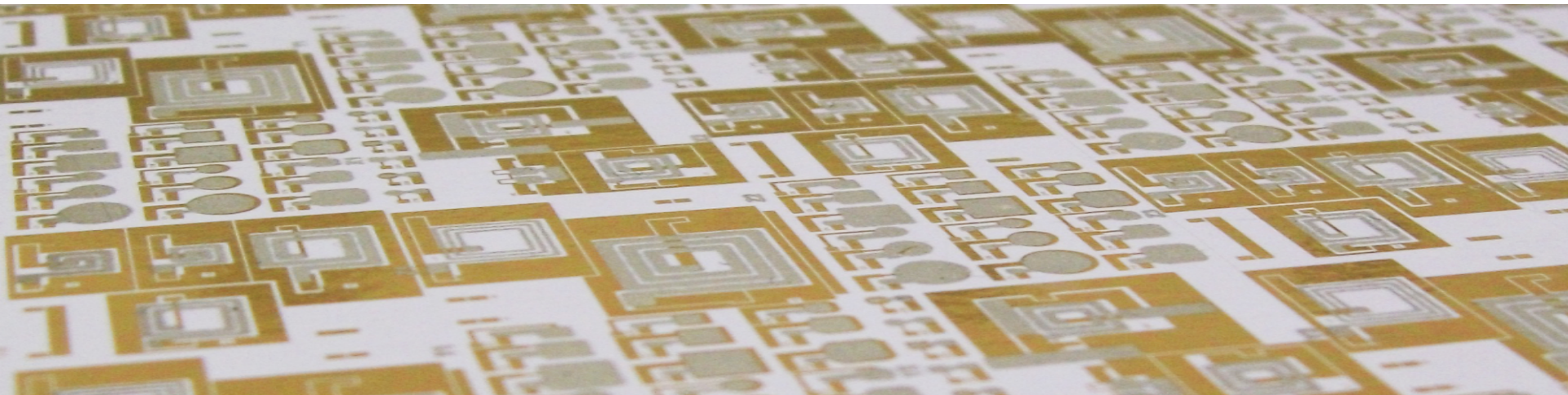
PRODUCT DEVELOPMENT  
AWARD



CERTIFICATE OF MATERIAL  
EXCELLENCE



THE WTN MATERIAL AWARD  
2013





POWERCOAT

# A REVOLUTION IN PRINTED ELECTRONICS SUBSTRATES

**IN OUR QUEST TO CONTINUALLY CHALLENGE AND INNOVATE, WE'VE DEVELOPED POWERCOAT™ - A UNIQUE CELLULOSIC FORMULATION AND COATING PROCESS THAT PROVIDES AN ULTRA-SMOOTH, FLEXIBLE, HIGHLY SUSTAINABLE SUBSTRATE FOR PRINTED ELECTRONICS.**



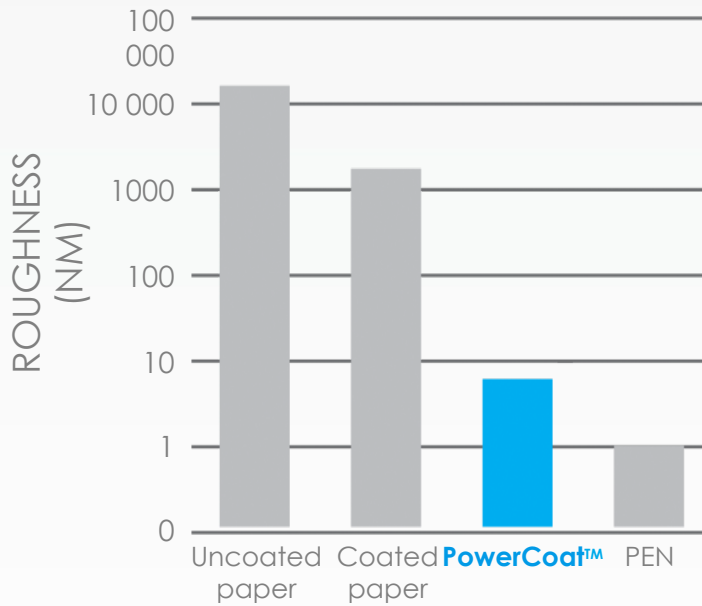
# POWERFUL PAPER FOR INTELLIGENT SOLUTIONS

- Unprecedented surface smoothness
- High thermal stability
- Excellent sintering behaviour
- Improved control over electronic layer adhesion
- Superior stability in roll-to-roll processing
- Reduced overall production costs as less ink is required for printing
- A recyclable and biodegradable solution for all your printed electronics needs

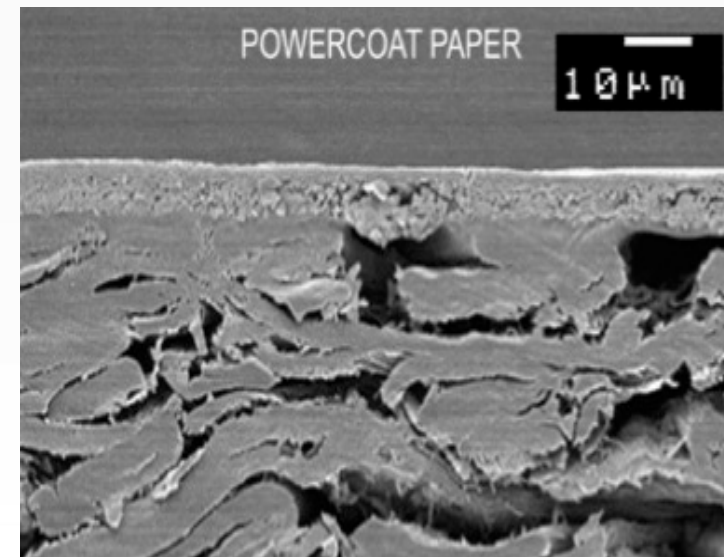
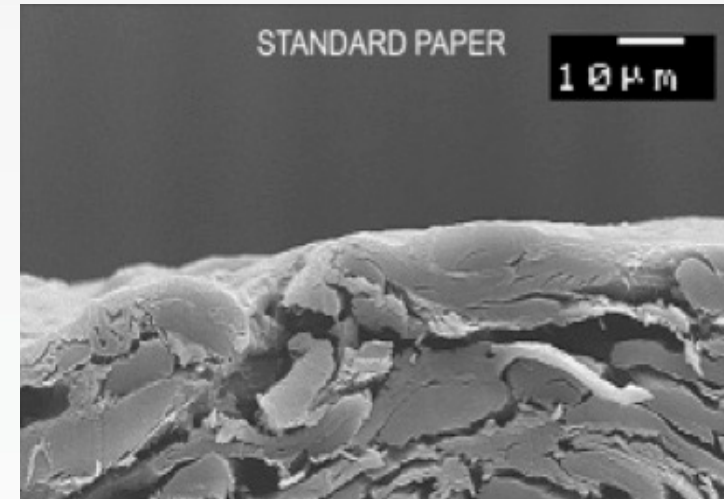


# POWERCOAT OUTPERFORMS EVEN THE BEST PLASTICS (SURFACE SMOOTHNESS)

## Roughness of different substrates



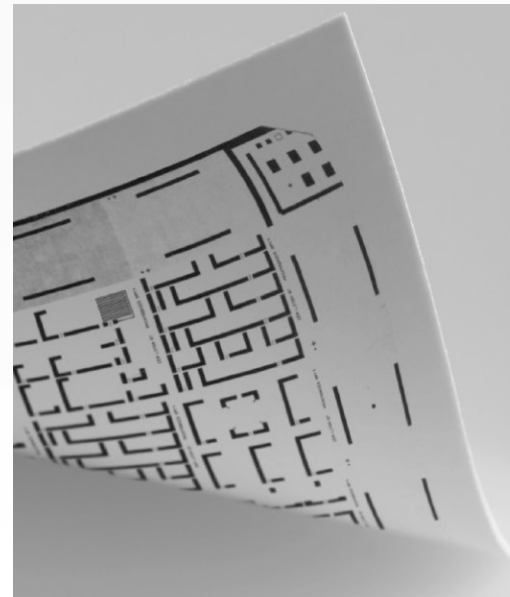
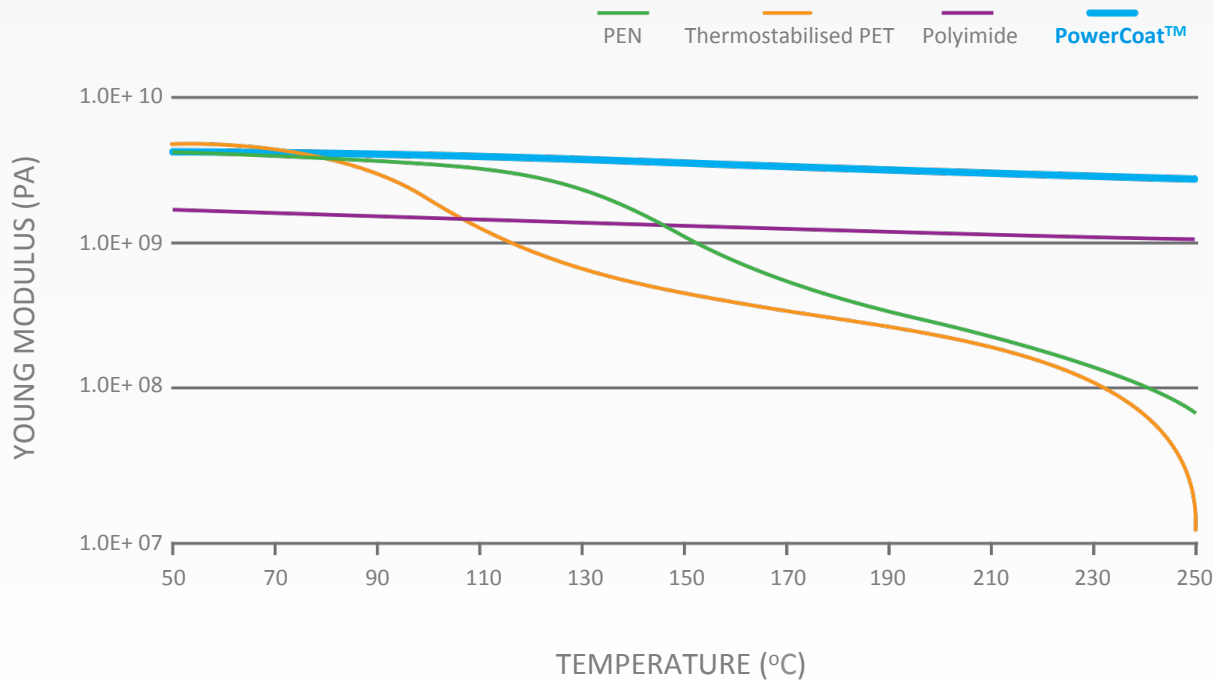
Roughness of PowerCoat® < 10nm





# POWERCOAT OUTPERFORMS EVEN THE BEST PLASTICS (THERMAL STABILITY)

## PowerCoat dimensional stability vs temperature



# POWERCOAT® the perfect sustainable alternative for printing electronics

BECAUSE END-USERS ARE THRIVING FOR INCREASING SUSTAINABILITY, AWCP IS A PIONEER IN OFFERING EVER MORE SUSTAINABLE PAPER, WHILE UPHOLDING PREMIUM QUALITY, INNOVATION & CREATIVITY



## POWERCOAT IS FULLY RECYCLABLE

- Powercoat is 100% paper, containing absolutely no plastics, making it fully recyclable and the more responsible choice for printed electronics applications



## POWERCOAT IS FSC CERTIFIED

- In 2007, first fine papers company to become fully FSC certified, in 2007
- FSC certification is one of the most comprehensive certifications for well-managed forestry. Certification means that our pulp is sourced from forests that are managed responsibly

## THE MILL WHERE POWERCOAT IS PRODUCED IS ISO14001 CERTIFIED

- This means that our production process respects the highest environmental standards, and that we are committed to continuously trying to improve our processes to keep the impact on the environment at a minimum.





# APPLICATIONS & SUSTAINABILITY

- integrating intelligent functionality in disposable labelling and packaging
- more efficient production of RFID antennae using less ink
- resistors, capacitors, self-inductance and other passive components
- lighting and display circuitry compatible with large area flexible products
- battery electrodes, sensing technology and much more

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**POWERCOAT™ PROVIDES THE IDEAL SUBSTRATE FOR EVEN THE MOST DEMANDING PRINTED ELECTRONICS APPLICATIONS. IT REDUCES CHEMICAL CONSUMPTION AND LESSENS THE ENVIRONMENTAL IMPACT OF PRINTING.**



POWERCOAT



# SEAMLESS INTEGRATION OF 'INTELLIGENCE' IN PAPER



POWERCOAT

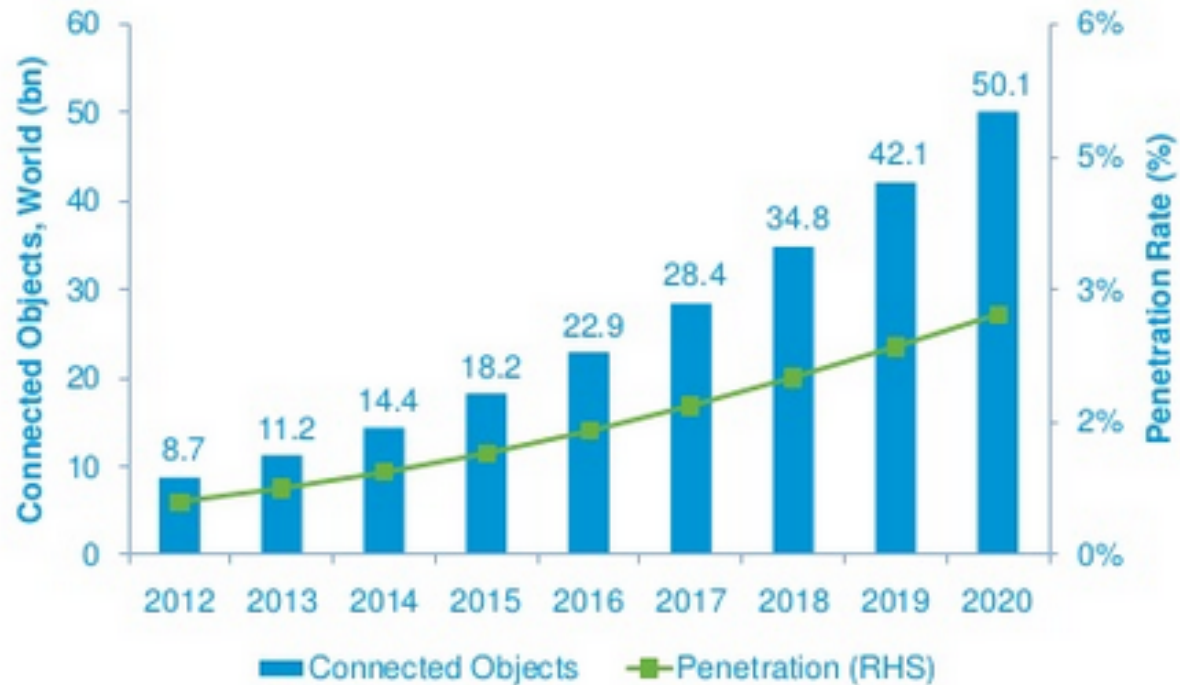
- **Compatibility of PowerCoat Paper with both Graphic Inks and Electronics Inks across multiple electronic & graphic printing techniques gives PowerCoat an edge over multi-material / plastics options.**
- **Seamless integration of basic functions (circuitry, resistors, capacitors, sensors, displays, etc...) enables visual and multisensorial effects to enhance communication tools as well as the purchasing experience of packaged goods.**
- **Its excellent printability with graphic inks makes it possible to integrate visual content onto flexible Electronics products and Printed Intelligent Features onto Graphics & Packaging Products.  
→ lower cost and recyclable solution.**

# CONNECTED OBJECTS





# Number of Connected Objects Expected to Reach 50bn by 2020



**Penetration of connected objects in total 'things' expected to reach 2.7% in 2020 from 0.6% in 2012**

Source: CCS, 2013



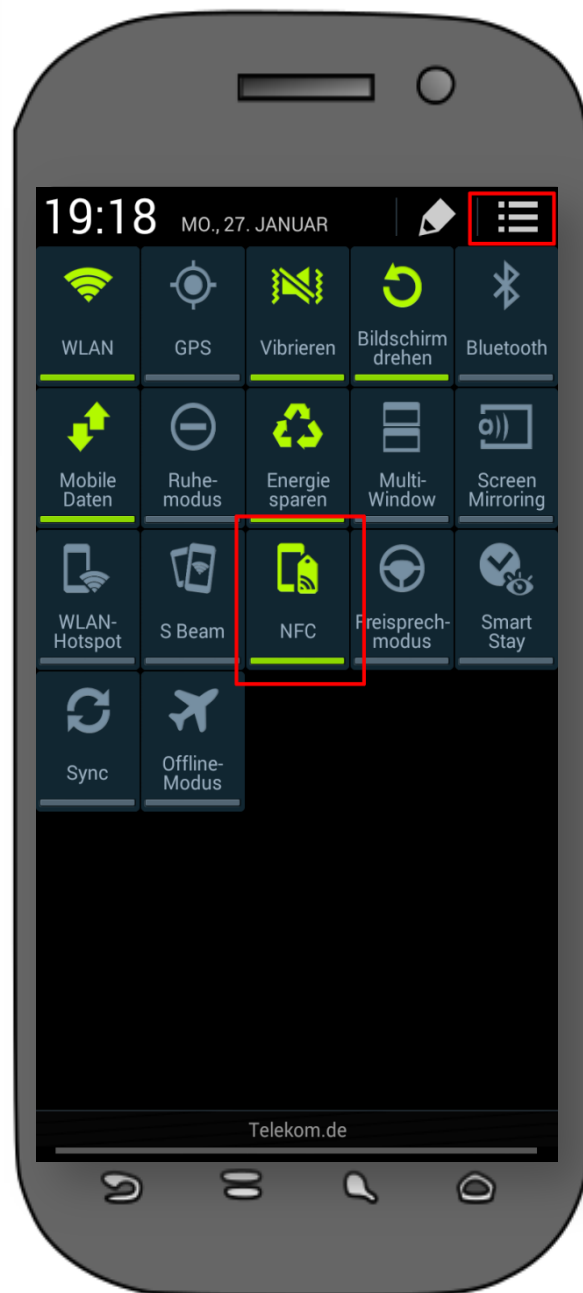
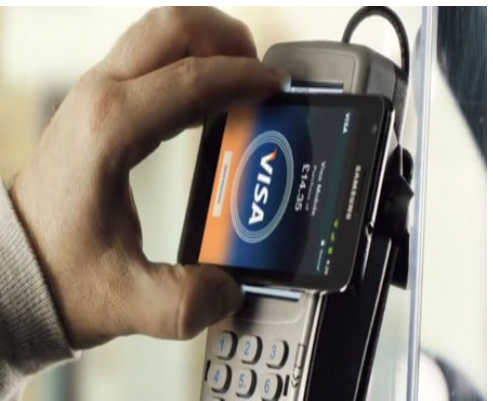
# CONNECTED PAPER

  
**POWERCOAT™**  
energizing paper  
by  
  
**ARJOWIGGINS**  
creative papers



 arjowiggins

POWERCOAT™  
**ALIVE** 

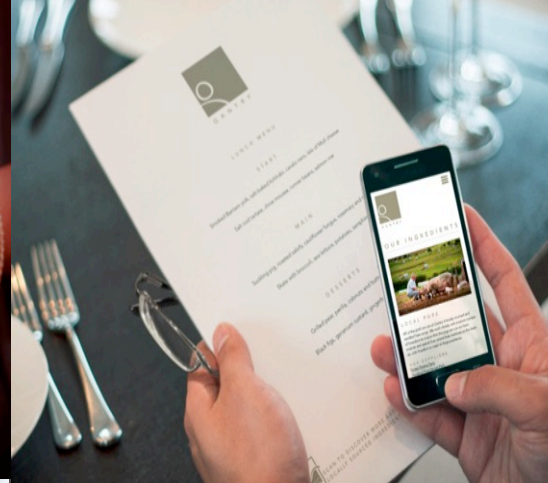
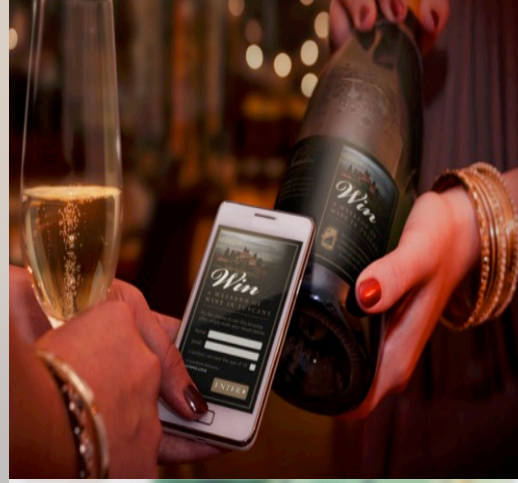
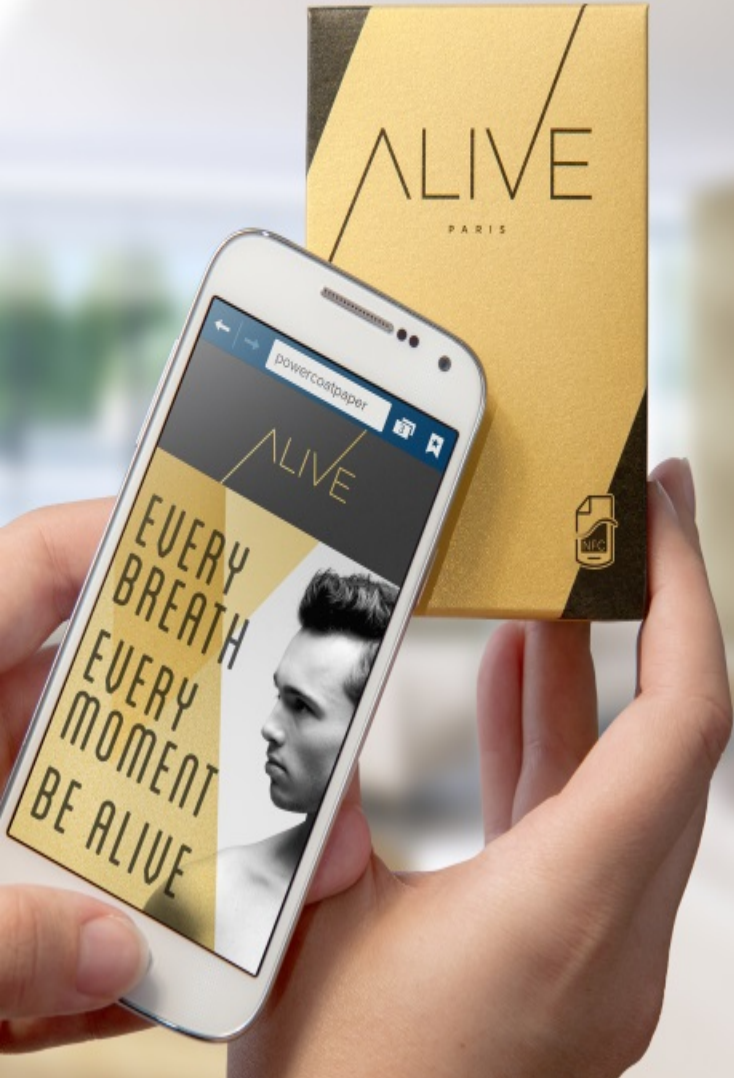


# IT'S ALL ABOUT NFC!\*

\* Near Field Communication



POWERCOAT™  
**ALIVE**



# WHAT ARE THE ADVANTAGES?

**SIMPLICITY**

**INTELLIGENCE**

**INTERACTIVITY**









# MESSAGE IN A BAG: COMMUNICAT ONE TO ONE





écoute

IF YOU  
LIKE THIS  
YOU MAY  
ALSO LIKE...

SCAN FOR  
RECOMMENDATIONS



écoute

Wool Topaz Sweater  
\$68.00  
If you like this, we think you'd  
also love these items:

CLOTHING

ACCESSORIES

Tea Leather Handbag  
\$72.00

Chunky Fish Bone  
Mitten Wool Scarf  
\$55.00

Shining Silver  
Embossed Pendant  
\$28.00

SHOES

FOR LABELS AND TAGS





Here's to the kids missing the last train home 201

BOOK A TEST DRIVE

Search

Book

Check availability

Book



CHIKARA

BOOK A TEST DRIVE  
Scan with your NFC enabled phone to arrange a drive

# PERSONALISED COMMUNICATION







LUNCH MENU

START

Smoked Bantam yolk, salt-baked kohlrabi, cavalo nero, Isle of Mull cheese  
Salt cod tartare, chive mousse, runner beans, salmon roe

MAIN

Suckling pig, roasted salsify, cauliflower fungus, rosemary and  
Skate with broccoli, sea lettuce, potatoes, samphire

DESSERTS

Grilled pear, perilla, cobnuts and butter  
Black figs, geranium custard, gingerb

SCAN TO DISCOVER MORE ABOUT  
LOCALLY SOURCED INGREDIENTS



OUR INGREDIENTS



LOCAL PORK

All of the pork we use at Gantry is locally sourced and certified free range. We work closely with a select number of breeders to ensure that the pigs are out and being outside and spend their entire lives outdoors in the fields we, with freedom to roam in large paddocks.

OUR SUPPLIERS

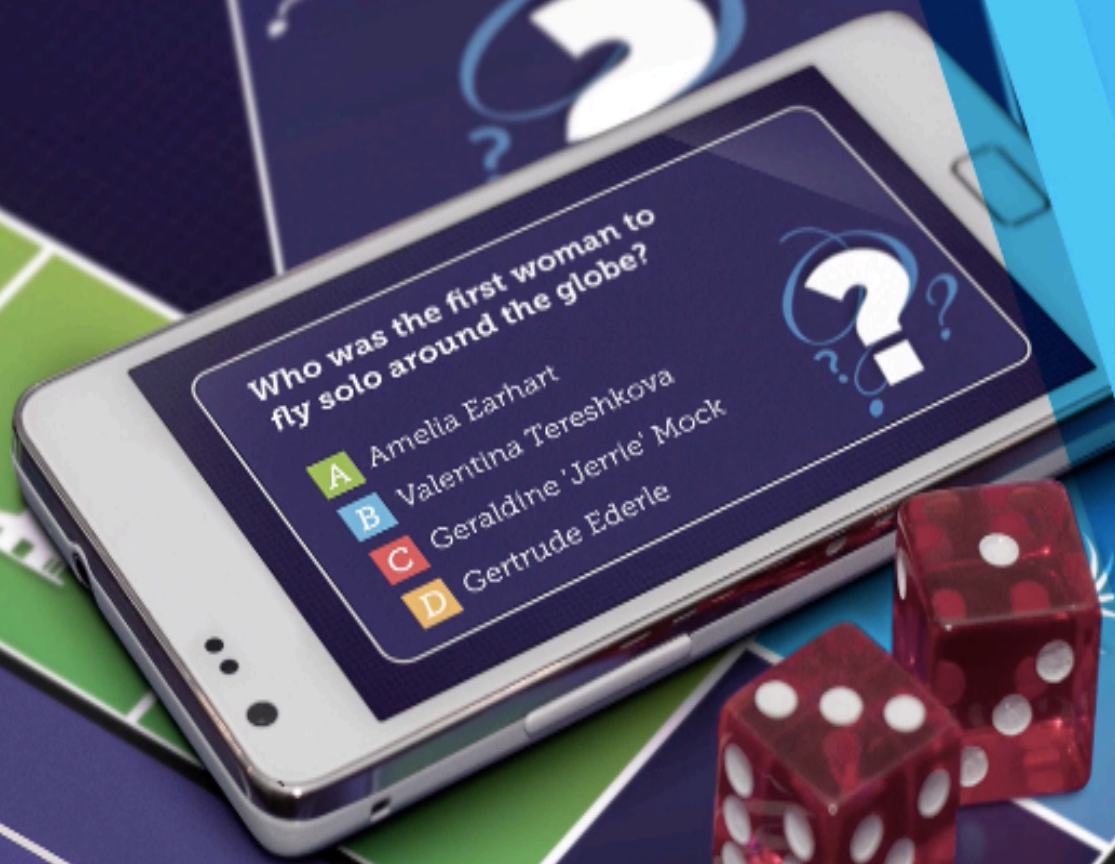
Evelyn's Farm  
Woodward Farm

# COMMUNICATION CAMPAIGN AND DATA MANAGEMENT



PROGRAMMING OF CAMPAIGNS

CAMPAIGN MANAGEMENT AND FOLLOW-UP



**AND MUCH MORE... !**









**MERCI – CONTACTS !**

# CONCLUSION

- **Powercoat®** provides the **ideal substrate** for even **the most demanding** printed electronics applications.
- It **reduces chemical consumption** and **lessens the environmental impact** of printing.
- The applications are almost unlimited :
  - » Integrating **intelligent functionality in disposable labeling and packaging**
  - » More efficient production of **RFID antennae using less ink**
  - » Resistors, capacitors, self-inductance and other passive components
  - » **Lighting and display circuitry** compatible with large area flexible products
  - » **Battery electrodes, sensing technology** and much more
- This excellent result is due to the **very high smoothness and high thermal resistance** & stability of the paper