Contactless – Are you ready to ride the next wave in EMV?
We are the world leader in digital security

$3.3bn
2014 REVENUE

14,000+
EMPLOYEES

116
NATIONALITIES OF OUR EMPLOYEES

180+
COUNTRIES WHERE OUR CLIENTS ARE BASED

2,900
R&D ENGINEERS

114
NEW PATENTS FILED IN 2014

We’re unique. We’re global. We’re innovative

Questions? Contact Support@ShorelineCards.com
Gemalto #1 in Payment Cards

Total Chip Card Shipments 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>Manufacturer/Headquarters</th>
<th>Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gemalto Netherlands</td>
<td>2,479.2</td>
</tr>
<tr>
<td>2</td>
<td>Oberthur France</td>
<td>1,127.9</td>
</tr>
<tr>
<td>3</td>
<td>Giesecke &amp; Devrient (G&amp;D) Germany</td>
<td>896.1</td>
</tr>
<tr>
<td>4</td>
<td>Morpho Germany</td>
<td>773.7</td>
</tr>
<tr>
<td>5</td>
<td>Watchdata System China/Singapore</td>
<td>602.0</td>
</tr>
<tr>
<td>6</td>
<td>Bluefish Technology Denmark</td>
<td>321.0</td>
</tr>
<tr>
<td>7</td>
<td>Beautiful Card Taiwan</td>
<td>273.9</td>
</tr>
<tr>
<td>8</td>
<td>Jing King Tech Holdings Hong Kong</td>
<td>191.2</td>
</tr>
<tr>
<td>9</td>
<td>Asia Credit Card Production China</td>
<td>182.0</td>
</tr>
<tr>
<td>10</td>
<td>Exceet Card Group Germany</td>
<td>169.6</td>
</tr>
<tr>
<td>11</td>
<td>Goldpac China</td>
<td>156.4</td>
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<tr>
<td>12</td>
<td>COS Software Co. China</td>
<td>119.7</td>
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<tr>
<td>13</td>
<td>DZ Card Thailand</td>
<td>101.0</td>
</tr>
<tr>
<td>14</td>
<td>Valid Brazil</td>
<td>96.2</td>
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<tr>
<td>15</td>
<td>HID Global United States</td>
<td>93.0</td>
</tr>
<tr>
<td>16</td>
<td>China Card Group China</td>
<td>91.0</td>
</tr>
<tr>
<td>17</td>
<td>CPI Card Group United States</td>
<td>90.6</td>
</tr>
</tbody>
</table>

Note: Chip cards include Visa, MasterCard, American Express, JCB, and Maestro cards with mag-stripes as well as ATM-only and domestic-only debit cards, transportation cards, and other proprietary cards. © 2015 The Nilson Report

Questions? Contact Support@ShorelineCards.com
US EMV card projections (millions)

Questions? Contact Support@ShorelineCards.com
Six of every ten US terminals to support EMV cards by end of 2015

U.S. Penetration Forecast of EMV Ready Hardware Terminals
(In millions of locations/percentage of locations)
Source: Aite Group

Questions? Contact Support@ShorelineCards.com
It’s not too late to launch your EMV program with Shoreline

- You benefit from our Processor Ready Program: Turnkey EMV and Instant Issuance solutions
- Integrated and certified with all nine US Payment Processors
- Durbin compliant profiles Pre-Approved by payment associations
- Gemalto is the #1 US EMV card mfg.
  Gemalto produced 1 out of every 3 US EMV card in 2015

Questions? Contact Support@ShorelineCards.com
EMV is your first step into Digital Payments

Four categories of secure payment technologies

- **Security**
  - CP Purchases
  - CNP Purchases

- **Convenience**

Questions? Contact Support@ShorelineCards.com
US issuers picked simplest form of EMV for Phase 1 of migration

Four categories of secure payment technologies

Security

CP Purchases

CNP Purchases

Convenience
...and everywhere around the world, contactless came next (or sometimes first)

Four categories of secure payment technologies

Security

CP
Purchases

CNP
Purchases

Convenience

Questions? Contact Support@ShorelineCards.com
Contactless EMV is in Mass Deployment Around the World

40% Of all cards shipped in 2015 were Dual Interface

3m Contactless-enabled Point of Sales

700m Contactless purchases in Europe from Sept ‘13- Sept ’14 (Visa)

Questions? Contact Support@ShorelineCards.com
Contactless Payment is now a Global Standard

- **North and South America**: Canada, Mexico, Brazil, Chile

- **Europe**: UK, Poland, Russia, France, Germany, Portugal, Turkey, Italy, Switzerland, Lithuania, Spain, Romania, Hungary, Greece, Ukraine, Slovakia, Czech Rep

- **Middle East and Africa**: South Africa, Tunisia, Egypt, UAE

- **Asia**: Taiwan, Korea, Singapore, Indonesia, Australia, New Zealand, Japan, Malaysia, China, Hong-Kong, Thailand

Questions? Contact Support@ShorelineCards.com
In Europe: MasterCard & Visa are mandating contactless acceptance

- New point-of-sale (POS) terminals in Europe must support contactless functionality*
  - 01/01/2016

- All POS terminals in Sweden, Estonia, Latvia, and Lithuania must include contactless functionality as a standard offer.
  - 01/01/2017

- All POS terminals in Europe must include contactless functionality as a standard offer*
  - 01/01/2020

- Any terminal installation with a NEW merchant must accept contactless payments
  - 31/12/2015

- Any terminal infrastructure upgrade with an existing merchant must accept contactless payments

- All terminals deployed must accept contactless payments
  - 31/12/2019

* unless a different date has been announced at country level.

Questions? Contact Support@ShorelineCards.com
Drivers for Mass Contactless Adoption

Increase Revenue
Cannibalize Cash

New Revenue Streams
Enter non traditional markets

Improved Customer Experience
Speed & Convenience

Foundation for Innovative Payment Channels
Mobile & Wearables

Questions? Contact Support@ShorelineCards.com
Contactless Payment Resonates with Consumers

More than 10% of transactions are contactless* in

<table>
<thead>
<tr>
<th>Australia</th>
<th>Canada</th>
<th>Poland</th>
<th>Singapore</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>New Zealand</td>
<td>Taiwan</td>
<td>Hong Kong</td>
</tr>
</tbody>
</table>

% of Visa & MasterCard transactions using contactless
Source: Visa, MasterCard

Coles is a leading supermarket chain, with 31% market share in grocery industry in Australia (2011) – Source: Coles/Deloitte

Questions? Contact Support@ShorelineCards.com
“From Nice to Must Have” - UK

72.8M Contactless banking cards

+300K Contactless POS

£30 Is the spend limit per transaction (augmented from £20 in September ’15)

£2.5Bn Spent ‘contactlessly’ in the UK first half of 2015

Questions? Contact Support@ShorelineCards.com
### Open Loop Payment Transforms Transit

**Phase 1 – Metro Bus**
8,500 buses equipped with contactless POS

- Dec 2012
- Aug 2013
- Feb 2014

| 40K contactless transactions per day |

**Phase 2 – Underground Tube**

- Sept 2014
- Nov 2014
- June 2015

| 50K contactless transactions per day | 100K contactless transactions per day | 200K contactless transactions per day | 1.2Mu contactless transactions per day |

Questions? Contact Support@ShorelineCards.com
Supermarket and grocery store drive contactless usage

Supermarket: 44% of all contactless transactions

Fast Food: 24% of all contactless transactions

Transport: 8% of all the journeys were paid using EMV cards (as of Sept ‘14)

London, where they account for every two in five payments, according to Barclayscard data.

Questions? Contact Support@ShorelineCards.com
The Impact of Increased Contactless Spend Limits

Contactless spend limit increased to 30£ in September 2015, and since then

- **Bars & Pubs**: 92%
- **Fast Food**: 62%
- **Restaurants**: 51%

8 Customers in 10 use less cash than a year ago

*Barclaycard Data*
In the US the “Dip & Wait” nature of contact EMV is not meeting consumer & merchant expectations for speed

- Contactless EMV provides same checkout time as magstripe with EMV security on top
- Contactless EMV offers most frictionless user experience
- Contactless EMV creates a consistent consumer experience between card and mobile transactions

Questions? Contact Support@ShorelineCards.com
Contactless payment is on its way to the US

- 100% of EMV terminals are contactless capable
- Tier1 merchants (re-)start enabling contactless
  - Accepted in 2m+ locations in the US (Source: Apple Feb’16)
  - 7 of the top 15 retailers will support by end 2016

![Graph showing US Contactless shipments (mu) from Q2’15 to Q2’16]

Commercial launch on selective portfolios and pilots at 4 of 10 top US issuers

Questions? Contact Support@ShorelineCards.com
What happens now? Contactless.

Questions? Contact Support@ShorelineCards.com
Use case: Barclays bPay for festivals & events

Contactless payments began on a card, but that’s no reason to stop there

- Get **fast-track access** into the event
- Make fast and secure **contactless payments**
- Unlock **special experiences** on the day
- Keep on using your bPay band **after the event** at hundreds of thousands of retailers across the UK

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Thank you