Business Continuity Management in the Payment Card Industry

**'The key is not to predict the future,
but to be prepared for it.'
Pericles, Greek statesman, some 2500 years ago**

Business Continuity Management - Background

▸ **Consumers and merchants rely on electronic payments**

- **2010: Payment cards generated $17 trillion worldwide in purchases of goods, cash advances and withdrawals**

- **2010: 798 million smart payments cards shipped worldwide**

▸ **The payment cards industry needs to effectively plan for disastrous incidents and business disruptions**

- **To respond effectively and continue business operations at an acceptable, predefined level.**

- **To ensure customers continue to be able to pay electronically with their payment cards**

▸ **SPA has created a set of business continuity principles, best practices and a business model for the card payments industry**

- **Validated with leading experts in the financial industry**

Business Continuity Management – Agenda

▸ **Basic Terms**

▸ **Creating a BCM Plan**

- ■ **Analysis**
- ■ **Strategy**
- ■ **Implementation**

▸ **Business Model**

- ■ **Potential damages vs. cost**

▸ **Value Chain Considerations**

▸ **Best Practices**

Basic Terms

▸ **BUSINESS CONTINUITY MANAGEMENT (BCM) is the comprehensive business process that identifies potential threats to an organisation and assesses the impacts to business operations that those threats might cause. BCM provides a frame of reference for building organisational safeguarding capabilities for an effective response that protects the interests of key stakeholders, reputation, brand and value-creating activities.**

▸ **A BUSINESS CONTINUITY MANAGEMENT PLAN (BCMP) documents a company's agreed-upon set of procedures to enable its organisations to continue to deliver critical products and services at a predefined and acceptable level in the event of an incident.**

Creating a BCM Plan – Analysis (1 of 4)

▸ **Risk assessment**

■ **Which risks need to be considered?**

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- Earthquake
- Flood
- Tsunami
- Volcanic eruption
- Epidemic illness

Natural

Natural event that has catastrophic consequences

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- Internal or external attack (fraud)
- Civil disorder
- Structural collapse
- Fire
- Vandalism

Man made

Human negligence or intent that creates significant disruption

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■ **How do they affect the various elements of the value chain?**

  ■ **Are they independent for each stage or potentially impacting multiple stages**

Creating a BCM Plan – Analysis (2 of 4)

▸ **Impact assessment in case of an incident**

  ■ **Direct impacts**

Assumptions

Accumulated losses from missed transactions	
New customers/day	4.000
Average transaction amount	35$
Average time each card is used per day	0,8
Transaction fee revenue	2%

Accumulated losses from extra calls to service line	
New customers/day	4.000
Service Desk costs	1$
Average number of new customers calling 1-time to ask for card	80%

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Creating a BCM Plan – Analysis (3 of 4)

▸ **Impact assessment in case of an incident – Direct impacts**
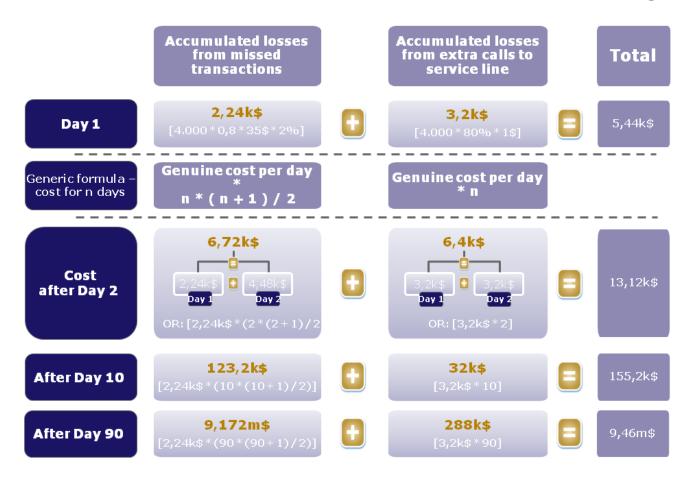
	Accumulated losses from missed transactions		Accumulated losses from extra calls to service line		Total
Day 1	**2,24k\$** [4.000 * 0,8 * 35\$ * 2%]	+	**3,2k\$** [4.000 * 80% * 1\$]	=	5,44k\$
Generic formula – cost for n days	Genuine cost per day * $n * (n+1)/2$		Genuine cost per day * n		
Cost after Day 2	**6,72k\$** 2,24k\$ (Day 1) + 4,48k\$ (Day 2) OR: [2,24k\$ * (2 * (2+1)/2]	+	**6,4k\$** 3,2k\$ (Day 1) + 3,2k\$ (Day 2) OR: [3,2k\$ * 2]	=	13,12k\$
After Day 10	**123,2k\$** [2,24k\$ * (10 * (10+1)/2)]	+	**32k\$** [3,2k\$ * 10]	=	155,2k\$
After Day 90	**9,172m\$** [2,24k\$ * (90 * (90+1)/2)]	+	**288k\$** [3,2k\$ * 90]	=	9,46m\$

Creating a BCM Plan – Analysis (4 of 4)

▸ **Impact assessment in case of an incident - Indirect impacts**

Crisis Management Fee & Expenses		Unimpacted Card Holders Calling Customer Service		Loss of Trust/ Yearly Impact of not Affected Customers Leaving		Total
500k$	+	250k$ (5m * 5% * 1$)	+	5,11m$ (5m * 0,5% * 35$ * 2% * 0,8 * 365days)	=	5.86m$

One time marketing costs	500k$

Card base	5m
% of callers	5%
Service call costs	1$

Card base	5m
% of customers leaving	0,5 %
Lost interchange fee	2%
Average txn. amount	35$
Average transaction (User/ day)	0,8

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Creating a BCM Plan – Strategy

▸ **Based on the results of the analysis phase, the BCM strategy defines the overall objectives to be achieved through BCMP**

▸ **Critical questions to be answered are:**

- ■ **Activation delay**: What are a reasonable period / the maximum time of delay before recovery measures need to be activated in order to avoid prohibitive or even irreversible damages?

- ■ **Service levels**: What are the scope and the acceptable service levels of initial recovery offerings? Are they the same across the product portfolio or does it make sense to prioritize and stage the incident response in a segmented way?

- ■ **Full recovery**: What is a realistic / desirable maximum time before the normal level of service has to be restored?

- ■ **Expense & resources**: What is an acceptable overall level of expenditure, investment and resources to be spent for BCM within the issuer's organisation and with 3rd party suppliers?

Creating a BCM Plan – Implementation (1 of 2)

▸ **Based on the strategic decisions made before, the implementational options are selected and executed.**

▸ **Potential product portfolio differentiation, e.g.**

- **Only a reduced number of products is supported and delivered to all cardholders, no matter what their individual product may be.**

- **Cardholders receive a special "emergency" product defined and available for backup use only in a BC situation.**

- **Some products are prioritized over others.**

▸ **Backup selection for every stage of the value chain**

- **In-house vs. outsourced**

- **Storage levels, hot switching vs. cold switching**

- **Links between various stages**

- **Service levels and cardholder expectations**

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Creating a BCM Plan – Implementation (2 of 2)

▸ **Testing and maintenance**

- **Definition of system update cycles**

- **Development and execution of testing regime**

▸ **Establishing BCMP as a corporate business process**

- **Defining the BCM procedures addressing the objectives of the BCM strategy**

- **Creating and controlling the process documentation and obtaining approval from the proper levels of management**

- **Identifying and signing up those members of the organisation who have to play a role in the process and educating them about their obligations**

- **Managing the invocation of the BCMP in coordination with the other BCMP players**

- **Establishing and maintaining all the necessary contracts and service level agreements with internal and external suppliers**

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Business Continuity Management – Business Model

▸ **Purpose**

  ■ **Supporting the issuers' BCM decisions and tradeoffs by providing numerical guidance on potential damages and BCM cost**

▸ **Business Model Elements**

  ■ **Potential damages**

    ■ **Tangible losses, e.g. foregone fees and transactional revenues**

    ■ **Intangible losses, e.g. negative impact on reputation and brand value**

  ■ **Cost of implementation**

    ■ **Set-up and maintenance**

    ■ **Capital expenditure**

▸ **Format**

  ■ **Excel Spreadsheet**

  ■ **Easy to use issuer input facility**

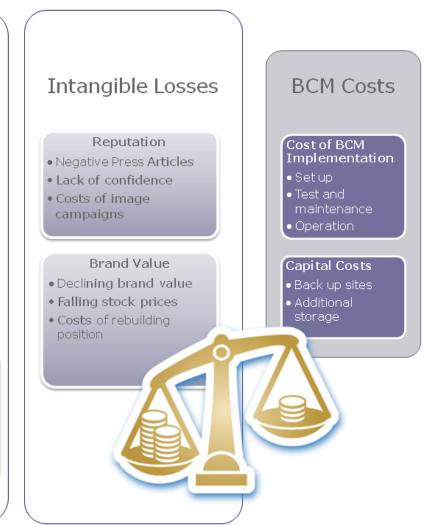# Business Continuity Management – Business Model

Tangible Losses

Loss of Revenue
- Number of lost customers (private, corporate, new, replacement customers)
- Number of lost transactions
- Average value of lost
  - customers
  - transaction fees
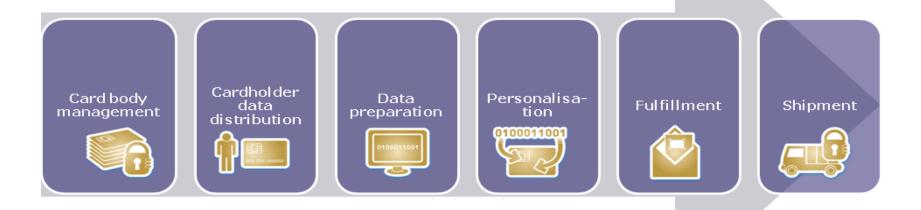 - revolving credit fees
  - annual fees

Additional Costs
- Penalties
- Customer compensation
- Customer Service
- Media and government relations
- Costs of falling back to more expensive channels

Intangible Losses

Reputation
- Negative Press Articles
- Lack of confidence
- Costs of image campaigns

Brand Value
- Declining brand value
- Falling stock prices
- Costs of rebuilding position

BCM Costs

Cost of BCM Implementation
- Set up
- Test and maintenance
- Operation

Capital Costs
- Back up sites
- Additional storage

Value Chain Considerations (1 of 4)

▸ **Detailed BCM planning requires case-by-case decisions for every element of the payment card issuance value chain**

Card body management	Cardholder data distribution	Data preparation	Personalisa-tion	Fulfillment	Shipment

▸ **At every stage the tradeoffs between cardholder expectation, service level commitments and associated set-up and operational cost need to be explicitly decided upon.**

▸ **In the following slides the crucial questions and the impacts of the answering options are documented.**

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Value Chain Considerations (2 of 4)

▶ **Card Body Management**

- Does the issuer require continued availability of <u>all</u> card bodies in the product portfolio or can operations be restricted to a subset?

- How does the issuer plan for continued availability of card bodies between card body production and card body storage?

▶ **Cardholder Data Distribution**

- Is it sufficient to fall back to e-mail transmission for a limited period of time?

- Is it acceptable to the issuer to reroute the cardholder data via the normal transmission method to a different server with a different address?

- Is it desirable for the issuer to send the cardholder data via the normal transmission method to a different server with the same address?

Value Chain Considerations (3 of 4)

▸ **Data Preparation**

- Is the issuer legally allowed to temporarily transmit cardholder data abroad?
- Should a back up site be set up and maintained in advance or only when the disaster strikes?
- Does the issuer want to be able to perform backup processing for non-standard applications on the card?
- How fast does the issuer want to revert back to the original operation?

▸ **Personalisation**

- Is the issuer legally allowed to temporarily transmit cardholder data abroad?
- Should a back up site be set up and maintained in advance or only when the disaster strikes?
- Does the issuer want to be able to perform backup processing for non-standard applications on the card?
- Does the issuer require continued availability of <u>all</u> card bodies in the product portfolio or can operations be restricted to a subset?
- Does the issuer require continued availability of <u>all</u> methods of non-chip related personalisation?
- How fast does the issuer want to revert back to the original operation?

Value Chain Considerations (4 of 4)

▸ **Fulfillment**

- Does the issuer require continued availability of customized carrier letter formats and envelopes, equipped with issuer logos and product marks for the entire portfolio, additional inserts containing legal or marketing information?

- How does the issuer plan for continued availability of fulfillment material between production and storage?

▸ **Shipment**

- Does the likelihood of an incident warrant the setup of second source distributor?

- Are service limitations such as bulk shipments to distribution centers acceptable for a period of time?

- Is it acceptable for cardholders to pick up cards at branches?

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Best Practices

▸ **Real Life Examples**

- Common objective: customers get their cards and can continue to pay electronically

- Differences are exposed regarding
  - Services levels
  - Feature mix
  - Artworks
  - Activation delays
  - Distribution options

- Scenario A: Minimal perceived impact for the cardholder

- Scenario B: Reduced service level options

Best Practices – Scenario A

▸ **The disaster case is defined as the personalisation center along with the stock of non-personalized cards is no longer available to the issuer.**

▸ **A hot-switching, fully mirrored backup environment with ample stock of card bodies for the entire card portfolio is established.**

- **A properly certified mirror site is maintained with regard to the cryptographic environment. Once the BCMP is activated, the already established and tested connections between the issuer's data center, the data preparation center and the backup personalisation center will be switched in a matter of hours.**

- **With the backup stock moved to the backup personalisation center, a fully redundant backup environment is able to support every card program in the portfolio with service levels as expected by the issuer and the cardholders.**

- **The size of the card body stock is supposed to give the issuer enough time to establish a new card body production capability before the stock is depleted.**

Best Practices – Scenario B

▸ **The service levels for all stages of the value chain are reduced while still maintaining the basic objective of providing functioning payment cards to the consumer.**

- ■ **Instead of storing all card artwork variations, only the artwork for three card programs are stored while the rest of the portfolio has been mapped to these three programs ahead of time.**

- ■ **Data center connectivity is not switched immediately but established after the incident happened.**

- ■ **The data preparation center has been updated and tested as part of a planned annual test.**

- ■ **Fulfillment will be restricted to bulk shipment to the issuer or a distribution centre that will then have to organize shipment or other means of distribution.**

BCM Conclusions

▸ **Business continuity management must be front and center for today's card issuers.**

▸ **To be truly effective, business continuity management must begin with a thorough situation and risk analysis, variables must be understood, service levels defined and programs extended out from the issuer to encompass the entire supply chain.**

▸ **A detailed cost-benefit analysis must be carried out along the value chain. Defining the level of 'acceptable' service delivery in the event of an incident is as important as understanding likely points of failure.**

▸ **The best practices and models described in this paper will deliver the consistency of approach needed to assure effective business continuity management strategies going forward.**

For more information contact us

info@smartpaymentassociation.com

www.smartpaymentassociation.com