2. Basic Patterns and Tools for Entrepreneurs

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http://st.inf.tu-dresden.de/teaching/saab

1) The Innovator's Toolbox
2) Change Patterns
3) Lean Innovation
4) Lean Canvas
5) Other Canvases
6) Innovation Processes
Literature

  - http://nbn-resolving.de/urn:nbn:de:bsz:14-qucosa-160539
2.1 The Innovator's Toolbox
The Toolbox

► Every innovator needs a toolbox for his products or services he develops
► Several important artefacts (lean models) are assembled. He/she should know them by heart.
► In the course, we will discuss these artefacts and how to mature them.
► The innovator's toolbox
  ▪ NABC Elevator Pitch
  ▪ Working with Canvases
  ▪ The Business Model Canvas
  ▪ The Value Proposition Canvas
  ▪ The Lean Canvas
  ▪ The Lean BMC
  ▪ The Personal BMC
  ▪ The Requirements Engineering Canvas
Q1: The Innovator's Toolbox

- Every innovator should have the following artefacts present and mature them over time:
  - **Elevator Pitch**
    - Need – Approach – Benefit/Cost – Competition (nABC)
  - **Pain Sheets / Pain List**
    - Clear knowledge about pains, reasons, implications, capabilities
  - **Pain Diary**
    - Update regularly
  - **Pain Classification**
    - Pain-Gain-Banana
  - **Business Model Canvas**
    - Business Model Development
  - **Value Proposition Canvas**
    - Pains
    - Gains
    - Pain Removers
    - Gain Catalysers
  - **Problem Canvas**
  - **SPIN Selling Canvas**
    - Questions for turning implicit into explicit needs
  - **Lean Canvas**
    - Mapping problems to customers
    - Thinking about competition
2.2 Change Patterns
Change Patterns and the Opportunities in the SWOT Analysis

External
- Society
  - Finding new governance rules and laws (Sarbanes-Oxley, certifications)
  - Change of government, also in other countries (Wende, Treuhand...)
- Nature
  - Times of the year
- Technology
  - New technology (innovation waves, disruptive technology,...)
- Economics
  - Commodity pattern
  - Economic cycles

Internal
- Supplier changes
- Patents expire

Strengths
- Internal attributes

Weaknesses
- Internal attributes

Opportunities
- External attributes

Threats
- External attributes

Environment

Internal attributes

Weaknesses

Opportunities
The Stanford Triple Match for Innovations

Technology (feasibility)  Business (viability)

Human Values (usability, desirability)

Innovation

http://dschool.stanford.edu/our-point-of-view/
Bud Caddell's Triple

- **What we do well**
- **What we can be paid to do**
- **What we want to do**

- Learn to monetize
- Learn to say NO
- Learn to do this better
2.2 Lean Innovation
Lean Innovation Process in this Course

- The **lean innovation process** prototypes early to get early feedback (feedback-oriented process)
- **Insight:** Business can be modeled and metamodeled

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**Lean Startup**

**Lean Innovation**

**Lean Modeling with Canvases, e.g., with Business Model Canvas**

**Selling Techniques**

**Business Models**

**Lean (Agile) Development**
The Lean Innovation (Startup) Spiral Model

- Instance of “Scientific Method” of Bacon and PDCA (Plan-Do-Check-Act)
- Plan - Build – Measure – Learn – cycle [Maurya, Ries]
- Developing “Business Model Canvases” containing “Customer Hypotheses”
The Business Model Canvas Cactus

- Growing a tree with side edges (dag cactus) out of a first version
- Assess with red-yellow-green; choose a current “champion”
- Follows the GAP problem-solution process
- Not too many canvases are kept active (small dashboard)
Business Model Analysis
with the Business Model Canvas

- **Business model development** creates business models
  - For start up and placement of new products
  - [Osterwalder/Pigneur] suggest to split the business model in 9 parts, divided by input, output, and in between

- Input (Resource) Side
  - Cost vs Profit
    - Estimate costs! Cost leadership?
    - Estimate break-even point!
    - Distinguish cash flow and profit

- Middle: Value Proposition and Pain Killing

- Output Side (Customer Side)
  - Target customer group
    - Companies? End customers? [champagne]
    - Selling directly or via distributor?
  - Channels
    - Market entry strategy
    - Segmentation of the market
Customer Modeling is a variant of business model development that creates a trustworthy, realistic model of the customer of the product, his pains, his gains, his desires, her stakeholders, ...

During customer modeling, customer hypotheses are proposed in form of BMC and validated (BMC Cactus).

The “Ask” - “Measure” - “Learning” Cycle is a variant of the Scientific Method and the PDCA.
Bridging Two Worlds in BMC

Software as a Business

The Business Model Canvas


Key Partners
- Who are our key partners?
- What are our key resources?
- What is the value of the key activities?
- What is the value of the key resources?
- What is the cost of the key activities?
- What is the cost of the key resources?

Key Activities
- What are the key activities?
- What are the key activities that create value for the customer?
- What are the key activities that create value for the business model?
- What are the key activities that create value for the key partners?

Value Propositions
- What is the value proposition?
- What is the value proposition that creates value for the customer?
- What is the value proposition that creates value for the business model?
- What is the value proposition that creates value for the key partners?

Customer Relationships
- What is the customer relationship?
- What is the customer relationship that creates value for the customer?
- What is the customer relationship that creates value for the business model?
- What is the customer relationship that creates value for the key partners?

Customer Segments
- Who are the customer segments?
- Who are the customer segments that create value for the customer?
- Who are the customer segments that create value for the business model?
- Who are the customer segments that create value for the key partners?

Channels
- How do we reach the customer?
- How do we reach the customer that creates value for the customer?
- How do we reach the customer that creates value for the business model?
- How do we reach the customer that creates value for the key partners?

Revenue Streams
- How do we generate revenue?
- How do we generate revenue that creates value for the customer?
- How do we generate revenue that creates value for the business model?
- How do we generate revenue that creates value for the key partners?

Cost Structure
- What are the cost structures?
- What are the cost structures that create value for the customer?
- What are the cost structures that create value for the business model?
- What are the cost structures that create value for the key partners?

Resources
- What are the resources?
- What are the resources that create value for the customer?
- What are the resources that create value for the business model?
- What are the resources that create value for the key partners?

Customer
- How do we engage the customer?
- How do we engage the customer that creates value for the customer?
- How do we engage the customer that creates value for the business model?
- How do we engage the customer that creates value for the key partners?
Business Model Canvas Process

- Basically from right to left

[Osterwalder-BMC]
The Model Aspect of Business Model Canvas

- BMC is based on a simple metamodel of business models
- Its instances are business models

Key Partners

Key Activities

Value Proposition (Wertangebote)

Customer Relations

Customer Segments

Key Resources

Channels

Costs

Revenues

Cost/Resources for Company

Cost-Value-Bridge

Value for Customer

[Osterwalder-BMC]
Metamodels and the BMC

- One of the central insights of BMC is that a canvas is a *model* following a *metamodel* [Osterwalder PhD]
Instruments for Filling Canvases

- Paper and Notes
- App
  - http://www.businessmodelgeneration.com/canvas
  - https://strategyzer.com/app
- Google docs
  - http://scrumology.com/how-to-create-a-business-model-canvas-in-google-docs/
- WeCan platform

A **canvas** is a form to collaboratively brainstorm a model.
Simple Process to Work with Canvases

- Finding answers to the fields of a canvas is easier, if you have defined questions before
  - Some canvases, like the BMC, state pre-defined questions. You can use
  - the “Honest Serving Men” of Kipling
  - The SWOT analysis (strengths, weaknesses, opportunities, trends)
  - The CoTIQQ analysis (cost, time, quality, quantity)
  - The BeNiSiLo analysis (better, Nicer, Simpler, Longer-lasting)

- Answers can be quite unrealistic and immature
  - Evaluate maturity of fields by
    - Asking experts
    - Check cross-constraints
    - Evaluation of metrics

Arrow diagram showing the process of finding questions, finding answers, and evaluating maturity.
Different Purposes of Canvases

- A canvas has different purposes. It is a model with a metamodel, so it inherits the benefits of the language of its metamodel.

### Bridging Worlds
- Partner – Customer (BMC)
- Problem – Customer (LC)
- Pain – Pain killer (VPC)

### Brainstorm Canvas
- Structured process for excellent elicitation
- Finding answers to the questions

### Question Canvas
- To generate questions for interviews with customers and stakeholders

### Structured Process
- Use the experiences of metamodels others have collected for you
Agile Working with a Canvas

► Every canvas is linked to a **backlog of agenda (to do) items**
  - Empty fields to be filled (Initial filling of the backlog, in filling order)
  - New questions to be answered
  - New answers to be discussed

► Backlogs are burned down in **canvas sprints (question sprint, answer sprint, valuation sprint)**
  - BMC sprint
  - LC sprint
2.3 Value Proposition Analysis
Value proposition analysis finds a real problem of the customer. It is a subprocess of Business model development.

Make sure your innovation is a **pain killer** and not just a **vitamin**.

David Ladd, venture partner at Mayfield Fund [Carlson/Wilmot]

**Pain killers** are too dangerous, you only get them on prescription – but we have a large set of **vitamins**.

[Swedish pharmacist, when Aßmann asked for Korodin Kreislauf tropfen]

[Ein Unternehmer] hat einen Spürsinn für das, was die Leute brauchen oder zu brauchen glauben. Urs Wältlerlin. Weit weg im Outback.]
Value Proposition Cycle (Hughes-Chafin)

Does the customer care?
- Pain
- Gain

Do we care?
- Approach

Can we beat the competition?
- Market analysis
- Benefit for cost

Can we do it?
- Cost and project planning


Arbeitspapier Nr. 6.
“Pain-Gain” Value Proposition Canvas [Osterwalder]

- Gains
- Pains
- Customer Jobs

- Gain Creators
- Pain Relievers
- Products and services

Download for personal use

Background:
The Value Proposition Canvas

Products & Services

Understanding the customer's problem or need is crucial in identifying the products and services that will create value. The goal is to solve the customer's pain or satisfy their gain.

Gains

Gains are the benefits that customers derive from using the product or service. They are the reasons why customers will pay for a solution. Gains can be categorized into five main areas:

- Financial value: This includes the monetary benefits that the customer will receive.
- Social value: This includes the social benefits, such as status or prestige.
- Emotional value: This includes the emotional aspects that the customer will experience.
- Physical value: This includes the tangible benefits, such as performance or functionality.
- Informational value: This includes the information that the customer will gain.

Pains

Pains are the problems or challenges that customers currently face. Understanding the pains that customers experience is crucial in identifying the value proposition.

Pain Relievers

Pain relievers are the solutions that customers are currently using to address their pains. Understanding the pain relievers that customers are currently using is crucial in identifying the value proposition.

Gain Creators

Gain creators are the solutions that customers will pursue to achieve their gains. Understanding the gain creators that customers will pursue is crucial in identifying the value proposition.

Customer Jobs

Customer jobs are the tasks that customers perform to achieve their goals. Understanding the customer jobs that customers perform is crucial in identifying the value proposition.

Value Proposition

Value propositions are unique statements that differentiate the product or service from its competitors. They are the core of the value proposition and are used to communicate the value proposition to customers.

www.businessmodelgeneration.com

Use in Conjunction with the Business Model Canvas

Customer Segment

Customer segments are groups of customers who have similar characteristics and needs. Understanding the customer segments is crucial in identifying the value proposition.

www.businessmodelalchemist.com

Copyright of Business Model Alchemist

Do they,

- Create savings that make your customer happy?
- Create an emotional connection?
- Unlock new capabilities?
- Make your customer's job or life easier?
- Provide social or emotional benefits?
- Make you money?
- Create positive social consequences that your customer desires?
- Make your customer's job or life easier?
- Create positive social consequences that your customer desires?

Which savings would make your customer happy?
- Create an emotional connection?
- Unlock new capabilities?
- Make your customer's job or life easier?
- Provide social or emotional benefits?
- Make you money?
- Create positive social consequences that your customer desires?
- Make your customer's job or life easier?
- Create positive social consequences that your customer desires?

Do something customers are looking for?
- Create an emotional connection?
- Unlock new capabilities?
- Make your customer's job or life easier?
- Provide social or emotional benefits?
- Make you money?
- Create positive social consequences that your customer desires?
- Make your customer's job or life easier?
- Create positive social consequences that your customer desires?
http://geschaeftsmodellcoach.de/assets/Bilder/_resampled/resizedimage501353-valuepropositiondesignergif.gif
VP Canvas Process

- [Osterwalder-OPC] VPA uses a canvas to map the customer pains and gains to products and services
- The VPC defines the field “value proposition” of the BMC
2.3.2 Value Proposition Analysis with nABC
NABC Analysis [Carlson-Wilmot]

- What does the customer really need?
- What is of value for her?
- What is a pain for the customer?

- Who is in the market already?
- How does our solution improve the competitor's?

- How does your company solve the needs of the customer?
- How does it create value for her?

- How efficient is the solution?
- How large is the benefit?
- How large are the costs?

http://www.oulu.fi/english/sites/default/files/content/NABC_presentation.pdf
NABC Elevator Pitch

- An **elevator pitch** is a 2-minute speech about the value proposition (problem-solution analysis) of your PhD thesis project
  - You should be able to tell it an important investor in an elevator (2 min)
- It combines a problem solving pattern such as NABC with a hook, a gripping introductory remark
  - You may use any other pattern, too
Exercise: Application

- For preparing your next application for a job,
- Analyze the future employer with NABC
  - What are his needs?
  - What is your approach?
  - What is his benefits?
  - Who are your competitors?
- Learn the answers for these questions by heart, to be able to present them in the interview!
2.4 Lean Canvas

- An important variant of the BMC for problem-solution analysis
- Combining BMC and VPC
Lean Canvas [Maurya]

Lean Canvas is adapted from The Business Model Canvas (http://www.businessmodelgeneration.com) and is licensed under the Creative Commons Attribution-Share Alike 3.0 Unported License.
Lean Canvas [Maurya] [http://leancanvas.com/]

- The Lean Canvas substitutes the Cost Subcanvas by the Problem-Solution-Key-Metrics Subcanvas
- The Lean Canvas supports Problem-Objective-Solution-analysis (POA)

<table>
<thead>
<tr>
<th>Problem .</th>
<th>Solution</th>
<th>Value Proposition</th>
<th>Unfair Advantage (hard to copy, redo, or follow)</th>
<th>Customer Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Metrics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost Structure</th>
<th>Problem-Solution Analysis</th>
<th>Problem-Value-Bridge</th>
<th>Value for Customer</th>
<th>Revenue Streams</th>
</tr>
</thead>
</table>
The Lean Canvas substitutes the Cost Subcanvas by the Problem-Solution-Key-Metrics Subcanvas.

The Lean Canvas supports Problem-Objective-Solution-analysis (POA).

The fill order is top-down outside-in.

Lean Canvas Combined with BMC (Lean Business Model Canvas, LBMC)

- The Lean Canvas and the BMC can be unified by adding the subcanvases
- The LBMC supports Problem-Objective-Solution-analysis (POA), Competition analysis, Customer analysis

Diagram:

- **Problem-Solution Analysis**
  - Problem
  - Solution
  - Key Metrics

- **Resources**
  - Key Partners
  - Key Activities
  - Key Resources

- **Value Proposition**
  - Customer Relationships
  - Channels

- **Cost Structure**
  - Ultimate Competitive Advantage
  - Unfair Advantage

- **Revenue Streams**
  - Customer Segments
  - Customers

- **Customers**
  - Problem-Solution Analysis
  - Resources
  - Value Proposition
  - Cost Structure
  - Revenue Streams

- **Competition**
  - Problem-Solution Analysis
  - Resources
  - Value Proposition
  - Cost Structure
  - Revenue Streams
2.5 Other Canvases
Change Patterns and the Opportunities in the SWOT Analysis

External

- Society
  - Finding new governance rules and laws (Sarbanes-Oxley, certifications)
  - Change of government, also in other countries (Wende, Treuhand...)
- Nature
  - Times of the year
- Technology
  - New technology (innovation waves, disruptive technology,...)
- Economics
  - Commodity pattern
  - Economic cycles

Internal

- Supplier changes
- Patents expire

Diagram:

- Internal attributes: Strengths, Threats, Weaknesses
- External attributes: Opportunities
- Environment
SWOT Change Canvas

- Derived from SWOT

![SWOT Change Canvas Diagram](image-url)

- Strengthes
- Weaknesses
- Competitive Advantage
- Opportunities
- Threats

- Invariants
- Changes

- State
- The wind of change
- Change

- Expectations

- Visions

- Competitive Advantage

- Internal
- External
Lean Change Canvas

- http://agileconsulting.blogspot.de/2012/08/lean-change-part-1-combining-kotter-and.html?m=1
- https://canvanizer.com/new/lean-change-canvas

![Lean Change Canvas](image)
## Strategic Change Canvas

**STRATEGIC CHANGE CANVAS**

<table>
<thead>
<tr>
<th>VISION: WHAT IS THE VISION FOR THIS CHANGE?</th>
<th>IMPORTANCE: WHY IS THIS CHANGE IMPORTANT TO OUR ORGANIZATION?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>SUCCESS MEASUREMENTS: HOW WILL WE MEASURE SUCCESS?</th>
<th>PROGRESS MEASUREMENTS: HOW WILL WE SHOW PROGRESS TOWARDS OUR VISION?</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>WHO AND WHAT IS AFFECTED?: WHAT PEOPLE, DEPARTMENTS AND PROCESSES NEED TO CHANGE IN ORDER TO REALIZE OUR VISION?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HOW WILL WE SUPPORT PEOPLE?: WHAT ACTIONS WILL WE (THE CHANGE SPONSORS AND CHANGE TEAM) DO TO SUPPORT PEOPLE THROUGH THE CHANGE?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHAT IS OUR PLAN?</th>
<th>-1 MONTH</th>
<th>NEXT</th>
<th>PREPARE</th>
<th>INTRODUCE</th>
<th>REVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTIONS: A LIST OF POSSIBLE EXPERIMENTS</td>
<td>EXPERIMENTS LIKELY TO BE INTRODUCED IN ABOUT A MONTH</td>
<td>THE NEXT MOST IMPORTANT CHANGES TO INTRODUCE</td>
<td>EXPERIMENTS BEING PLANNED AND VALIDATED</td>
<td>EXPERIMENTS IN PROGRESS</td>
<td>EXPERIMENTS BEING REVIEWED</td>
</tr>
</tbody>
</table>
[Oddoy] suggested a canvas to engineer requirements.
Business Model You Canvas (BMYC)

The BMYC is a canvas for your personal life and career development, inspired by the BMC. http://businessmodelyou.com/

Personal Value Proposition with the Personal BMC (BMYC)

The BMYC is for the development of your career and yourself

<table>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Channels How do they know you? How do you deliver?</td>
<td></td>
</tr>
<tr>
<td>Key Resources What you are and have</td>
<td></td>
<td></td>
<td></td>
<td>Customer Segments Whom do you help?</td>
</tr>
</tbody>
</table>

Cost Structure What do you give?

Revenue Streams What do you get?

[http://businessmodelyou.com/]
Customer Journey Canvas for Services

The Customer Journey Canvas

Pre-Service Period

Advertisement/Public Relations
How is the service proposition communicated by the service provider?

Social Media
Which pre-service information can people access through social media?

Word-of-Mouth
What do friends, colleagues and family actually communicate about the service and/or service provider?

Past Experiences
Which experiences do people have with (similar) services and/or service providers?

Service Period

Service Journey
Which touchpoints do customers experience during the service journey? Are there any critical incidents, i.e. touchpoints customers experience as especially good or bad?

Expectations
What are (potential) expectations towards the service and/or service provider?

Experiences
What are the individual experiences customers have with the service and/or service provider during the service period?

Post-Service Period

Customer Relationship Management
How does the service provider follow-up with customers?

Social Media
What do customers communicate about the service and/or service provider through social media?

Word-of-Mouth
What do customers tell their friends, colleagues and family about the service and/or service provider?

Satisfaction/Dissatisfaction
Customers individually assess the service by comparing service expectations with their personal service experiences.

Information Visibility

Software as a Business, © Prof. Uwe Aßmann

Concept and design Marc Bittner & Jakob Schindler — inspired by the Business Model Canvas — www.businessdesignthinking.com

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Customer Journey Canvas for Services (CJC)

- Service design is very important for young companies (→ chapter “Business models”)
  - A lightweight way to create business and customer relations
- CJC allows for brainstorming about all customer touchpoints, contact points with the customer during the service
  - http://thisisservicedesigntinking.com/
- http://www.servicedesigntools.org/tools/8
- On this website, you may edit several canvases, also the CJCS
  - https://canvanizer.com/choose-canvas
Some canvases are subcanvases of others.

Here is a metamodel excerpt

How would you maintain a cactus for all these canvases?
2.7 Innovation Processes
The Steps to Innovations (Bosch Thermotechnik)

- [Fit für innovation, Arbeitskreis 1. http://www.fitfuerinnovation.de/]
- Innovations need several conditions:

- Novelty
- Unique
- Relevant Customer Value Proposition
- Established In Market
Innovation Process acc. to [Scholtissek]

- Idea generation with idea generation techniques
  - Idea management mit Idea Management Systems (IMS)
  - Idea labs and workshops
  - House-of-Quality – Idea matrix crossing requirements and ideas
- Innovation planning
  - Marketing concept
  - Market analysis
  - Idea Detailed Analyse with Questions acc. to Scholtissek
- Prototyping (realizability)
- Piloting
  - Market research about customer acceptance
  - Test phase
- Commercialization
  - Introduction to market

Diagram:
- Idea Generation
- Innovation planning
- Prototyping
- Piloting
- Commercialization
- Scale
Success Factors of Innovations acc. to [Scholtissek]

1. **Stakeholder**
   - Satisfying the real need of the customer (realistic value proposition)
   - Networks and alliances

2. **Project Management**
   - Innovator established as organizational unit
   - Innovation-friendly context and environment
   - Explicit Management of Business Cases (Innovation management)

3. **Controlling**
   - Manage blocking factors and obstacles

4. **Planning**
   - Sufficient Allocation of Resources
   - Well-defined Innovation process
   - Short Time-to-Innovation

BMC VPC

Canvas cactus

Software as a Business, © Prof. Uwe Aßmann
Statistical Innovation Metrics (-KPI) acc. To [Scholtissek]

- **Metrics for Idea Generation**
  - Number of Innovation Ideas of employees
  - **Number of filled or matured canvases**
  - Number of ideas per process step

- **Metrics for efficiency of innovation (utility, investments vs cost per innovation)**
  - Turnaround of the new products in the last years
  - Rise in market share due to the new products
  - Cost reduction by process innovation
  - Cost for research and development in relation to turnaround

- **Time of Innovation Process (Time-to-Innovation)**

- **Distribution on innovation types**
  - Product, process, business model innovation, etc.
  - Evolutionary, revolutionary, disruptive
Innovation Process of Project Open4Innovation

The End

► How are BMC and VPC related?
► What is the difference of a canvas and a metamodel?
► Explain the three phases of canvas filling.
► How do you create questions for a canvas? Explain one of the instruments to get ideas.
► Why is pain important in the VPC?
► Why is change important for business?
► Why is the Lean Startup process a specific innovation process?
► Why are canvases models?
► Which canvas you would recommend for Volkswagen in its 2015 crisis?