“COCKPIT”
Visualization of KPI’s of the Austrian penal system
Outline
Visualization of KPIs of the Austrian Penal System

> Short Overview of Austrian Penal System
  – key IT applications
  – Data warehousing
> Indicator based controlling in Austria
  – History
  – Current status
> Live Demo Cockpit
> Outlook
Austrian Penal System
Overview

> Political responsibility for the Penal System in Austria is vested in the Ministry for Justice. The Austrian Prison Service is organized within the Ministry of Justice. It is headed by a Director General supported by four departments.

> The Austrian Prison Service within the Ministry of Justice is administered centrally and located in Vienna, Austria.

> There are 27 institutions in the Austrian Prison System: 15 for pre-trial detainees, 8 for convicted detainees and 4 for mentally disturbed offenders and offenders of weaning treatment.

Composition of approx. 8,500 inmates (1.8.2020)
- convicted
- pre-trial
- commitment order
- others

Further insights will be given „live“ in the cockpit
Applications developed for Austrian Penal System

IVV: integrated prison administration
IWV: integrated business management
eVM: electronic prison management
WAV: weapon management
SSV: key- and lock-server administration

Individual penitentiary applications

- 27 prisons
- approx. 3,900 public employees
- approx. 8,500 inmates
- approx. 10,000 new admissions per year
- over 3 million appointments per year
- 210,000 medical prescriptions per year
- approx. 400 work facilities for inmates
- nearly 7 million working hours per year
Integrated prison administration - IVV
2000 - present

**User / Organisation**

<table>
<thead>
<tr>
<th>Group</th>
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<tbody>
<tr>
<td>Ministry of Justice/Prison</td>
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<tr>
<td>– Prison guards</td>
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<tr>
<td>– Gate guards</td>
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<tr>
<td>– Enforcement employees</td>
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<tr>
<td>– Enforcement executives</td>
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<tr>
<td>– Operations executives</td>
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<tr>
<td>– Business executives</td>
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<tr>
<td>– Administrative staff</td>
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<tr>
<td>– Social workers</td>
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<tr>
<td>– Psychologists</td>
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<tr>
<td>– Medical professionals</td>
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<tr>
<td>Judges</td>
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<tr>
<td>Public prosecutors</td>
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<tr>
<td>BM.I</td>
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<tr>
<td>– Criminal police</td>
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<td>– Immigration police</td>
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**Interfaces**

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<td>&gt; Biometric system</td>
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<tr>
<td>&gt; Intercom</td>
</tr>
<tr>
<td>&gt; Inmates phone connection</td>
</tr>
<tr>
<td>&gt; IWV</td>
</tr>
<tr>
<td>&gt; Electr. ankle bracelet system</td>
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<tr>
<td>&gt; Kiosk system</td>
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<tr>
<td>&gt; Data Warehouse</td>
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<tr>
<td>&gt; SV Delivery service (iERV)</td>
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**Administration**

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<td>&gt; IT-Operator</td>
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<td>&gt; IT-Administration</td>
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<td>&gt; BMI/GD</td>
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**Service/Operations**

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Judiciary Data Warehouse and BI

History

2020
Cockpit goes live on 1.1.2020

2008
Indicators of Austrian penal system

2017-2019
Evaluation of existing indicators and definition of new indicators

since 2007
Yearly reports of Austrian penal system, development of reports (e.g. revision report)

2006
First statistics regarding the duration of trials

2005
First monthly reports of Austrian penal system
Judiciary Data Warehouse and BI

Original data flow

Users (e.g. prisons, ministry)

IVV → Inmate Data → Staging → Core → Datamarts → IBM Cognos → Preparation of reports using Cognos → Reports published to a Platform → Report Consumers
Automated reports of Austrian penal system

Several paginated reports are published on a monthly basis and are being made available in the intranet to a broader community.

Helpdesk has access to set of special reports to answer questions regarding statistics of the penal system (e.g. for ministry of justice, parliament, EU, science,..)
Indicator based controlling of Austrian Penal System
History of indicator based controlling
BI dates back to 2008

> First implementation as an instrument for controlling
> Definition of 16 indicators from the integrated prison administration tool „IVV“
  – Primarily focus on movement of inmates
  – Made available in four reports online through Cognos platform
  – Three separate reports for inmates under commitment order
  – Restricted access to these reports
> Reports are since then in use for yearly target achievement control meetings between prisons and the general department in the ministry
History of indicator based controlling
BI dates back to 2008

> Disadvantages
  – Lack of important data
    • hence important indicators were missing
  – no charts, only tables
  – bad usability, little interactivity
  – system hard to maintain and to extend
  – little insight in trends
    🙄
Revision of controlling mechanisms
2017 - ongoing

> Ongoing project driven by core team consisting of decision makers in the ministry, the helpdesk and technicians from BRZ
  – Meetings on a regular basis

> Results, e.g.
  – Definition of new indicators based on a broader set of data
  – Evaluation of new BI Tools
  – Establishment of interfaces to several applications (HR-data, financial data, ....)
  – Mentoring of decision makers in the prisons on the importance of controlling
  – „Cockpit“ Training courses
  – Go-Live on 1.1.2020

> Continuous Development of new indicators and report pages
Data flow for new cockpit

Datawarehouse system

HR Data
Financial Data
Inmate Data

Staging  Core  Datamarts

Preparation of Reports using Power BI

Reports published to a Platform

Report Consumers
Cockpit Data
Stored in big model

- More than hundred different fact- and dimension tables allow for deep insight into data
  - Several millions rows of data
  - Allow for filtering of data in several ways, e.g. for inmates
    - age, sex, nationality, detention-type...

fact table

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Live Demo
Outlook for 2021
Work in progress

> There is still a lot of work ahead of us, e.g.

– Definition of yearly targets in the data model for 2021
– Development of reports to easily control the target achievements
– Mobile reports
– Self service BI
  · Providing key users with interfaces to work with underlying data e.g. directly in excel
Thank you for your attention

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