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UNIVERSITY OF TWENTE.

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Juxtaposing Government and Social Media Data in Twitter Atlas: A Case of Criminal Graphics of Jakarta City

Key words: Atlas Services, Infographics, Socialmedia , 3D presentations

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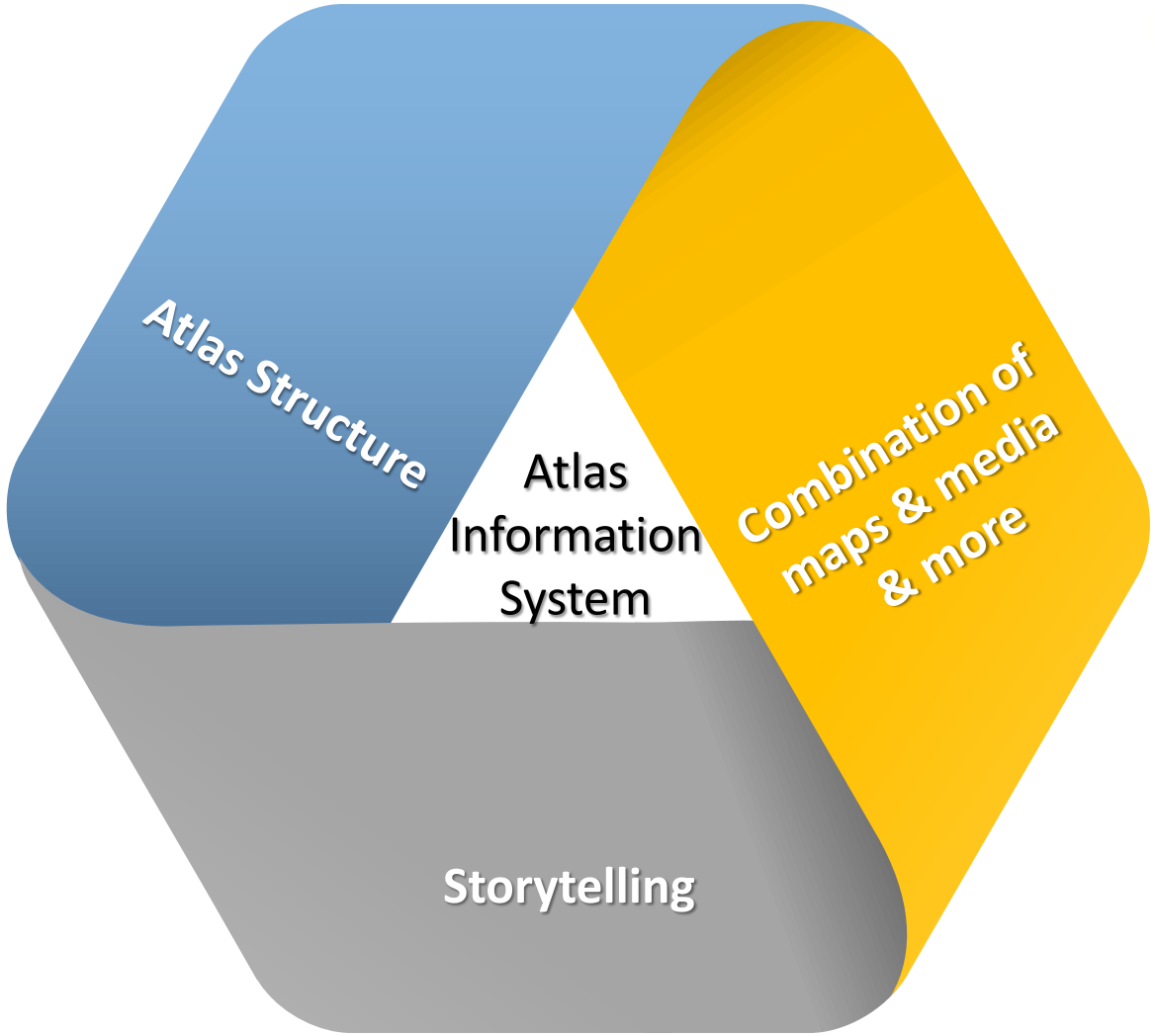
What is Atlas



Atlases are intentional combinations of maps or data sets, **structured** in such away to reach specific **objectives**

(Kraak & Ormeling, 2010, pp159)

Challenges

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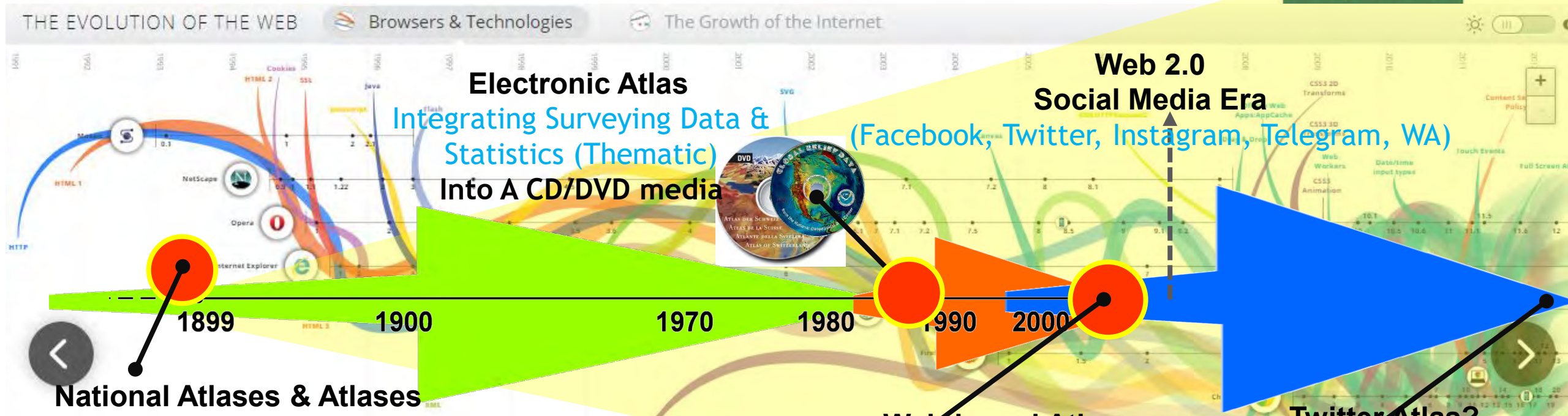
Atlas & Web Evolution



Electronic Atlas

Integrating Surveying Data & Statistics (Thematic)

Into A CD/DVD media

Web 2.0

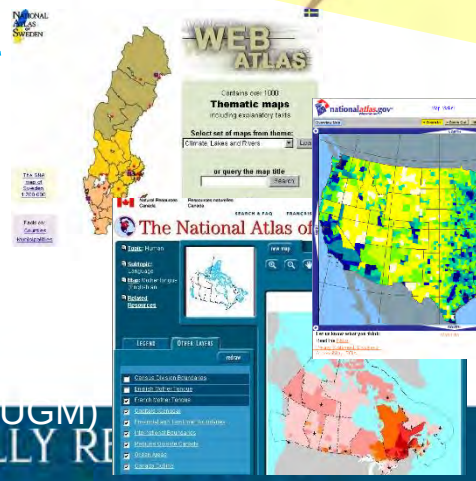
Social Media Era

(Facebook, Twitter, Instagram, Telegram, WA)

National Atlases & Atlases

Integrating Surveying Data & Statistics (Thematic)

into A book



Web-based Atlas

Integrating:

Surveying Data

Air/Satellite Images

Statistics/Thematic

-Non-geo content

into A web page

Twitter Atlas?

Atlas 4.0?

Source:

The Evoluton of Web (2015)

Atlas as the Metaphor for GDI (2007)

Work objectives

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Atlas Directory and Structure

Combining social media data with web atlas structure to provide a responsive atlas information system

Case Study: Crime Data

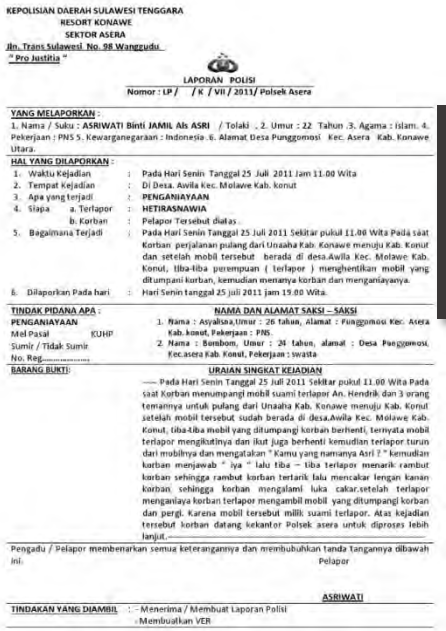
Crime events

Crowd Crime reports

change.log | output_got_1.csv

```
1  username;date;retweets;favorites;text;geo;mentions;hashtags;id;permalink
2  sinta_mimi;2014-01-31 06:36;0;0;"Pagi pagi udah dibikin kesel... rok kerja n clana le
3  hannysuwindari;2014-01-31 05:10;0;0;"Asemm " @KhamalMp : malang? gpp drpd situ maling
4  DimasAdriansyah;2014-01-31 02:22;0;0;"Mampus maling samping rumah ketauan.";;;;"42897
5  nurafriansyah1;2014-01-31 01:45;0;0;"Gile gue keluar komple gini hari udah kaya malin
6  IskandarrAhmadi;2014-01-31 01:45;0;0;"Maling .. Maling ....!! Ditinggal sebentar, sep
7  AriesNurwulan;2014-01-31 01:36;0;0;"Celana dalam"@TanyaEssay: Udin dikeroyok masyarak
8  videvidevi;2014-01-31 00:42;0;0;"HEEMM(=| tidur lo layRT @Fileren : Ngalong mah kerja
9  rukifebriana;2014-01-31 00:06;0;0;"Begadang ah, kali aja maling adalagi pingin gw bak
10 YolhandaIP;2014-01-30 22:53;0;0;"Maling anjing ! Kabel gardu komplek malah dicolong ,
11 ucimayasari;2014-01-30 22:50;0;0;"Ini kosan serem amat, antara syaiton atau maling .
12 ritantr;2014-01-30 22:38;0;0;"Punya ade demen banget maling boneka kakaknya :" untung
13 WahyuAdiP_;2014-01-30 22:22;0;0;"@linaafidah wah belum berhasil gue jadi maling hati,
14 vienzazaneta;2014-01-30 22:15;0;0;"@NugrahRahayu tau sebel gue ada maling najis bange
15 Bees_bees_;2014-01-30 21:51;0;0;"Ini bunsasi goblok Modal kalung bergantungan cincin
16 imamwhyudi;2014-01-30 21:49;0;0;"Udah ketemu maling motor lu ? " @ekaasetiawati : Nge
17 WahyuAdiP_;2014-01-30 21:38;0;0;"Maling apaan gue?? - - @linaafidah: WahyuAdiP_ yeee
18 vienzazanet
19 iikhikmh;20
20 prnmaratih;
21 wisnusetiaw
22 faturariab;
```

Username : jakarta_terkini,
date and time: 17/10/2018 04:30:00,
text: Maling motor Terekam CCTV di Masjid Jami'e Daarul Hasan Jl siaga II Pejaten Barat Pasar Minggu Saat Sedang Salat Subuh,
Kategori: pencurian,
Alamat: Jl. Siaga II Pejaten Bcar, Ps. Minggu,
koordinat: 106.8440018,-6.2754998



KEPOLISIAN DAERAH SULAWESI TENGGARA
RESORT KONAWE
SEKTOR ASERA
Jln. Trans Sulawesi No. 98 Wanggudu
" Pro Justitia "

LAPORAN POLISI
Nomor : LP / / K / VII / 2011/ Polsek Asera

YANG MELAPORKAN :
1. Nama / Suku : ASRIWATI Binti JAMIL Als ASRI / Tolaki . 2. Umur : 22 Tahun .3. Agama : Islam. 4. Pekerjaan : PNS 5. Kewarganegaraan : Indonesia .6. Alamat Desa Punggomosi Kec. Asera Kab. Konawe Utara.

HAL YANG DILAPORKAN :
1. Waktu Kejadian : Pada Hari Senin Tanggal 25 Juli 2011 Jam 11.00 Wita
2. Tempat Kejadian : Di Desa. Awila Kec. Molawe Kab. konut
3. Apa yang terjadi : PENGANIAYAAN
4. Siapa a. Terlapor : HETIRASNAWIA
b. Korban : Pelapor Tersebut diatas .
5. Bagaimana Terjadi : Pada Hari Senin Tanggal 25 Juli 2011 Sekitar pukul 11.00 Wita Pada saat Korban perjalanan pulang dari Unaaha Kab. Konawe menuju Kab. Konut dan setelah mobil tersebut berada di desa.Awila Kec. Molawe Kab. Konut, tiba-tiba perempuan (terlapor) menghentikan mobil yang ditumpani korban, kemudian menanya korban dan menganiayanya.
6. Dilaporkan Pada hari : Hari Senin tanggal 25 juli 2011 jam 19.00 Wita.

TINDAK PIDANA APA : PENGANIAYAAN
Mel Pasal KUHP
Sumir / Tidak Sumir
No. Reg.....

NAMA DAN ALAMAT SAKSI – SAKSI
1. Nama : Asyalisa,Umur : 26 tahun, Alamat : Punggomosi Kec. Asera Kab.konut, Pekerjaan : PNS
2. Nama : Bombom, Umur : 24 tahun, alamat : Desa Punggomosi, Kec.asera Kab. Konut, Pekerjaan : swasta

BARANG BUKTI:

URAIAN SINGKAT KEJADIAN
—— Pada Hari Senin Tanggal 25 Juli 2011 Sekitar pukul 11.00 Wita Pada saat Korban menumpangi mobil suami terlapor An. Hendrik dan 3 orang temannya untuk pulang dari Unaaha Kab. Konawe menuju Kab. Konut setelah mobil tersebut sudah berada di desa.Awila Kec. Molawe Kab. Konut, tiba-tiba mobil yang ditumpangi korban berhenti, ternyata mobil terlapor mengikutinya dan ikut juga berhenti kemudian terlapor turun dari mobilnya dan mengatakan " Kamu yang namanya Asri ? " kemudian korban menjawab " iya " lalu tiba – tiba terlapor menarik rambut korban sehingga rambut korban tertarik lalu mencakar lengan kanan korban sehingga korban mengalami luka cakar,setelah terlapor menganiaya korban terlapor mengambil mobil yang ditumpangi korban dan pergi. Karena mobil tersebut milik suami terlapor. Atas kejadian tersebut korban datang kekantor Polsek asera untuk diproses lebih lanjut.——

Pengadu / Pelapor membenarkan semua keterangannya dan membubuhkan tanda tangannya dibawah ini.
Pelapor

ASRIWATI

TINDAKAN YANG DIAMBIL : - Menerima / Membuat Laporan Polisi
- Membuatkan VER

Official Crime Reports through Police/Justice Institutions

Additional Data:
- Crime Events, crime clocks etc.
- Statistics
- Other Thematic Data

Data Visualisation

Social media collection

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1
- Python installation to run the GetOldTweets-python program script

2
- Identify search keywords, such as “pencurian", “maling", “tawuran" etc.

3
- Compile queries and search parameters. Parameters include the amount of data, date range, keywords, and location description.

4
- Streaming and downloading data through the command prompt. Data obtained in JSON, CSV, etc.

The collection for crowd data used the python program GetOldTweets-python by **Jefferson-Henrique** and the Windows command prompt.

Other alternatives include: the rapidminer, crimson hexagon, facilitated as the twitter API.

Data preparation

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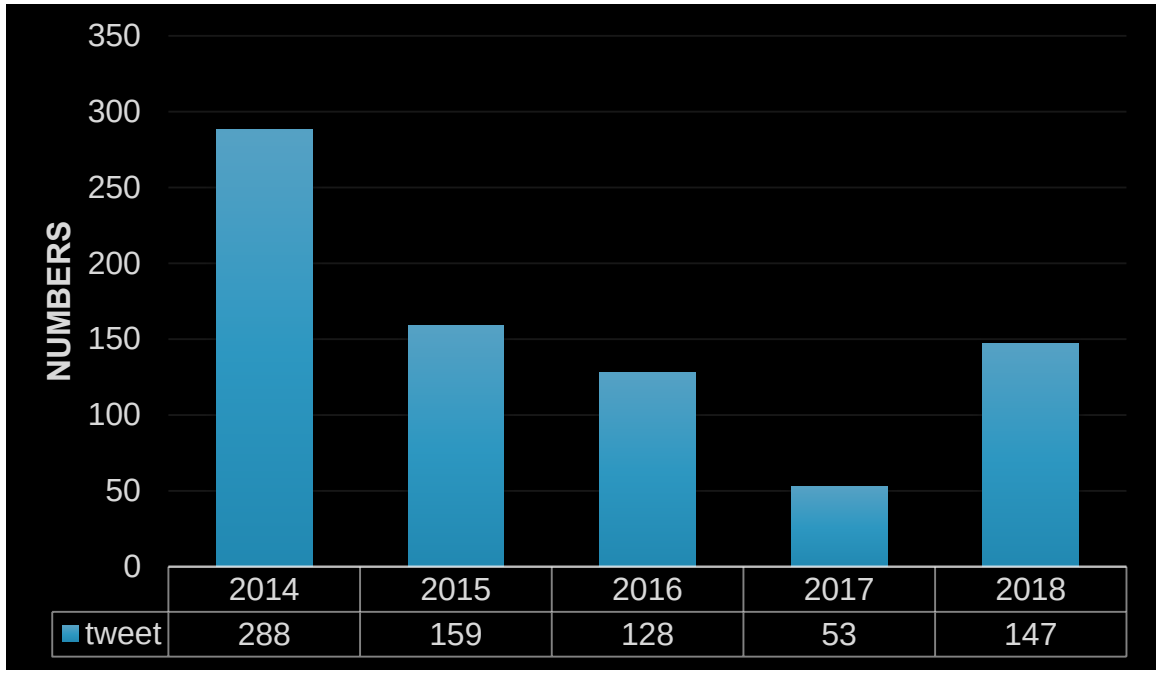
Filtering and cleaning redundant data

Semantic checking on social media content relevant to criminal events.

Verfiy geotag content for each record.

Geocode data based on position or address information

Twitter Data Visualization With Tableau and Kepler GL



The amount of data relevant to the incidence of crime in 2014 to 2018

Check the suitability of the data using the Microsoft Excel program and CartoDB platform for geocoding.

Twitter Data Vis. w/ Tableau

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Criminal data (xls, csv), population data (shapefile)

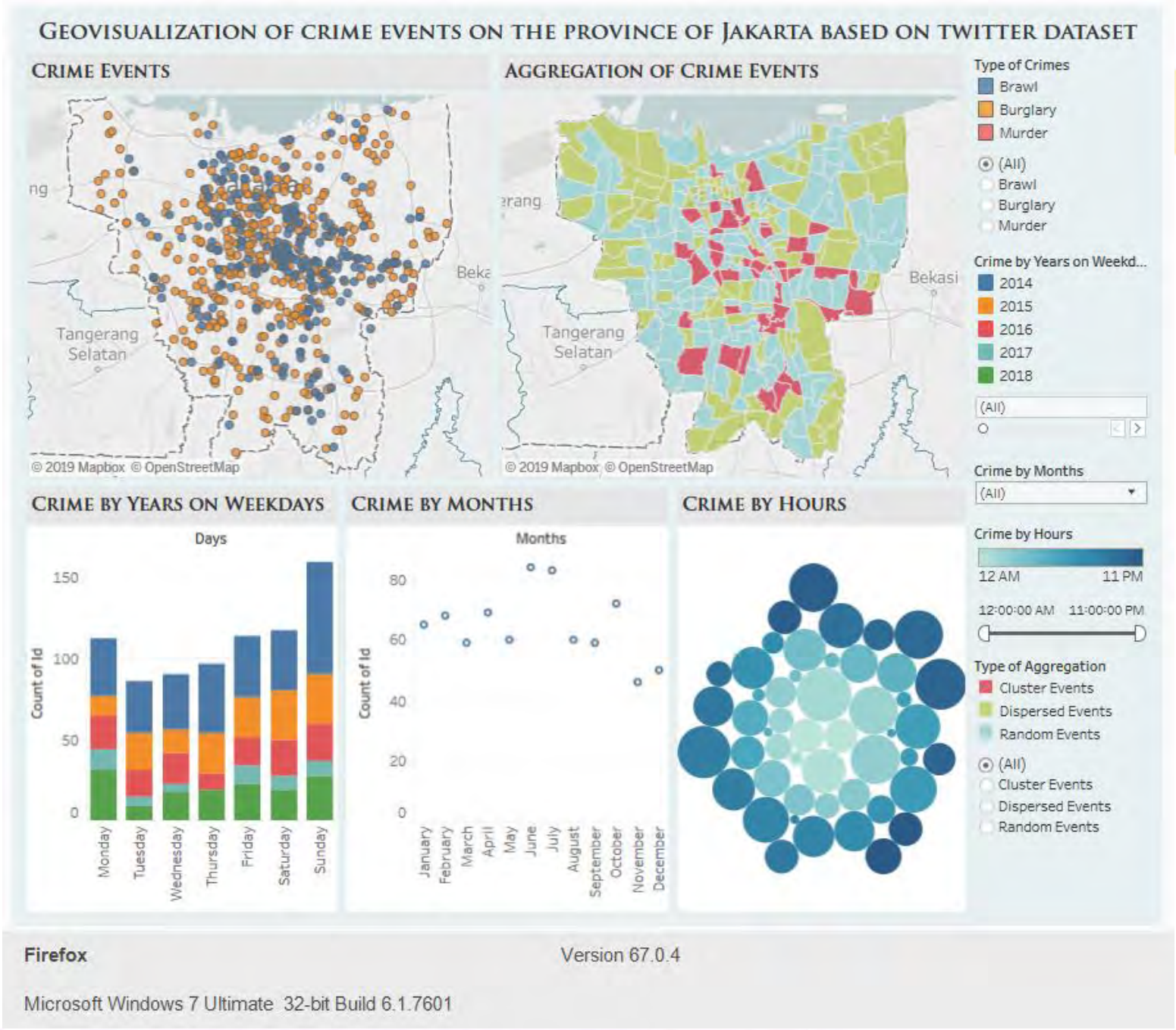
A sheet that utilizes a single visual display (maps/graphs)

Data definition: data filtering and interaction

Combining sheets into a dashboard that presents all visual displays into a single page

Public upload through a tableau server

Results: Data Visualization



on Tableau Desktop/Web

https://public.tableau.com/profile/muhammad.gunawan#!/vizhome/GeovisualizationofCrimeEvents/GeovisualizationofCrimeEventsonProvinceofJakarta

video

Results: 3D Visualization of Crowd Crime Data

On Kepler GL

https://geoinsight.ugm.ac.id/jakartacrime/

[video]

Atlas Directory and Structure

Work in Progress

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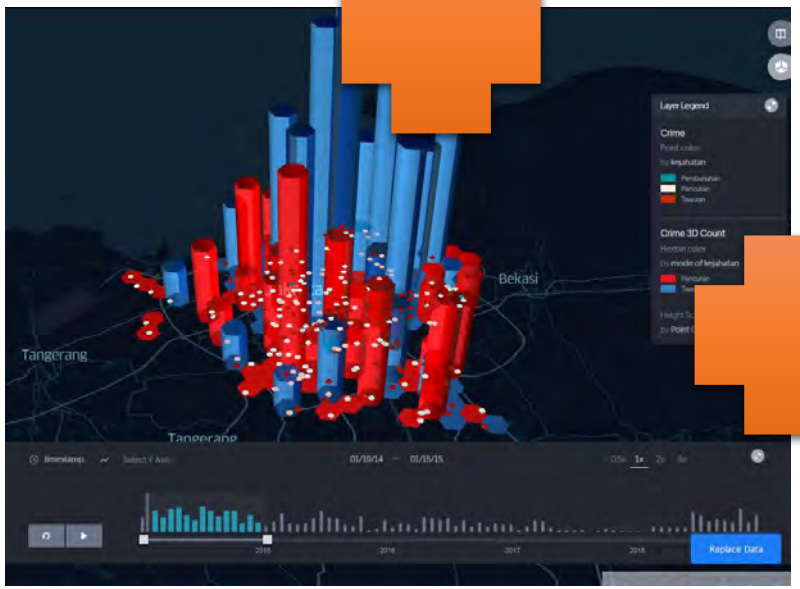
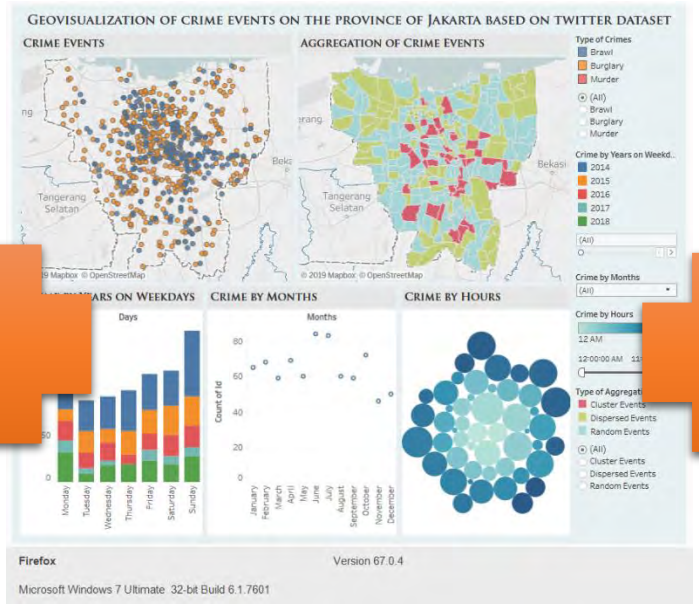
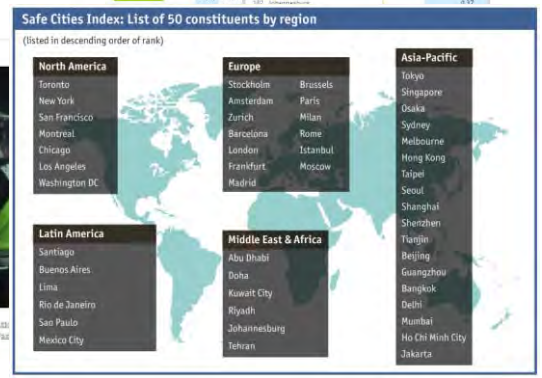


3D Attribute Filtering + Visualization

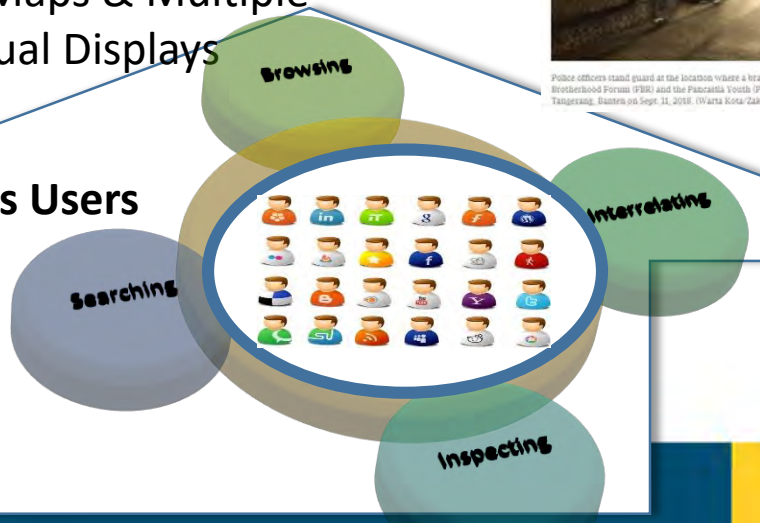


Linked Maps & Multiple Visual Displays



News, MultiMedia, Reports, …

Atlas Users



Discussion – Work in Progress/identified Needs

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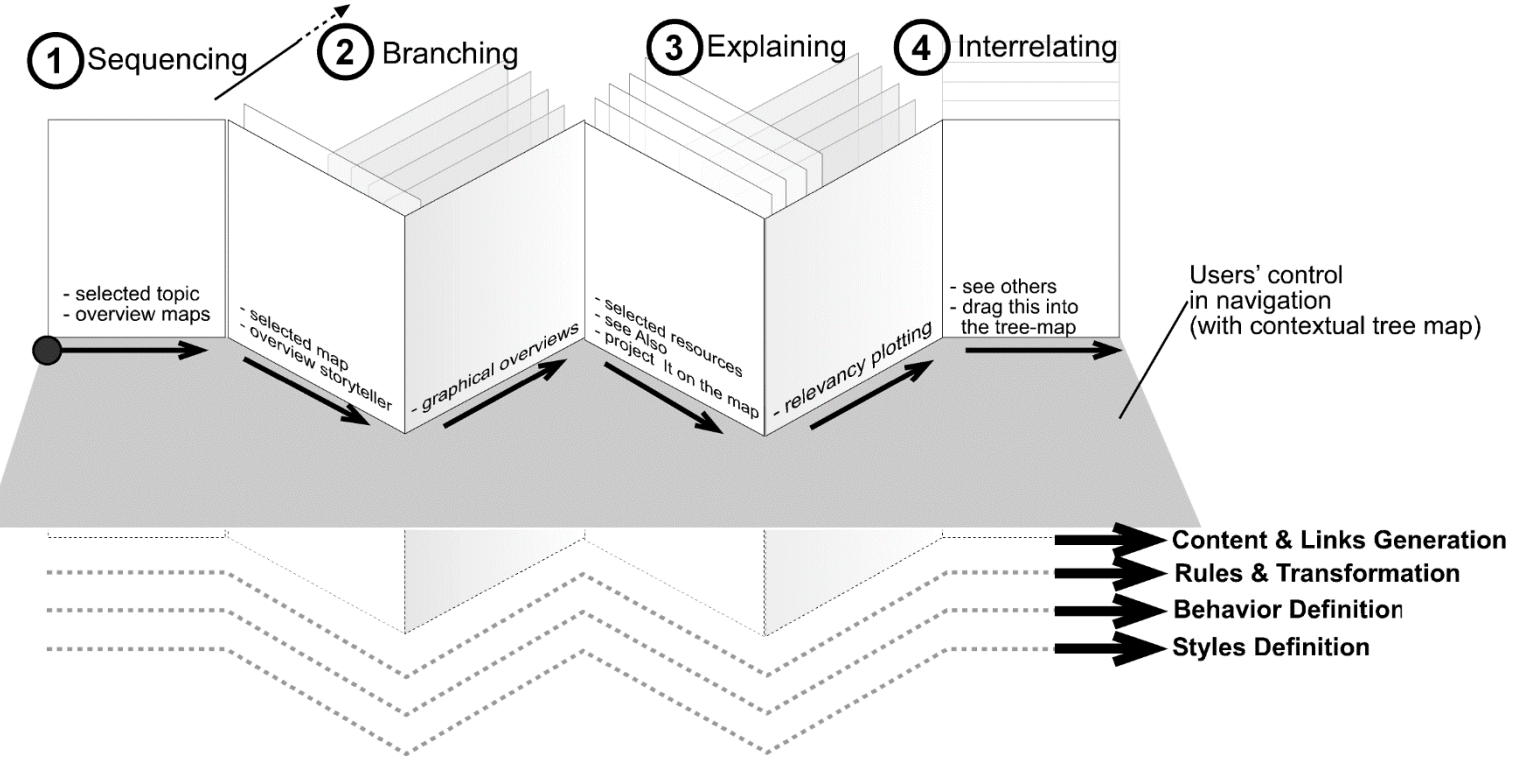
The structure of Atlas Information System should be *self-adaptive*, *collaborative* and *flexible*, **adapting to user context and social media's trending topics** → AI support?

The new structure of Atlas Information System should also consider *self-automation* of story lines in the atlas navigation, **adapting to user context and social media's trending topics** → AI support?

Atlas 4.0

(*Self-Adaptive & Self-Automation in Structure & user Navigation*)
AI, IoT, big data analysis and cloud computing, to enable atlas navigation and uses to be more efficient for layman and expert

Storytelling Atlas



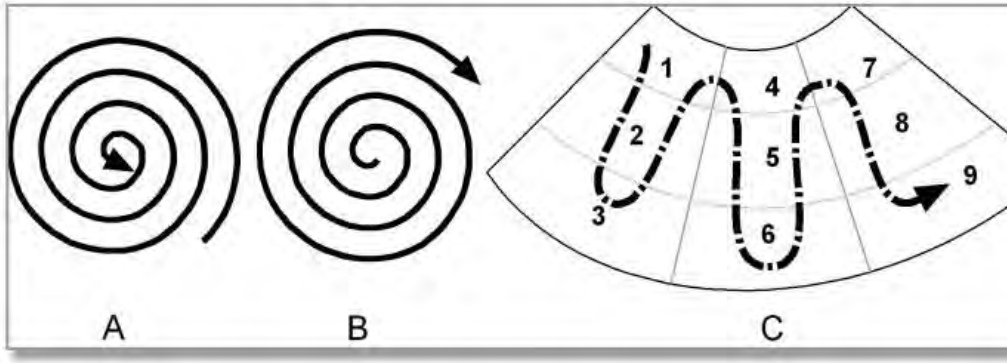


Figure 5.1. Some types of narrative structures in the atlases: (A) centripetal (B) centrifugal (C) r
linear interrupted model (source: (Ormeling 1997b))

https://atlastanahjawi.github.io/Atlas-Babad-Tanah-Jawi/peta.html

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LOCALLY ROOTED, GLOBALLY RESPECTED