TRAFFIC & TRANSIT DASHBOARD

Digitizing Taxonomy Framework

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Drawing from both Ontology & Taxonomy studies in iCity, the Dashboard incorporates elements that produces the most viable visualization recommendation for applications hosted within the platform.
WHY DASHBOARDS?

Engagement
Allows for Civic Engagement in the context of the City and its many affordances.

Statistics
The City stats creates rationale as well as proves plans for functional urban planning & management.

Planning
Urban Planning based on insights that are crowd-sourced from residents of the City.
DASHBOARD TYPES

Strategic
Achieve Strategic Goals

Tactical
Measure Progress

Operational
Monitor & Analyze Activities
DESIGN PRINCIPLES

Multi-Layered & User-Centric

Engage different User Groups using the Taxonomy framework with interactions that suit their engagement goals.

Translate to Visual

Customized Visual Identity that effectively translates Traffic & Transit concepts.
TAXONOMY FRAMEWORK
COMPARA: an intuitive interactive and searchable index that visualizes the attributes of software from a wide-range of applications and technologies.

VIZLAND: aspires to map a multitude of libraries that define data visualization types, their functions, their representational form, shapes, analytic capabilities, and descriptions, and making them query-able through a web interface.
While COMPARA derives intelligence on toolsets and software that are mapped to their respective User Group and Domain specifications, VIZLAND (the VisualIZation LANDscape) provides the optimum representation techniques that are most suited for a particular use case.
USE CASE – Traffic Operator

Context for User Engagement

Users
- Researcher
- Hardware/Software vendor
- Planner
- Operator
- Decision-maker/proponent
- Politician
- Real-estate developer
- Advocate
- City staff
- Surveyor
- Statistician
- Engineer
- Business user
- Citizen/resident
- Home-owner
- Tenant
- Guest/tourist
- Driver
- Pedestrian
- Cyclist

Engagements
- Decide (Deriving decisions)
- Synthesize (Testing hypothesis)
- Analyze (Finding Trends)
- Author (Adding content)
- Involve (Interacting)
- Expose (viewing)

Tasks
- share, distribute, publish
- derive, simulate
- explore, compare, encode, infer, survey, etc.
- comment, query, upload
- navigation, way finding, search, locate, games, etc.
- information display

(iHigh Level Engagements)

Feedback

Context for Interactive Controls in Visualizations

Data Type

<table>
<thead>
<tr>
<th>Abstract (a) / Spatial (s)</th>
<th>Input (i) / Output (o)</th>
</tr>
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<tbody>
<tr>
<td>a&lt;---&gt;s</td>
<td>i&lt;---&gt;o</td>
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<table>
<thead>
<tr>
<th>Data (Da/Ds)</th>
<th>Visual (Va/Vs)</th>
<th>Navigation (Na/Ns)</th>
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Representation Intent
- Depict, Differentiate, Identify, Show outliers, Compare
- Select, Explore, Reconfigure, Encode, Elaborate, Filter

Interaction Intent
- Connect, Simulation, Authoring, Modelling

Representation Technique
- Charts, Graphs, Networks, Treemaps, Parallel Coordinates
- Selection, Brushing, Dynamic query, Pan/Zoom

(iHigh Level)

(iLow Level Engagements)

Dashboard
### iTSoS Dashboard

#### Presets
- User Type
- Use Domains
- Date Range

#### Social Media
- @TrueNorth18
- @itchepts
- @TTCNotices
- @TorontoCommns
- @blogTO
- @torontolife
- #tlo

#### iTSoS Dashboard Overview

### Use Domains
- Traffic
- Transit
- Roadways
- Design
- Cartography
- Operations
- Urban Design
- Planning
- Policy
- Regulation
- Land Use
- Services
- Maintenance Planning

#### Users

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#### Context for User Engagement
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- Author (Adding content)
- Involve (Interacting)
- Expose (viewing)

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**@CP24**
Music video that takes aim at TTC being investigated by police [https://www.cp24.com/news/music-video-that-takes-aim-at-ttc-being-investigated-by-police-1.3950474 ...]

**@TTCnotices**
We're here to help from 7am-10pm! Tweet questions, comments, complaints and compliments.
Date Range further specifies data to be filtered.
Applications: Preset views of datasets derived from present Use case scenario.

Use Case Scenario: A combination of User Type, Use Domain & Date Range (selected above) along with a range of Engagement Goals & Tasks, based on priority.
Preset views make use of the taxonomy framework (VIZLAND component) to choose the represent technique for a given dataset.
Scope to interact with additional data, based on this particular use case scenario’s engagement & interaction Intent.
DESIGN CONSIDERATIONS
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Visual Language & Identity
Technology & Platforms
Interaction Mechanics
Usability & Accessibility
INPUT:
USER SPECIFICATION

There are many ways to collect a User’s intent to Represent & Interact.

Explicit collection of User Types at start of session.
Allowing users to specify their level of engagement along with User settings (user type & use domains).
LIVE WALK-THROUGH
Questions ?
Find out more about research at OCAD U at:
http://www.ocadu.ca/research
Acknowledgements
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