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# *Mapping Open Data in Armenia*

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## Introduction

The accumulated and released open data of many state institutions make up quite large volumes in Armenia today. There are already a few vivid examples when the use of open data has had a positive effect.

A number of databases have large potential for anti-corruption and civic journalistic investigations; for example, "[Purchases made by one person](#)<sup>1</sup>", "[SNCO Financing](#)<sup>2</sup>", "[High-ranking officials' declarations](#)<sup>3</sup>". These are examples when databases allow a researcher to carry out independent research work.

However, it's also important for the data to be subjected to automated processing as much as possible, as well as presented visually. Thus, for example, the Swedish government

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<sup>1</sup> Purchases made by one person, <https://www.e-gov.am/transparent/>

<sup>2</sup> SNCO Financing, <https://www.e-gov.am/poak/>

<sup>3</sup> High-ranking officials' declarations, <http://www.ethics.am/en/>

[provides a special API](#)<sup>4</sup> to receive and process statistical data in an automated fashion, while the US government provides a [separate large tool](#)<sup>5</sup> through which the visualization of open data is made possible.

## Using Open Data for Public Good

In the case of Armenia, there is one publicly-known data visualization tool: the [interactive budget](#),<sup>6</sup> which doesn't provide the user with many opportunities for modifications.

As for the opportunity to process data, Armenia has not yet made much progress. The National Statistical Service [provides databases](#) with very minimalistic tools<sup>7</sup>. Apart from this, there are an additional two platforms for processing statistical data: [Armstatbank](#)<sup>8</sup> and [Armdevinfo](#)<sup>9</sup>. Both are quite difficult and inconvenient to work with, and not technologically up-to-date.

On the other hand, there are specific cases where state data are provided in a much more accessible manner, but only one they have already been processed internally. The [official databases on taxes](#)<sup>10</sup> and the [Harkatu](#)<sup>11</sup> ["taxpayer"] platform created by a private company to develop them are examples of this.

There is, however, one example that has been far more successful: currency exchange rates. [Rate.am](#)<sup>12</sup> gathers in a single place the currency exchange rates declared by all

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<sup>4</sup> API for the Statistical Database Listen, [http://www.scb.se/en\\_/About-us/Open-data-API/API-for-the-Statistical-Database-/](http://www.scb.se/en_/About-us/Open-data-API/API-for-the-Statistical-Database-/)

<sup>5</sup> Data USA <http://datausa.io/>

<sup>6</sup> Interactive budget <https://www.e-gov.am/interactive-budget/>

<sup>7</sup> Statistical data bases <http://armstat.am/en/?nid=246>

<sup>8</sup> Armstatbank <http://armstatbank.am/>

<sup>9</sup> Armdevinfo <http://www.armdevinfo.am/>

<sup>10</sup> TAXPAYER INFORMATION LISTINGS <http://taxservice.am/Content.aspx?itn=TILists>

<sup>11</sup> <http://harkatu.am/>

<sup>12</sup> <http://rate.am/>

banks in Armenia. This effected the entire market, bringing currency exchange rates around the country to approximately the same level.

## Challenges of accessing Open Data: content and format

In open data, several components are immediately important. Data must be:

- *Accessible*
- *Complete*
- *Available through archives*
- *In the same format*
- *In a format ready to be developed*

But in Armenia's case, problems arise connected to accessing the archives. After websites are updated and modernized, there are instances when the archives disappear. Thus, for example, it's no longer possible to find information connected to previous administrations on the [Armenian Presidential website](#).<sup>13</sup>

On the uniformity of data provision, the Government on the Republic of Armenia passed a decree "[On approval of the minimum requirements for the official websites of state bodies online](#)" [AM]<sup>14</sup>. According to this decision, government websites must adhere to general norms. However, in reality government web resources are too diverse, confusing and in some cases have illogical and unnecessarily complicated structure which creates difficulties for users.

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<sup>13</sup> <http://president.am/>

<sup>14</sup> "On approval of the minimum requirements for the official websites of state bodies online" [Armenian] <http://www.arlis.am/DocumentView.aspx?DocID=88785>

There are also different approaches on providing the data. According to paragraph 5 of the aforementioned decision, information posted on an official website must be complete and free of charge. The matter of completeness can always be debatable.

The [Electronic Register site](#)<sup>15</sup>, for instance, requires a payment of 3,000 dram [about \$6 USD] for complete information on LLCs for each inquiry. That is to say, in this case, the data is viewed not from the perspective of freedom of information, but as a provided service.

The strong diversity of the ways of providing open databases and their being decentralized today is an obstacle for analyzing and processing data, which complicates applied approaches.

Current open data databases in Armenia, on one hand, provide quite a lot of information, but, on the other hand, the information is provided without a specific format, a clear form. The way information is provided changes from site to site. On one site, it's simply in html format; in another, it's in .pdf, .doc, or .xls format.

There are also databases that provide data only through search. There isn't a common approach on how and in what format the information may be published. The legislative requirement, in fact, is being met – the data is being published; however, working with the data becomes difficult.

One can come across data that is already outdated or inaccurate or is technically not available on the site. Access data becomes difficult not only for a specific exploration — in many cases, automated work with the data becomes almost impossible.

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<sup>15</sup> Electronic Register <https://www.e-register.am/en/>

## Challenges in encouraging third party use: formats and copyright

The information released by state agencies, when adapted by a third party, can provide the grounds for numerous programs to improve public life: for example, systematic and automatically processed information of the education system, transportation, environment, agriculture, and other sectors. But to find such solutions, the information must:

*always be recent, reviewed, precise;*

*be in a machine-readable format; for example, XML, CSV, and so on; and*

*be provided in a few different formats.*

Additionally, special API (application programming interface – used to support computer programming), which is still neglected in Armenia today, is important in working with information today.

Numerous other questions arise regarding the presented data. For example, the approach to ownership is quite inaccessible. The copyright symbol and the corresponding text "© All rights reserved" can be found on all the government websites (only on the president's official website is the [Creative Commons 3.0 license](https://creativecommons.org/licenses/by-nd/3.0/)<sup>16</sup> also posted, which implies that the content is more free to use. Though, in this case, it's unclear why the 3.0 version was selected).

This approach leads to the restriction of data processing and republishing by third users. On the other hand, the vast majority of the information posted on government websites — the news, databases, documents — are generally not subject to copyright. And those few pieces that might be subject to copyright (for example, photos and videos) were

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<sup>16</sup> <https://creativecommons.org/licenses/by-nd/3.0/>

created with funds from the state budget, and copyright restrictions on these run contrary to the public interest.

It's understandable that the copyright symbol is automatically placed on government websites, imitating the overall approach online. But the uncoordinated approach to such issues provides unscrupulous officials with the opportunity for abuse when working with public and government information.

## Opportunities for the development of Open Data in Armenia

Open Data in Armenia will only be developed through a strategy to work with the data at the governmental level. The recent sporadic and spontaneous data processing will not let to reach new levels.

Recently in health, education, agriculture and other fields, there has been an increase in possibilities to create social impact, if only the data of the government was processed and analysed. Data processing can be accomplished either by the state, the private sector or civil society. However, the state could also benefit from data created by private companies, e.g. taxi companies can provide data for reforming traffic in the cities of Armenia.

## List of open databases in Armenia<sup>17</sup>

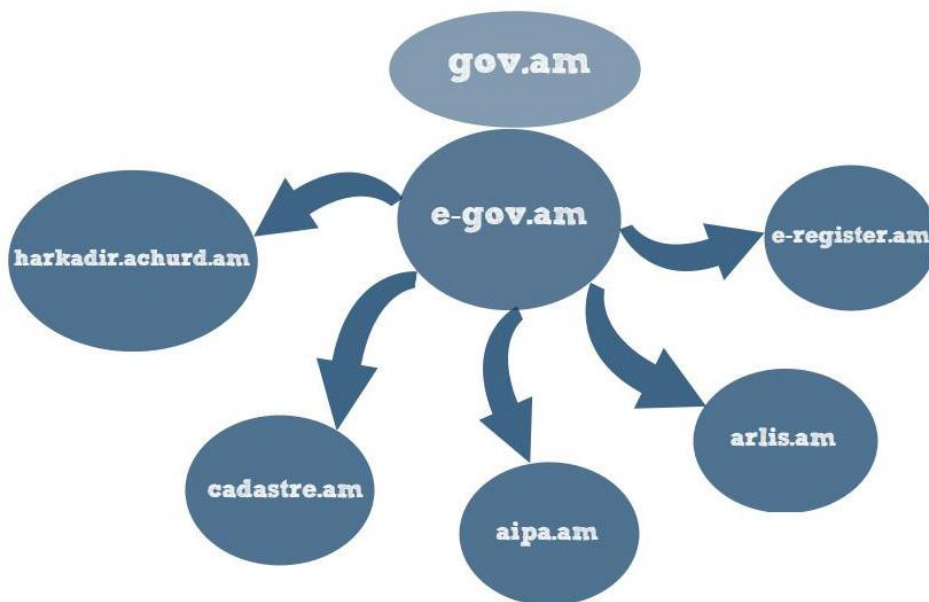
The following graphics contain Armenia's different open datasets. They contain the type of data and possibilities of their use. There are two big clusters of sites: Regional governments and Diplomatic Missions of Armenia  
**(you can find clusters here at the bottom of list of all available state databases of Armenia <https://goo.gl/lpbNXQ> )**

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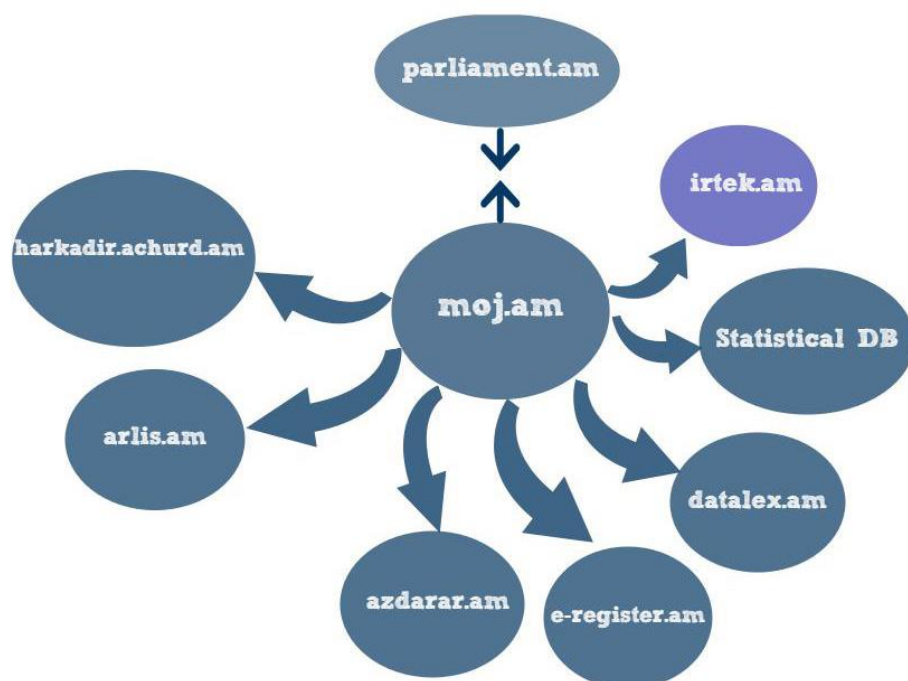
<sup>17</sup><https://docs.google.com/document/d/1OobeCsOySBkVP8r-ily5EJkytG8pGwHsmp6ii9w5zMo/pub>

There are several clusters of databases:

### 1. E-government Databases

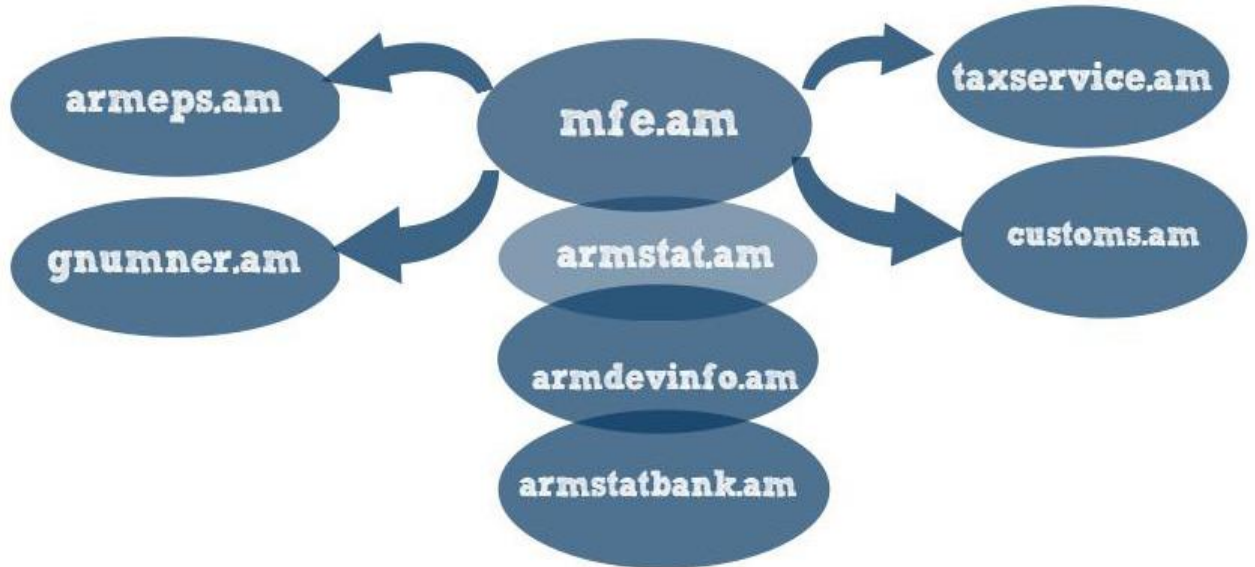


### 2. Ministry of Justice and legislative databases

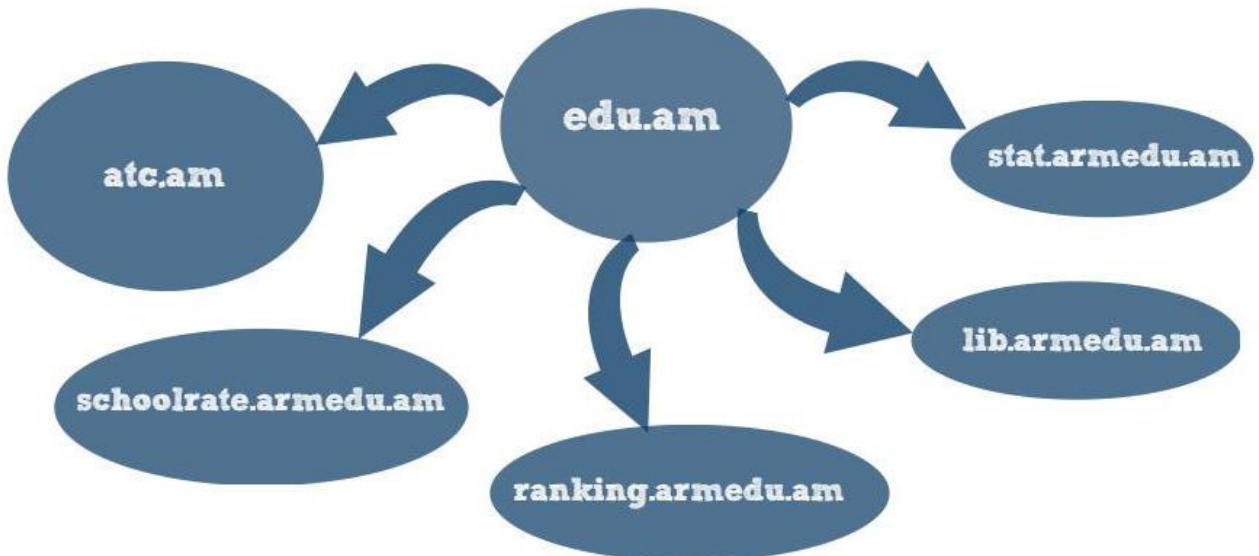




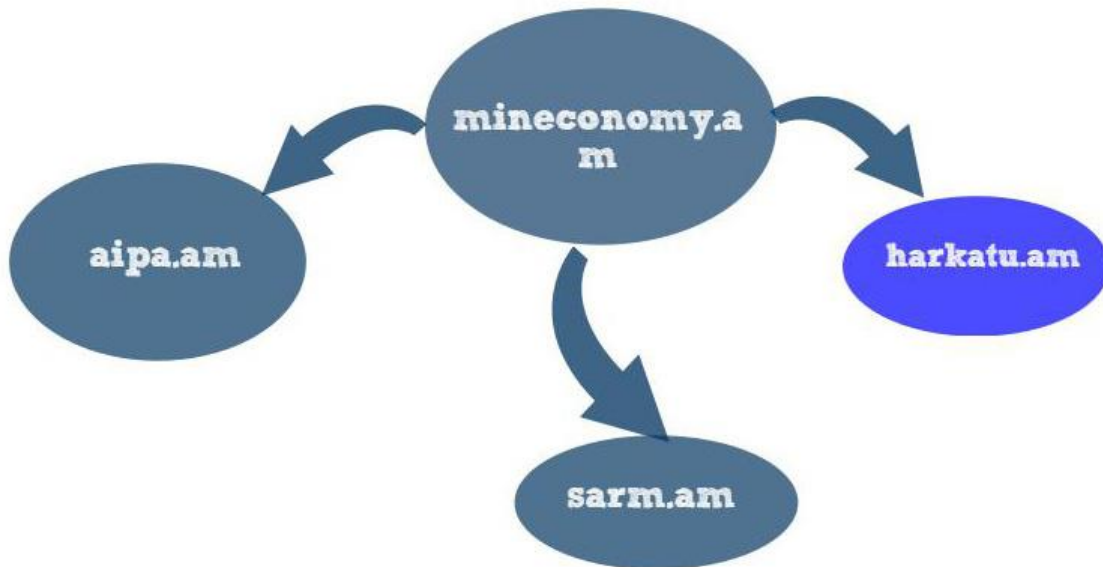
### 3. Financial Databases



### 4. Educational Databases



## 5. Economy Databases



## 6. Central Bank Databases

