



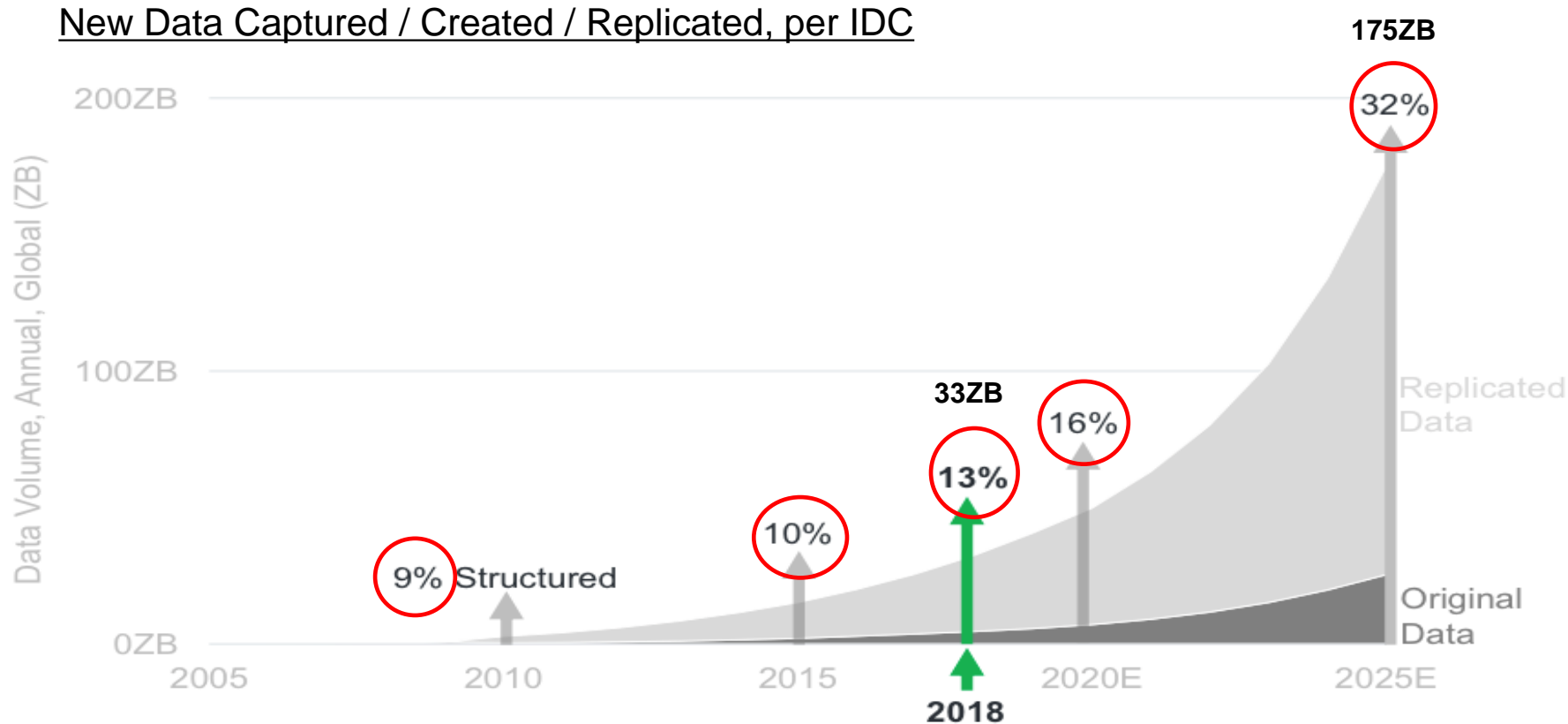
Artificial Intelligence Tools *powered by WIPO*

IP Information Roundtable
Monday, October 21, 2019

Today's Agenda on AI Tools *powered by WIPO*

1. Why is Artificial Intelligence (AI) so important in the new economy?
2. How WIPO works with Artificial Intelligence (AI)
3. Use of AI within WIPO's patent related services
4. Other active AI projects at WIPO
5. Collaboration opportunities

Accelerated increase in global data, but... what's valuable?

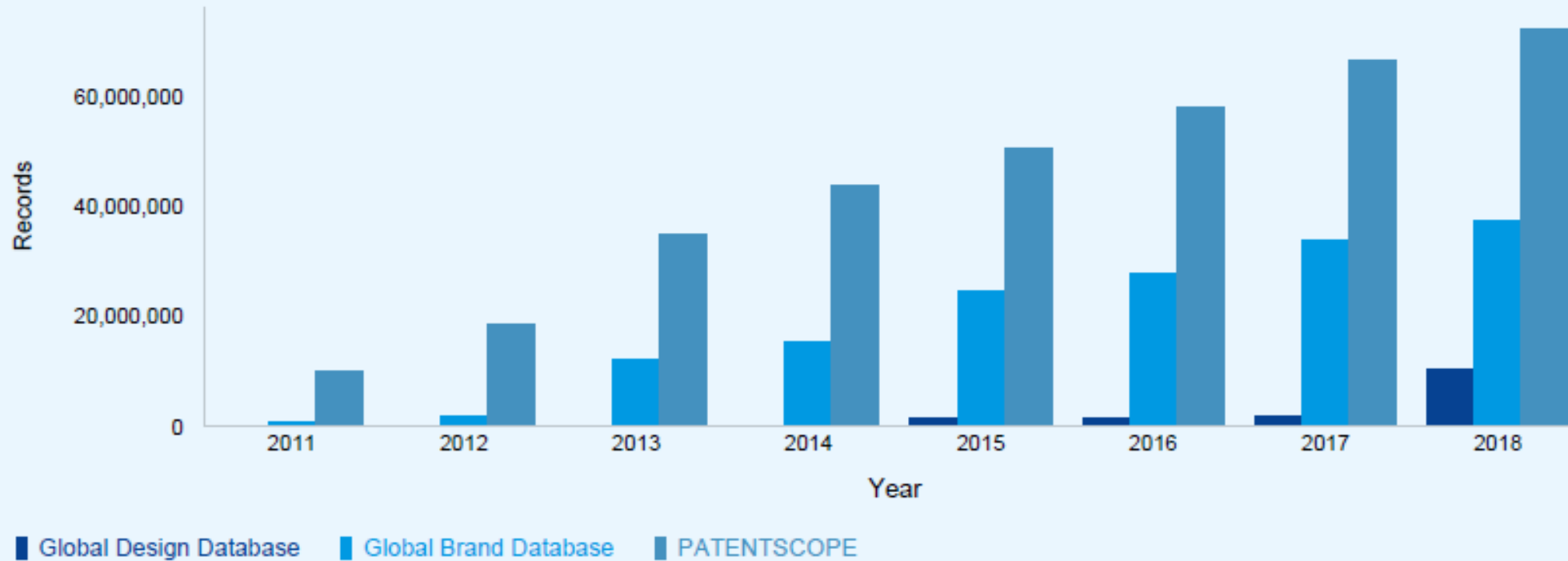


Note: 1 petabyte = 1MM gigabytes, 1 zettabyte = 1MM petabytes of new data created or captured each year. The grey area in the graph represents data generated, not stored.

Source: Mary Meeker's "Internet Trends, 2019" report. Figures sourced from IDC's "Digitization of the World From the Edge to Core" White paper, developed in collaboration with Seagate (November 2018).

Consistent increase in **valuable** data at WIPO

Evolution of records contained in the global databases, 2011–2018



Source: Report of the Director General to the 2019 WIPO Assemblies

WIPO uses AI to help process data, but also to derive VALUE from the data

- As data generated and collected by WIPO increases, so must innovation in treating and making sense of the data – AI plays an important role at WIPO
- WIPO is focused on Narrow AI, so Machine Learning and Neural Networks
- WIPO has and continues to develop its own IP management services and tools using Narrow AI technologies, creating best-in-class applications of AI for the international IP system

AI @WIPO is...Deep supervised **machine learning**

■ Data is the key...and successful AI tools and services need:

1. Quantity

2. Quality

3. Representativeness

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- Lots of data (with human translation/transcription/classification)

2. Quality

- Quality at source.....“garbage in” = “garbage out”
- Automatic segmenting / filtering

3. Representativeness

- In-domain..... “fit-for-purpose”
- Recent data
- Unbiased data

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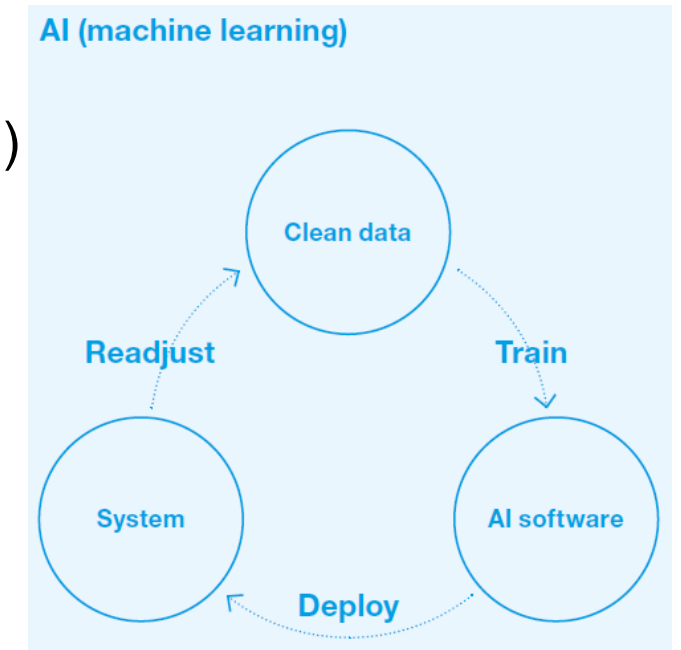
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...and a good Neural Network Infrastructure

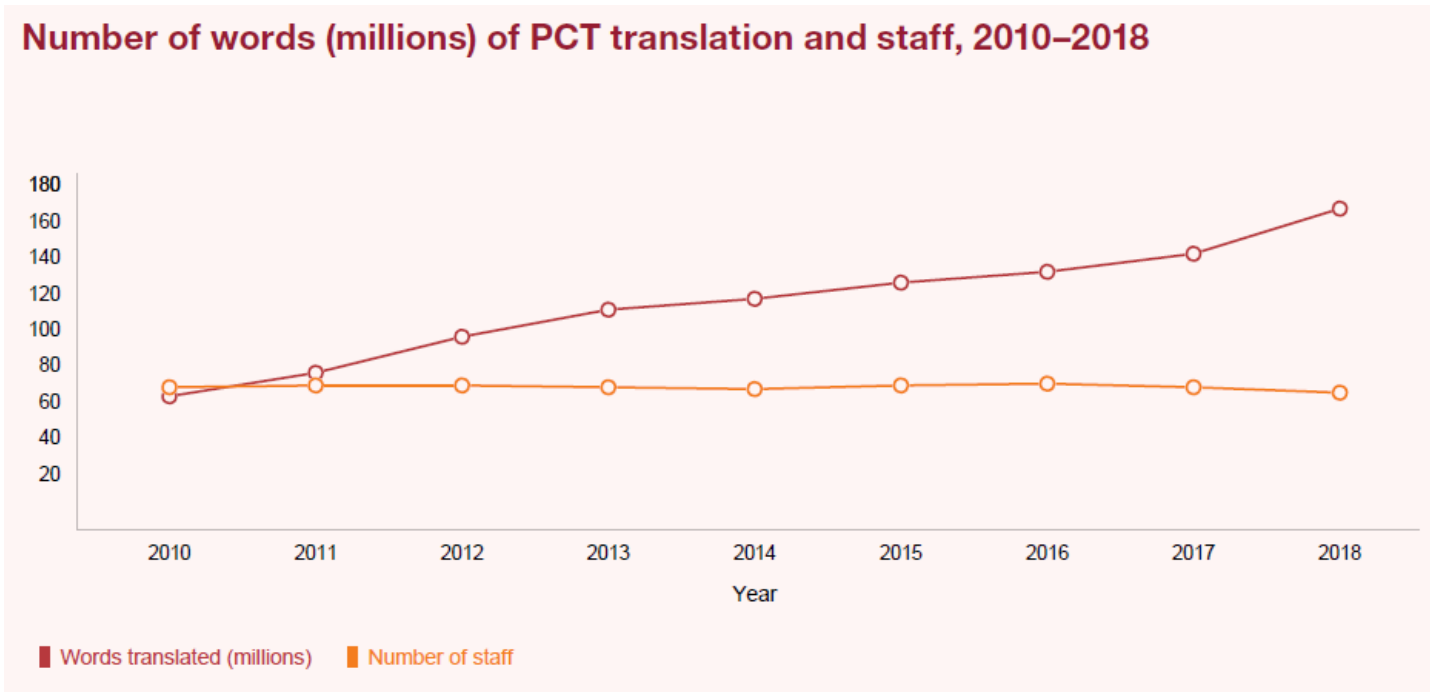


AI is used to improve patent administration at WIPO

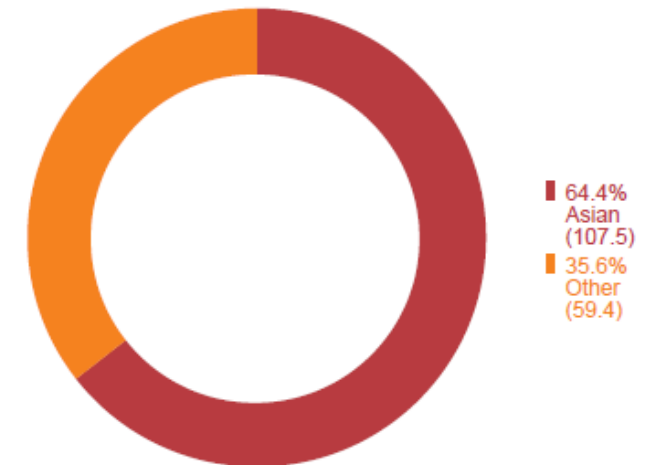
- PCT
- PATENTSCOPE
- International Patent Classification (IPC)

Helping manage increases in PCT translations

- WIPO AI tools* for PCT has provided welcome assistance to translators



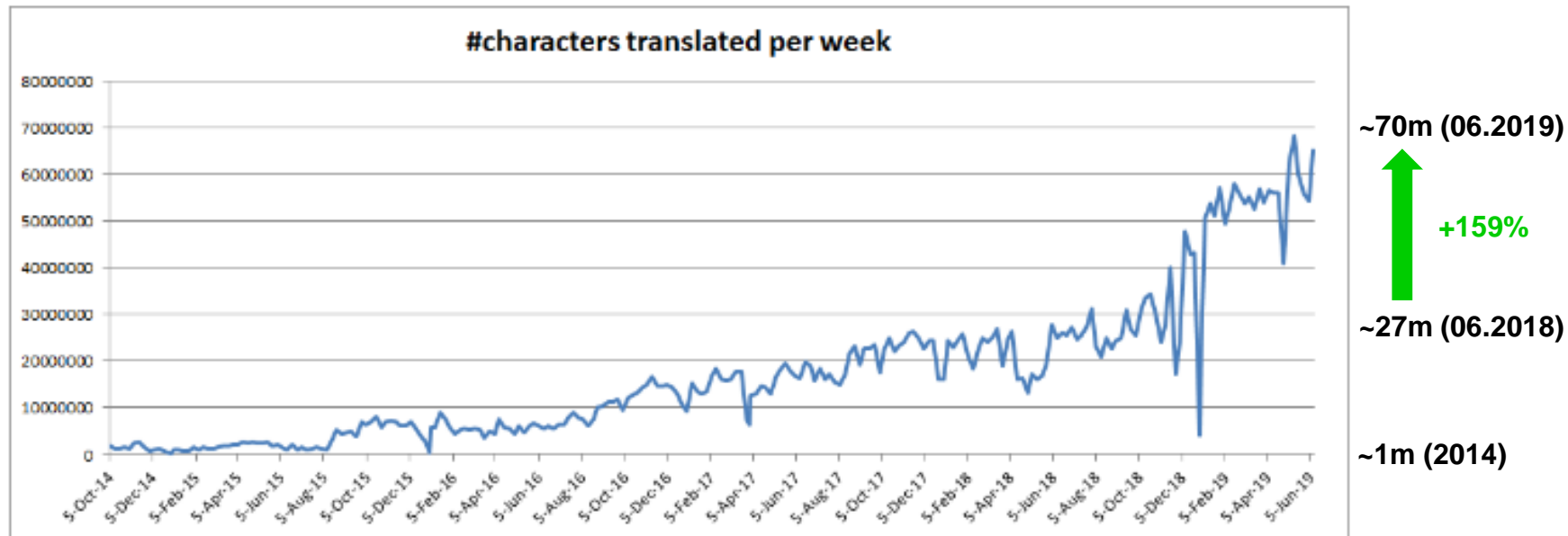
Distribution of words (millions) translated by the International Bureau, 2018



*WIPO's Statistical Machine Translation tool (Tapta) launched in 2011. WIPO Translate (Neutral Machine Translation tool) launched in 2016.
Source: Report of the Director General to the 2019 WIPO Assemblies

Enhancing patent search through PATENTSCOPE

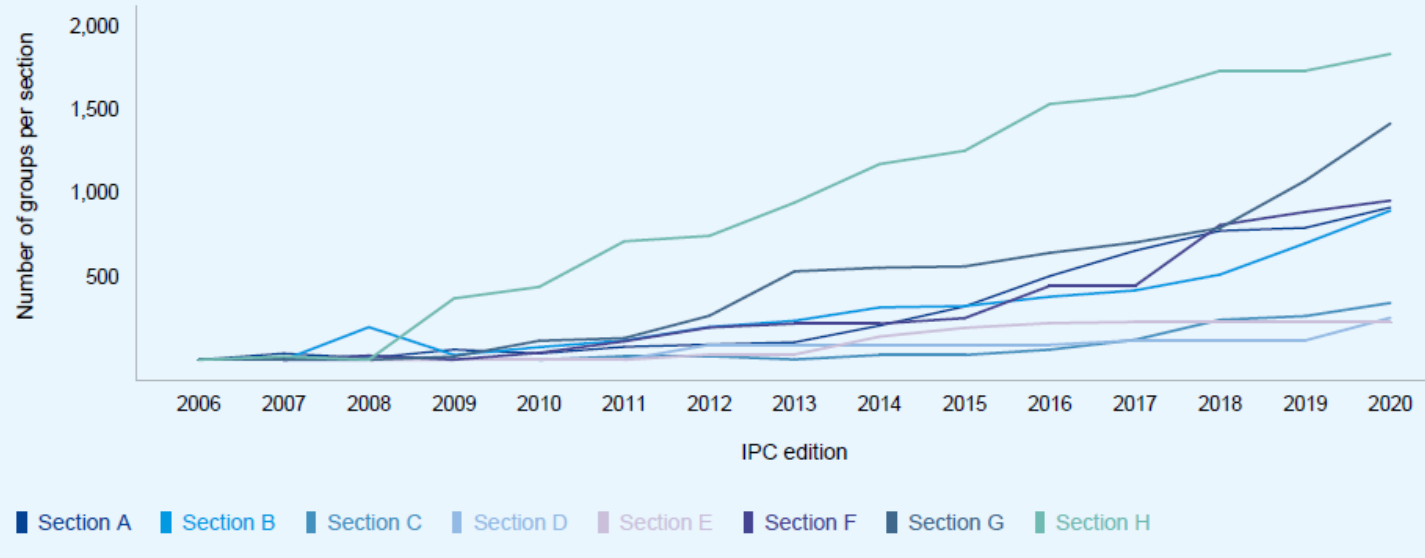
- WIPO Translate works tirelessly to render foreign patents understandable



- Daily volumes reach 2m words translated / day across 18 language pairs
- 65 % Chinese, Japanese and Korean

Automatically assigning IPC classes to patents

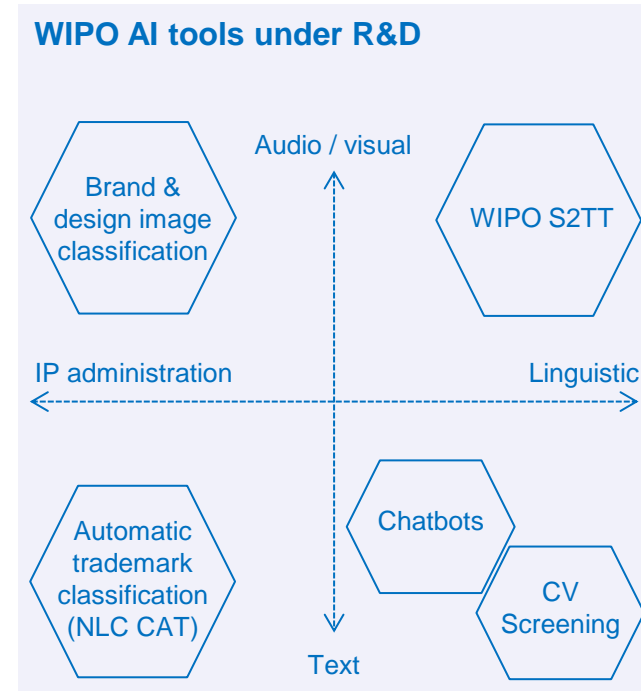
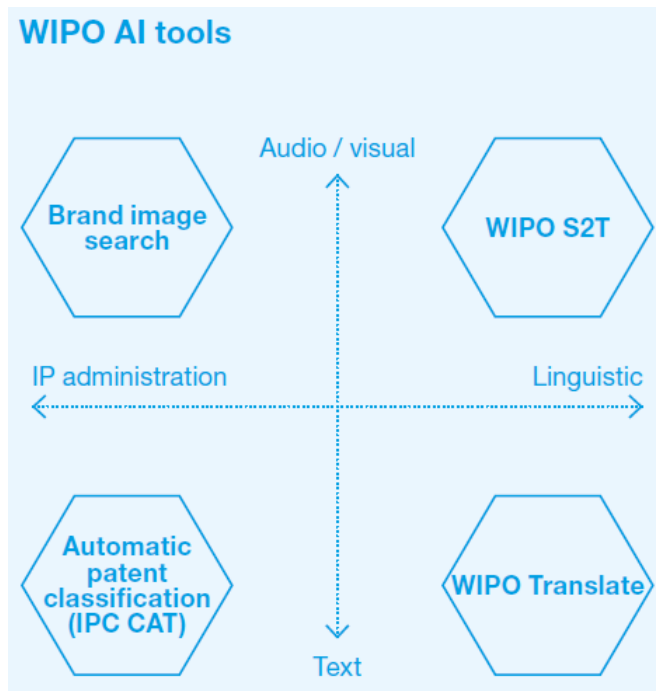
Number of IPC groups, 2006–2020



84% accuracy for top-three IPC guesses among **73,633** symbols

- IPCCAT-neural is WIPO's AI-based automated text classification tool
- Automatic IPC classification at subgroup level
- Text can be submitted in 10 languages, including Japanese and Chinese

Active AI projects at WIPO

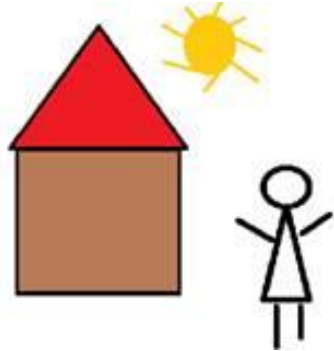


- Image similarity search for TMs
- Speech-to-Text (S2T)
- IPC text classes

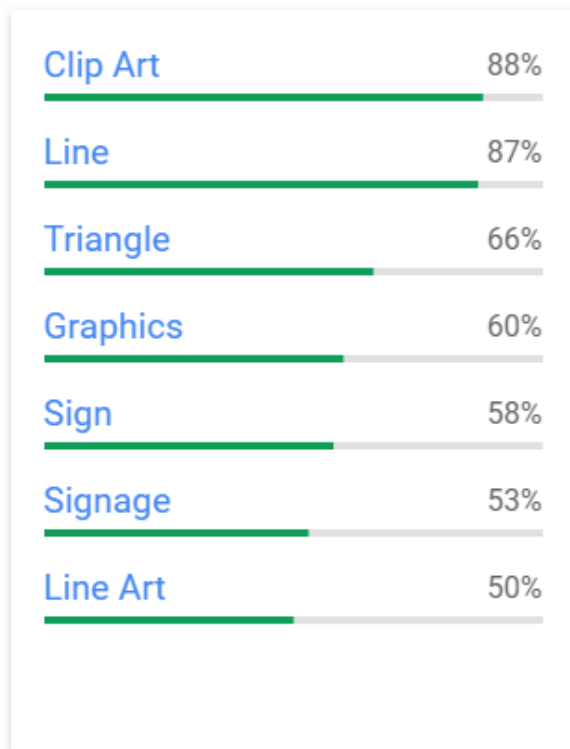
- Vienna visual classes & other
- Speech-to-translated-Text (S2TT)
- Nice classes

How does our AI compare to Industry standard?

- E.g., image classification



Google Vision AI “Labels”



WIPO’s image classification tool

07.01.04	Detached house	12.891
07.01.06	Other stylized houses	11.684
01.05.04	Suns with rays	11.08
04.07.03	Geometric figures or combinations of geometric figures representing a person	10.558
01.05.25	Other representations of the sun	10.538
02.05.02	Silhouettes or profiles of children	9.63

Expanding our AI footprint to assist IPOs and users of IP systems globally

- WIPO's advances and innovations in AI are valuable externally
 - IP industry, and Science and Tech community;
 - Member states and national/regional IP Offices;
 - UN-family organizations, and other international institutions.
- WIPO is mindful of the growing global digital divide and thus committed to providing inclusive access to WIPO AI tools
- Currently following a demand-driven approach in licensing our AI tools
- WIPO continues to drive inter-IPO cooperation on AI by;
 - Organizing conferences and workshops, and running surveys;
 - Championing data and AI-tool sharing through collaboration.



THANK YOU

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