

Digital Transformation at the U.S. Census Bureau: Electronic Medical Mobile Application (EMMA)

As the global economy becomes more dynamic, complex, and interconnected every day, constant innovation is vital for both public and private sector organizations to continue delivering value for their customers. Within the federal government, evolving citizen and constituent expectations have created the imperative for government agencies to digitally transform.

Federal executives are digitally transforming three key areas of their agencies:

- 1) Citizen or customer experience,
- 2) Operational processes, and
- 3) Data lifecycle management and governance

Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how agencies operate and deliver value to customers. It's also a cultural change that requires agencies to continually challenge the status quo, experiment, and get comfortable with taking risks.

The Department of Commerce, Census Bureau's mission is to serve as the nation's leading provider of quality data about its people and economy. Data from the Census plays a critical role in U.S. commerce and the economy by providing information on the population and demographics of our country.

Digital Transformation Use Case

Every ten years, the Bureau fields 500,000 field enumerators nationwide to collect household and demographic information by canvassing assigned areas, documenting, and reporting the results they find. 67 is the average age of a Census Enumerator. The work of an enumerator can be dangerous at times resulting in injury or property damage.

Filing a workers compensation claim, or property and tort claim is a labor intensive and bureaucratic process taking an average of 72 hours just to complete the paperwork.

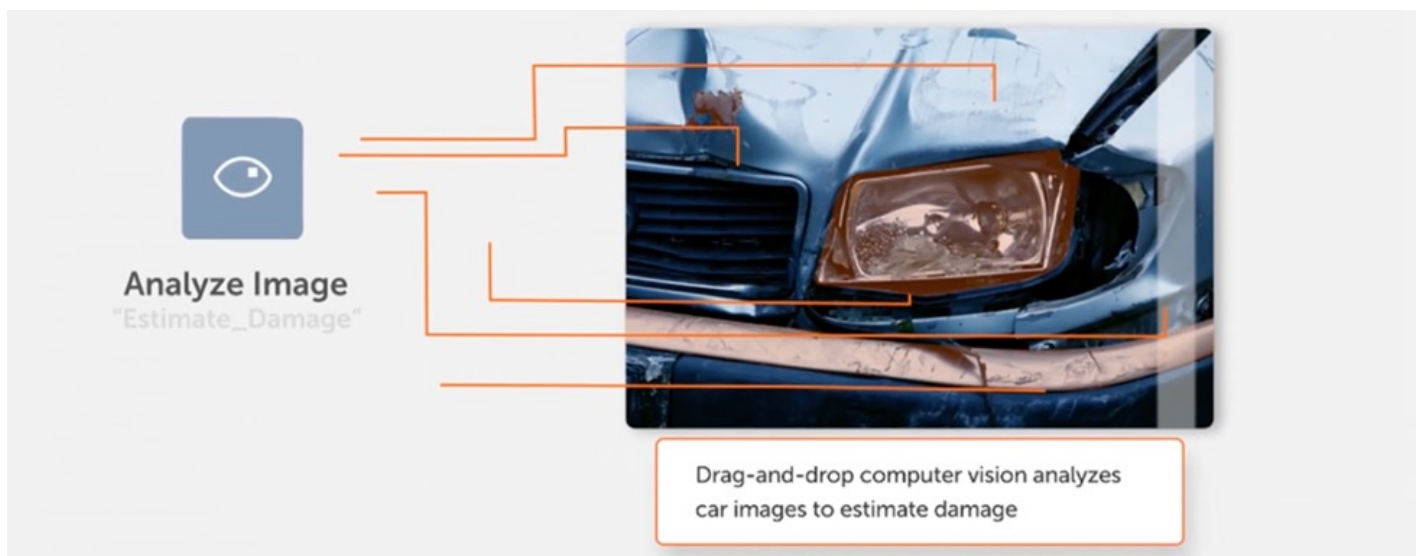
The information also must be shared within the Bureau's three internal offices including the General Counsel's office, and externally with the Department of Labor and the enumerator's doctors.

Restrictions based on Title 13 and Health Information Portability and Accountability Act (HIPPA) data, add additional layers of complexity.

EMMA will Help Field Enumerators Get the Care They Need Faster, When Injured on the Job

The Bureau of Census is leveraging emerging technologies including Artificial Intelligence (AI), Blockchain/Distributed Ledger Technology (DLT),

One aspect of the EMMA project is to leverage computer vision to automatically estimate the damage when an Enumerator is involved in an automobile accident--saving time, and reducing the potential for fraud



Robotic Process Automation (RPA), and Virtual Assistants to synchronize its operations and data governance strategy to better support its Field Enumerators. Because the heart of EMMA is a Blockchain, this opens the possibility of paying Enumerators in cryptocurrency, which may attract a new generation of temporary Census workers.

How EMMA Works

For the 2030 Census, Field Enumerators will use Census phones to file a claim when injured. EMMA will automatically complete claims filing with Workers' Compensation, Safety, and Personal Property and Tort (PP&T) within two mins versus 72 hours which they are experiencing today. All stakeholders receive status updates in real time.

Census Bureau is digitally transforming three key agency functions:

Transforming Customer Experience

- Leveraging RPA to automate away repetitive processes related to claims filings. EMMA uses Automation Anywhere Bots to perform tasks, parse, trigger error-free responses, and reduce the time to complete a claims form from 72 hours to under two minutes
- Leveraging Microsoft Teams, Power Automate, and Virtual Assistants to reduce the burden on the "Are you hurt?" hotline and enable faster support for Field Enumerators while reducing the burden on the call center staff

Transforming Operational Processes

- Leveraging AI including computer vision, to automatically estimate damage when a Field Enumerator is involved in an automobile accident

Transforming Data Governance

- Leveraging the smart contracts feature of Blockchain/DLT to enforce the rules for information sharing under which the Census offices, Department of Labor, enumerators and their third-party representatives mutually agree — eliminates the potential for accidental disclosure and resulting fines and penalties

First Implementation of Blockchain/Distributed Ledger Technology by Census Bureau

In a February 2020 Hearing, the Congressional Oversight Committee, requested that the Census Bureau consider incorporating Blockchain technologies into the 2030 Census. See Tajha Chappellet-Lanier, "Rep. Lynch wants the Census Bureau to look into 'blockchain viability' for 2030," Feb 12, 2020 | FEDSCOOP. EMMA is the first such project and is intended as a model for the 2030 census.

First Ever Use of the Sole Source Authorities of the Small Business Innovation Research (SBIR) Program by Census Bureau

The 2020 census relied on 52 new or legacy IT systems. To meet the Census Bureau's timelines for getting systems online in time for the 2030 census, the Bureau avoided a protracted procurement by leveraging the sole source authorities of the SBIR program. Forward Edge-AI, Inc., an SBIR company with SBIR derived Blockchain, ML/AI, and RPA technologies was selected.

EMMA is the Census Acquisition Team's first Phase III SBIR. By awarding the contract as a Phase III SBIR, Forward Edge-AI was under contract 1.5 business days after receiving the solicitation from the Acquisitions Office. Using traditional methods would have taken 18 – 24 months, even under best of circumstances.

Addressing Executive Orders 13985 and 14042, and Office of Management and Budget Memorandum M-22-03

Executive Orders 13985 and 14041, and OMB M 22-03 encourage all Federal agencies to address systemic barriers in accessing Federal benefits and contract opportunities. EMMA achieved these Biden Administration objectives through expedited contracting with Forward Edge-AI, Inc., a minority owned SBIR company.

The contractor team includes Bowie State University, an Historically Black College/University (HBCU), and students from the University of Texas San Antonio (UTSA), an R1 Minority Serving Institution.

Conclusion and Recommendations

When considering a digital transformation use case to pilot, Federal agencies should:

- Obtain buy-in from senior leadership as well as middle management,
- Have clear stakeholders and champions,
- Consider use cases that have the potential to deliver a quantifiable Return on Investment (ROI), and serve as a blueprint for the agency, and
- Not be afraid to take risks

Acquisition professionals should consider leveraging the contract flexibilities of a Phase III SBIR including sole source authorities, with no limits on the size, scope, duration, or type of contract. In 2022, the program celebrated its 40th year anniversary. A sole source Phase III SBIR contract award can be made in a matter of weeks, or even days. See <https://www.sbir.gov/tutorials/data-rights/tutorial-4>

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