

**Recommendation XX: The federal government should promote the development and adoption of policies, procedures and funding methods that can accelerate the adoption of IoT technologies manufactured by small business and startup organizations.**

**Description:**

The federal government should promote the development and adoption of policies, procedures and funding methods that can accelerate the adoption of IoT Technologies manufactured by small business and startup organizations. It is particularly challenging for small businesses and startup companies in this sector that have to provide upfront capital before hopefully being selected as a result of an RFP. The process for these projects can also take many years to bring them from proposal to commercial operation and these companies may lose interest.

In addition, local governments and jurisdictions are often cash strapped, and underfunded, making it hard to determine where the budgets are coming from to pay for these projects. Small businesses have the primary option of using a channel with existing relationships to cities to make sales which is also unpredictable and not very scalable. This makes it challenging for small businesses and startups and federal funding mechanisms can aid these companies so they can more effectively compete with larger organizations on RFPs relevant to their business.

**Justification:**

Greater adoption of IoT technologies manufactured by small businesses and startups could help in the following examples:

- Incorporation of technologies enabled by IoT: Opportunities for IoT technologies are manufacturers by small business and startups across the IoT. For example, in smart, connected transportation these technologies include sensors, cameras, and edge computing devices that can improve safety in things such as vulnerable road users (i.e., pedestrians at crosswalks), traffic intersections, school, and work zones. Opportunities for IoT technologies in electrified transportation manufactured by small businesses and startups include in car systems or mobile apps that can locate charging stations, as well sensors that manage charging stations to gather data about usage and performance, to anticipate maintenance needs, and troubleshoot problems.
- Greater competition across IoT markets: Making it easier for small businesses and startups to bid on projects and deploy their technology will increase their market penetration and provide end-users more technology options. This would lead to greater competition in selected markets providing end-users the ability to select manufacturers based on several factors such as cost, quality of products manufactured, service, and innovation.

**Implementation considerations:**

- The Federal Government could set aside easily and readily tappable funding pools year-round for innovation and next-generation technologies. Grants could be set aside for categories that the government deems high importance.
- The Federal Government should set aside fast-track programs for startups and small companies to deploy this technology in pilots.
- The Federal Government should set up a system to make it easier for startups and small companies to find relevant funding sources like grants and SBIR awards.
- The Federal Government should encourage local governments to leverage its local startup accelerator network to develop technology and fast-track it to local adoption on successes.

**Potential implementation barriers:**

- Time and Cost: The time and cost for this transformation could be considerable and small companies or startups may lose interest and cancel a project.
- Education: There is an overarching need to educate local governments and consumers on these new types of technologies which could be hard and time consuming, especially relevant for small businesses and startups
- Supply Chain: The manufacturing industry recognizes the goal from the Administration of Buy America, Build America (BABA) however, there are current constraints meeting domestic content requirements and there needs to be an appropriate ramp-up, phase in period to get to full production. Again, this could be particularly relevant for small businesses and startups.

**Possible participating agencies**

- DOE/DOT Joint Office, DOT, DOE, NIST, DHS, GSA, among others