

Draft - General Recommendation, Accelerate the adoption of IoT technologies manufactured by small business and startup organizations.

**Recommendation XX:** The federal government should accelerate the adoption of IoT technologies manufactured by small business and startup organizations. This can be done via policies, procedures, and funding methods that specifically target them.

**Description:**

The federal government should accelerate the adoption of IoT technologies manufactured by small business and startup organizations. This can be done via policies, procedures, and funding methods that specifically target them. It is particularly challenging for these types of manufacturers in this sector that have to provide upfront capital, access, and knowhow, 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 both funding, ability, and interest in that time frame.

Small businesses IoT technology manufacturers have the primary option of using a channel with existing relationships to local governments to make sales which is also unpredictable and not very scalable. Federal funding mechanisms and procurements targeted to them 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.

Draft - General Recommendation, Accelerate the adoption of IoT technologies manufactured by small business and startup organizations.

- Greater competition across IoT markets: Incentivizing 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 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 and RFP opportunities.
- 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.
- The Federal Government can work with the national chamber of commerce, rotary clubs, small business associations, start-up accelerators/incubators, state partnership programs to help identify relevant IoT manufacturers to support and get input on the programs.
- The Federal Government can modify guidelines for grant programs and funding mechanisms already in existence for small businesses to allow for greater incorporation of IoT technologies. Examples include the following:
  - The U.S. Department of Commerce, Minority Business Development Agency (MBDA) (<https://www.mbda.gov/who-we-are/overview>)
  - DOE Office of Small and Disadvantaged Business (<https://www.energy.gov/osdbu/office-small-and-disadvantaged-business-utilization>)
  - National Science Foundation Program for Small Business (<https://www.nsf.gov/funding/smallbusiness.jsp>)

### **Potential implementation barriers:**

- Time and Cost: The time and cost for this transformation could be considerable and small companies or startups may lose funding and/or interest and cancel a project.

Draft - General Recommendation, Accelerate the adoption of IoT technologies manufactured by small business and startup organizations.

- 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 startup manufacturers who have limited personnel.
- 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 startup manufacturers who may have fewer sources to purchase needed components.

#### **Possible participating agencies**

- DOE/DOT Joint Office, DOT, DOE, NIST, DHS, GSA, Department of Commerce, among others.