



## Digital Public Goods: Bridging Gaps in Public Service Delivery

This editorial is based on the Article [Era of digital public goods](#) which was published in The Hindu Business line on 14/09/2023. It talks about the challenges faced by Public Service Delivery and the potential of Digital Public Goods to transform public service delivery.

**For Prelims:** [Digital Public Infrastructure \(DPI\)](#), [Digital Public Goods \(DPG\)](#), [G20 framework](#), [Aadhar](#), [UPI](#), [National Digital Health Mission](#), [ONDC](#), [India Stack](#), [Open Source Software Platform](#)

**For Mains:** Challenges in Public Service Delivery, Digital Public Goods: Advantages, Challenges and Way Forward

The idea of [Digital Public Infrastructure \(DPI\)](#) and [Digital Public Goods \(DPG\)](#) is gaining momentum to expedite a country's inclusive economic growth, as exemplified by India's emphasis on DPIs within the [G20 framework](#). DPIs can be enabled in largely two ways — either through DPGs or through proprietary solutions.

- Digital technologies employed by governments have largely been provided by the private sector that offer a host of advantages, ranging from solutions offered by trusted brands, short term savings, and outsourced development and maintenance — enabling quick fix and returns.

### What are Digital Public Goods?

- [Digital Public Goods \(DPGs\)](#) refer to digital resources and software that are made available for public use, typically with the aim of benefiting a wide range of users and promoting public good.
- These resources are often [open-source](#) and can include various types of digital assets, such as software, data, content, and standards. [//](#)

Digital technologies:  
electronic tools,  
systems, devices and  
resources that  
generate, store or  
process data.

## Digital Public Goods

Public Goods: a commodity or service that is provided without profit to all members of a society, either by the government or a private individual or organisation which is to the benefit or well-being of the public.

- DPGs can be used to deliver new and enhanced public services, such as:
  - Identity systems
  - Healthcare
  - Government schemes
  - Digital public infrastructure, such as banking and payments
- Some examples of DPGs in India include:
  - [Aadhar](#)
  - [UPI](#)
  - [National Digital Health Mission](#)
  - [ONDC](#)

## What are the Challenges faced by Public Service Delivery?

- **Vendor Lock-In:** Vendor lock-in occurs when an organization becomes heavily dependent on a particular technology provider's products or services. This can limit flexibility and make it difficult to switch to alternative solutions.
  - A study by PwC found that vendor lock-in was one of the main barriers to achieving interoperability among different public service delivery systems.
  - For example, during the initial stages of its service, Apple restricted consumers to utilizing iTunes. Music purchased via iTunes could only be played within the iTunes application or on an iPod.
- **External Dependency:** Relying on external entities, whether they are foreign technology companies or international organizations, can lead to vulnerabilities.
- **Lack of Flexibility:** Digitization efforts should be adaptable to changing needs and circumstances.
  - For example, during the Covid-19 pandemic, many public institutions had to quickly shift to online service delivery, but faced challenges due to the lack of flexibility of their existing systems.
- **Risks of Discontinuation or Unilateral Modifiability:** When external entities control digital systems, there's a risk of these entities discontinuing services or making unilateral changes that may not align with the interests of the local government or organization.
  - The [National Digital Literacy Mission \(NDLM\)](#) was launched in 2014 by the Government to make India a digitally literate country through a [PPP](#) model. In 2017, the private sector partner for the NDLM, Tata Consultancy Services (TCS), decided to exit the project. This decision left a huge gap in the implementation of the NDLM and affected its sustainability.
- **Interoperability:** Interoperability is crucial for seamless data exchange and collaboration between different systems. Siloed systems that lack interoperability can result in duplication of efforts and fragmentation of data.
  - For example, the government's Aadhaar biometric identity program is not integrated with the government's tax system.
- **Duplication and Fragmentation:** Duplication of efforts and fragmentation of systems can lead to inefficiencies and increased costs. Coordination and collaboration among different organizations involved in digitization efforts are essential to avoid these issues.
  - For example, the government has multiple programs for providing healthcare and

education to the poor.

- **Public Service Delivery Costs:** Ultimately, the goal of digitization efforts in public service delivery is to improve efficiency and reduce costs. However, when the challenges mentioned above are not adequately addressed, digitization efforts can lead to increased costs instead.
  - For example, the government spends a significant amount of money on subsidies, but many of these subsidies do not reach their intended beneficiaries.

## How can Digital Public Goods be a better Alternative Method of Public Service Delivery?

- **Cost-Effective:** DPGs are **typically open source and freely available**, which can significantly reduce costs associated with software licensing, development, and maintenance. This means that governments and organizations can allocate their budgets more efficiently to other essential services.
  - The **Alliance for Affordable Internet (A4AI)** is one such example. It aims to drive down the cost of internet access in low- and middle-income countries.
- **Inclusivity:** DPGs are designed to be **non-excludable and non-rivalrous, ensuring that all citizens have equal access to public services**. This inclusivity promotes social equity and ensures that marginalized populations are not left behind.
- **Customizability:** DPGs can be **adapted and customized to meet the specific needs of different regions and communities**. Governments can tailor these digital solutions to address local challenges and requirements, leading to more effective service delivery.
- **Rapid Deployment:** DPGs, being **open source** and readily available, **can be implemented quickly**. This is especially crucial in emergency situations or when there's a need for rapid response, such as in healthcare emergencies or disaster management.
- **Transparency:** Open-source DPGs often have transparent development processes, which can **enhance public trust. Citizens can scrutinize the code and understand how services work, leading to greater transparency** in public service delivery.
- **Innovation:** DPGs **encourage innovation as they allow for collaborative development**. This means that a global community of developers can contribute to improving and expanding the functionality of these digital resources, resulting in better services and constant innovation.
- **Interoperability:** DPGs can be **designed with interoperability in mind, making it easier for different government agencies and systems to communicate and share data**. This reduces redundancy and streamlines service delivery.
- **Reduced Vendor Lock-in:** DPGs can **support digital sovereignty by reducing dependence on foreign platforms and technologies**, and promoting local innovation and ownership.
- **Global Best Practices:** DPGs often incorporate best practices and lessons learned from various regions and countries. This can help governments adopt proven solutions and avoid common pitfalls in public service delivery.

## What are the Challenges for Digital Public Goods?

- **Financing and sustainability:** DPGs often face **difficulties in securing adequate and consistent funding for their development, maintenance and scaling**. They also need to establish viable business models that ensure their long-term viability and impact.
- **Technical capability and interoperability:** DPGs **require high levels of technical expertise and capacity to design, implement and manage** them. They also need to adhere to open standards and protocols that enable them to interoperate with other systems and platforms.
- **Digital divide and inclusion:** DPGs need to address the **digital divide that exists between and within countries, regions and communities**. They need to ensure that their solutions are accessible, affordable, relevant and user-friendly for all potential beneficiaries, especially the most vulnerable and marginalized groups.
- **Data and digital rights:** DPGs need to **respect and protect the data and digital rights of their users, such as privacy, security, consent, ownership and governance**. They need to comply with applicable laws and regulations, as well as ethical principles and best practices.

## What are the Solutions for Better implementation of Digital Public Goods?

- **Introduce DPGs (Digital Public Goods) and Infrastructure:** As part of a digital transformation strategy, governments can introduce DPGs and digital infrastructure to align the vision and goals of different stakeholders.
  - This can involve the development and deployment of open-source solutions that foster collaboration, efficiency, and coordination among various government agencies and departments.
- **Develop Open-Source Policies:** To reduce dependence on proprietary solutions and promote innovation and transparency, governments can institutionalize open-source policies. These policies can encourage the procurement and use of open-source technologies in government projects.
  - By embracing open-source, governments can benefit from a wider community of developers, cost-effective solutions, and greater flexibility in customizing and adapting digital tools to meet specific needs.
- **Reform Tendering System:** The tendering system plays a crucial role in the selection and implementation of digital projects. Reforming this system to better acknowledge the needs and capacity of systems integrators as partners is essential.
  - This reform can facilitate the customization and integration of [Digital Public Goods](#) with existing systems, ensuring their sustainability and scalability.
  - It also encourages collaboration between governments and technology providers.
- **Leverage Existing Digital Infrastructure:** Governments should look to leverage existing successful digital public infrastructure when embarking on new projects.
  - For example, India's [CoWIN platform](#), which supported its [Covid-19](#) vaccination drive, built upon previous digital initiatives like eVin and [India Stack](#).
  - By building on proven systems, governments can save time, resources, and effort while addressing large-scale challenges efficiently.
- **Build an International Leadership Coalition:** Collaboration on a global scale is crucial for advancing digital public goods. Governments can take the initiative to build an international leadership coalition that includes heads of states, high-level executives from the private sector, and other stakeholders.
  - This coalition can facilitate the sharing of best practices, mobilize resources, and create synergies to accelerate the development and adoption of high-impact digital solutions in developing countries.

## Conclusion

While the government bears the responsibility of delivering public services, ensuring sustainable development demands a collaborative effort that brings together the private and public sector. This collaboration is essential for the successful implementation of DPGs at a massive scale, reaching millions of individuals. This is precisely where the private sector can play a crucial role in supporting and driving user-centric innovation, thereby encouraging a broader adoption of digital solutions.

### **Drishti Mains Question:**

Discuss the challenges faced by public service delivery in contemporary times, and elaborate on how Digital Public Goods can provide a more effective and efficient alternative method for enhancing public service delivery.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### **Prelims:**

#### **Q. Consider the following:**

1. Aarogya Setu
2. CoWIN
3. DigiLocker
4. DIKSHA

**Which of the above are built on top of open-source digital platforms?**

- (a)** 1 and 2 only
- (b)** 2, 3 and 4 only
- (c)** 1, 3 and 4 only
- (d)** 1, 2, 3 and 4

**Ans: D**

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