Career proposition for software developers and web operations engineers

Introduction

The Government Digital Service is at the centre of the digital transformation of government, making information and services simpler, clearer and faster to use. Technologists are at the heart of our work.

We value both breadth and depth of technical capability. GDS is always on the lookout for technologists who:

- know how to put users first
- can design, build and run digital services
- are committed to sharing knowledge with others
- thrive using agile methods

We offer excellent career opportunities. We expect our technologists to take the lead on important projects, or alternatively become a digital ambassador across government. We provide a choice of career paths offering both technical and wider professional growth.

This document:

- illustrates example career paths
- explains the knowledge, skills and behaviours expected at each career level
- provides the opportunity to identify personal developmental and learning requirements

The technologist job family

We design, build, run and improve new and existing user-friendly digital services in line with government digital strategy.

We do this by:

- understanding users' digital needs, determining how to resolve the issues and technically making it happen
- building the technical design by planning, writing, testing and reviewing code
- supporting production systems through ongoing maintenance, resolution of issues, performance enhancements and further development
- collaboratively working in teams using agile methodology, and working with a range of stakeholders to deliver digital services

- championing the use of digital technologies across government and beyond, setting the standards for others to follow and providing consulting support to government departments
- continually learning and building our own skills to keep pace with the evolving digital landscape and emerging technologies

Technologist career levels

For each level, this outlines:

- a high level description of the level as we understand it
- opportunities and skills acquired during tenure

Junior technologist

Junior technologist is the entry level role at GDS. GDS is likely to be their first or second job in the industry, and their first experience working at scale or with large teams.

Technical expertise

- has basic knowledge of a programming language
- can produce production code with help and supervision
- can use tools to build a basic website

Delivery

- grasp the principles of working in an agile environment
- build their team's confidence in the quality of their work
- with help, show the ability to progress to the next level

Digital evangelism

- show passion for delivering digital services
- show passion for working in agile teams
- share learning with peers including written documentation
- show awareness of the wider tech community
- understand digital in the context of government

Leadership

- be curious about solving problems
- take responsibility for solving the more common problems
- show eagerness to learn
- show awareness of their development needs

- show growing confidence in demoing work, giving feedback and asking for help

Technologist

Proficient in technical systems they're working on, aware and guided by the wider context of their work, helps to plan and ensure delivery, finding opportunities to share information with colleagues and others, taking responsibility for own work and development,

Technical expertise

- *Developer:* is capable of quality front- or back-end development
- *Web operations engineer:* capable of building systems and infrastructure in a structured and documented way
- *Developer:* understands the concepts of programming, e.g. separation of concerns
- *Web operations engineer:* understands the concepts of system architecture
- takes a systematic approach to solving problems
- validates solutions to problems by testing
- understands and uses version control
- can diagnose and debug production issues
- is aware of technical debt
- is aware of common performance issues and the necessary tooling to profile them
- can use third-party libraries

Delivery

- understand agile development and can work in an agile team
- produce work which meets user needs and the necessary standards
- be able to estimate work, understanding relative complexity of different tasks
- understand how their work fits within bigger projects
- communicates with, and gives feedback to, the team in a useful way, keeping people up to speed with progress and flagging likely blockers

Digital evangelism

- looks for opportunities to collaborate with colleagues, both technical and non-technical
- shares knowledge with others by blogging, writing guides, and giving tech talks

Leadership

- apply themselves in using their own expertise to get things done, with support in prioritising and long-term direction
- take responsibility for the quality of their code
- seek opportunities to learn, and apply new knowledge in their work

Senior technologist

Proficient in a wide range of technical systems, involved in selecting technology, approaches, and designing systems. Leading teams to make the appropriate tradeoffs to ensure delivery, and help others to deliver. Widely visible internally and externally talking about work and technical issues, people seek them out for help and advice. Helping to develop others, improve the structure of GDS, and perform long term planning. A role model for technical culture and constructive communication.

Technical expertise

- *Developer:* has broad knowledge of core web technologies, eg HTTP, databases, web applications
- *Web operations:* has broad knowledge of core systems technologies
- Understands system architecture
  - understands how to test system boundaries
  - contributes to systems design
- is experienced in solving problems using technology providing the simplest solutions for complex problems, understanding where software is the answer
- has a deep understanding of the language and tools used by the team
- is able to apply programming skills learned in one language in other languages
- is able to evaluate different means of technical tooling, e.g. documents store versus relational databases
- seeks ways to improve current tooling
- is able to assess services for operational readiness
- identifies and manages trade-offs when deciding technical direction, e.g. balancing the need for precision against deadlines
- manages technical debt appropriately and proportionately
- considers resilience, performance, and failure modes when designing systems, and understands how to validate those concerns
- has deep understanding of how to mitigate common security threats
- makes appropriate trade-offs between using core language features, their own code and third-party libraries, with appropriate validation of 3rd party code

Delivery

- be experienced in working in an agile environment
- ensure the team's work is aligned with wider product direction and the work of other teams
- collaborate well in multi-disciplinary teams
- manage stakeholders well
- have experience working on a whole development cycle and be able to participate at each stage

- have good understanding of the implications of resource and budget decisions for projects
- be able to identify and communicate emerging risks to project delivery
- be able to manage multiple streams of work, balancing the need for focus with a need to support the work of others

Digital evangelism

- show good communication, explaining technical issues in non-technical language
- be involved in the wider developer community, blogging or speaking at conferences
- help the wider civil service and other digital teams across government

Leadership

- be able to act as a technical lead or line manager
- apply expertise confidently and independently in a variety of circumstances
- take responsibility for code quality and testing
- helps colleagues with their career development, finding ways to improve the capabilities of GDS developers, e.g. through tech talks
- able to provide coaching and advice to more junior staff
- identify their own development needs in the context of the long-term direction of the team and organisation
- takes the lead in an incident, pulls in the skills to build an incident team, and coordinates the response

Lead technologist

Expert in many technical areas, coordinating multiple teams, planning goals and budgets, ensuring lessons are learnt, shared and applied from experiences. A recognised authority, pioneering new approaches, defining and sharing best practices. Sets long term goals, ensures development of others, ensures teams are able to maintain focus and momentum. Setting culture not only by example, but also by policing others behaviour.

Technical expertise

- develops efficient, highly-optimised and clear code, delivering an elegant solution in the context of the bigger picture
- has a good understanding of system administration
- can re-architect existing systems, taking current complexity/issues and future design into account
- is the go-to to resolve the most complex technical challenges
- leads the design of systems
- designs resilient systems, accounting for failure and cloud infrastructure

- is aware of emerging security issues and types of attacks, and can design and implement systems with the necessary defences

Delivery

- be able to lead and manage a technical team (or run a small programme with several teams) in an agile environment, responsible for:
  - delivery as planned, or contingencies
  - budget and resource allocation decisions
  - working with product and service managers to identify clear goals and measures
  - reporting progress and blockers at functional reviews or similar
  - articulating and understanding risks and issues in their project
  - ensuring ongoing evolution of the project to learn from past failures and successes

Digital evangelism

- recognised as an authority in the development community, pioneering new thinking and approaches
- be an active member of the developer community and contribute to the prevailing discussions of the time, e.g. through blogging, forum membership and speaking at conferences
- share GDS best practice with other digital teams across government to improve the way others in the field work
- show strong communication skills when advising both non-technical and technical senior stakeholders

Leadership

- able to take on the technical leadership role, including:
  - supervising the work of others
  - managing stakeholders and senior management
  - providing a buffer between teams and stakeholders
  - setting strategy and long-term roadmap, delegating design decisions as necessary
- participate in talent development programmes and quickly identify the potential of those ready to progress to the next level
- participate in senior technical management discussions, making decisions on behalf of other managers