Members in the frontline of research and development

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R&D SURVEY 2015

Prospect surveyed members working in R&D in June 2015 to get their perspectives of their work

OUR 2015 SURVEY OF MEMBERS in both the private and public sectors is the first since Prospect asked members in the civil service to share their experiences of working in R&D at the turn of the millennium.

The responses 15 years ago provided a unique insight into the satisfactions and challenges of working in public science. The union now has a much broader reach, covering key parts of the private sector, so is well placed to offer an even more compelling perspective.

It is timely to share these views, given that the shape and scale of investment for science and engineering will not be known before the Spending Review in November.

> *Yes, there are increases in capital funding, but these are not accompanied by increases in operational funding for exploitation. Rather, operational costs are constantly under pressure to decrease*

While the government's general election manifesto committed to £1.1bn annual investment in science capital, unprotected departments are facing budget cuts – potentially up to 40% – and analysis by the House of Commons library shows that over the past five years, some departments reduced their R&D budgets by more than half in real terms.

In Prospect's view, decisions on investment both in science capital and the underpinning resources needed to operate R&D facilities will be key to developing a stronger and fairer economy.

Skills in science, technology, engineering and mathematics (STEM) will provide the building blocks for our future successful high-quality industries. They must also provide the evidence base for policymaking and advice to government, including effective emergency responses.

The scale of this challenge is illustrated by one of our respondents, who stated: "I don't think people have long-term visions and hopes any more."

PROSPECT'S LATEST SURVEY

Prospect's latest survey in June 2015 attracted 2,079 responses, 27% of them from women. A fifth (20%) of respondents were under 40, 28% were aged 40-49, 40% 50-59 and 12% over 60.

Respondents were highly qualified, including 19% at PhD level; 24% with postgraduate-level qualifications; 29% at first-degree level; 19% at BTEC, A-level or equivalent; 5% at BTEC first diploma or equivalent; and just 4% with no formal qualification.

Just over a third of responses came from the civil service, with a similar number from the private sector and the remainder from members in a range of other organisations including charities, research institutes, public-private partnerships, non-governmental organisations, universities and self-employed consultants.

Of respondents from the private sector and other bodies, 70% had previously worked in the public domain and one in five of their organisations had moved into the private sector in the last 10 years.

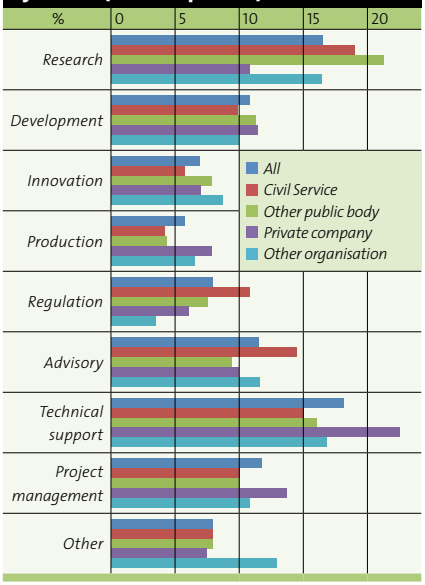
> *While government is happy to invest capital in large facilities, salaries have been capped or frozen and pensions have been reformed, so staff do not feel valued*

KEY FINDINGS

The experience of our members shows that:

- The proportion of work undertaken on a commercially confidential basis has grown significantly, even in the public sector.

Figure 1 – Type of employment by sector (% of responses)



- Although the use of fixed-term contracts is not widespread, repeated use of such contracts over an extended period has not been eliminated.
- Fewer respondents expect their organisations to benefit from increased capital investment in the next three years than have benefited in the past three years. There is a high level of uncertainty about future investment intentions.
- Cuts in public funding have affected R&D across the economy over the past five years. While concerns are strongest in the public sector, 45% of respondents from private companies report that their organisation has been affected.
- The civil service has been hardest hit by job losses, but there have been significant staff reductions across all sectors.
- Among a range of specialist skill shortages, engineering skills are a high priority for all. The shortage of IT and software specialists

Latest revision of this document: https://library.prospect.org.uk/id/2015/00997
This revision: https://library.prospect.org.uk/id/2015/00997/2018-11-12

Figure 2 – Proportion of work undertaken on a commercially confidential basis (% of respondents)

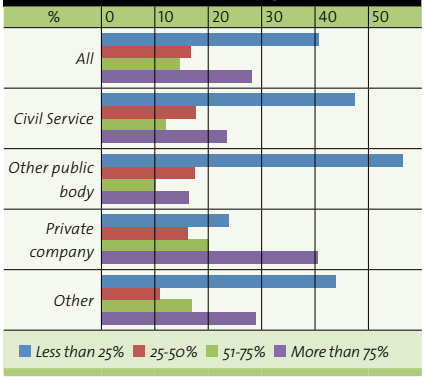


Figure 3 – Growth in commercially confidential work in the public sector 1999-2015 (% of respondents)

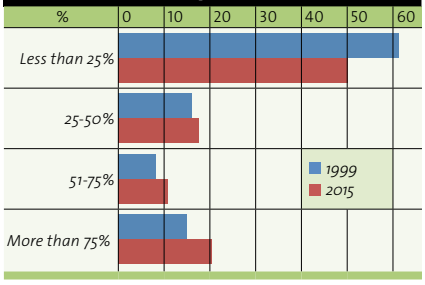


Figure 4 – Length of fixed-term employment by sector (% of respondents)

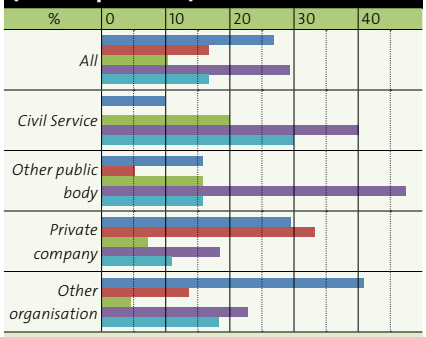


Figure 5 – Expectations of future capital investment (% of respondents)

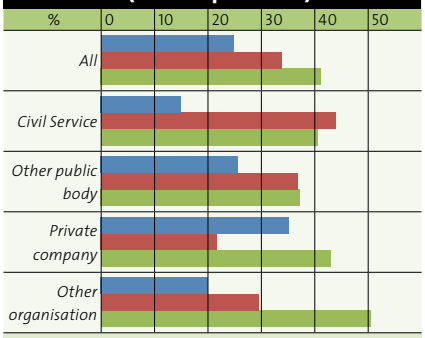


Figure 6 –Effects of cuts in public funding (% of respondents)

is particularly acute in the public sector, whereas a shortage of electrical engineers and nuclear specialists is the priority in the private sector.

- Job satisfaction is generally highest in public bodies outside the civil service, where more time is spent on research rather than related activities.
- Opportunities to make contact with others working in the same field and to work with renowned experts are major sources of satisfaction across all sectors.
- There is very little optimism about career prospects in STEM, with 47% of respondents believing that they do not have any further opportunities to progress. Budget cuts and flatter organisational structures are seen as key barriers.
- 32% of respondents would consider moving to a different employer for better career prospects, better financial rewards, to secure more interesting work or to avoid short-term appointments. Of these, 80% were looking for opportunities outside science.
- 19% of respondents from the civil service reported that they had been asked to tailor research conclusions to suit a customer's preferred outcome.
- Over half of respondents considered that the expertise within their own organisation had declined in the last five years – including 60% in the civil service and 49% employed in the private sector and other public bodies.

> *"You asked about cuts to funding. Our problem is the opposite: our customers are ready and able to fund more work than we can do, but our headcount is restricted and because of poor and falling pay we are unable to recruit and retain specialists in most areas"*

EMPLOYMENT PATTERNS

Figure 1 (see p1) outlines the types of work currently undertaken across different employment sectors. There are some distinct differences between the private sector, where project management and technical support roles are most common, and the civil service, where there is a stronger focus on research, regulation and advice.

However, it is members employed by other public bodies that are most likely to spend their time on research.

Respondents from the private sector were more likely than others to be engaged in commercially confidential work, though 35% of respondents from the civil service reported that 50% or more of their work was commercially confidential – *see Figure 2*.

The proportion of work undertaken on a commercially confidential basis has grown significantly, even in the public sector, as shown in *Figure 3*.

Although 96% of all respondents were employed on permanent contracts, around a quarter of those from other organisations were on fixed-term, agency or casual contracts or self-employed. Of respondents on fixed-term contracts, 17% had been employed on this basis for five years or more.

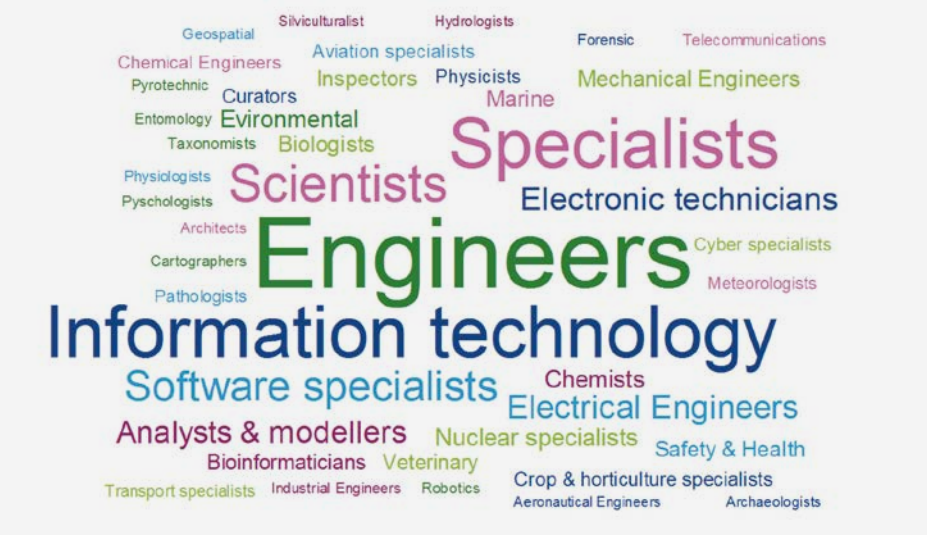
The civil service and other public sector bodies are less likely to employ staff on very short-term contracts, but more likely to employ them on fixed terms of two years or more, as shown in *Figure 4*.

Around a third of respondents from private companies and other organisations had experienced repeated fixed-term contracts, compared with 10% in the civil service and 23% from other public bodies.

A quarter of respondents on repeated fixed-term appointments had had between four-six contracts; 3% seven-nine contracts and 5% 10 or more fixed-term contracts with their current employer. Including previous employment, 40% had four-six fixed-term contracts, 8% had seven-nine such contracts and 13% had more than 10.

Seven in ten (70%) respondents were in posts that are core funded. Private sector companies were most likely to fund R&D posts from project expenditure (14%). One in five respondents from other public bodies relied on a combination of sources to fund their employment.

Figure 8 – Specialist skills shortages in the public sector



We have less than one full-time employee hired in some subject specialisms, so risk losing intelligent customer status. Time and funding restraints mean that recording research for corporate memory is seen as nice to have rather than essential – too much knowledge is only in people's heads – so gone if they leave

INVESTMENT

Overall, 43% of respondents said that their organisation had benefited from increased capital investment in the last three years, rising to 48% in the private sector and 53% in other public bodies.

However, there is less optimism about the three years ahead, with just 25% expecting their organisation to benefit. Private sector respondents were most optimistic in this respect and civil servants least optimistic, though there was a high level of uncertainty overall.

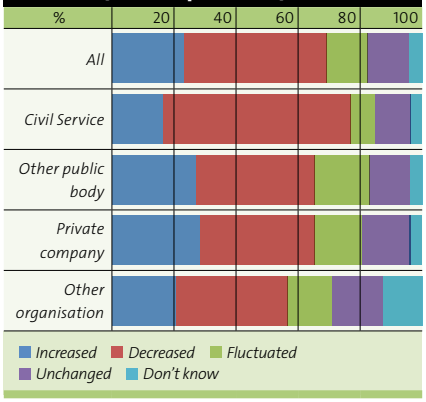
A third of respondents reported a change in the duration of project funding, and 87% of this group considered the change to be negative, with 11% reporting that privatisation has affected the speed of advice, 13% saying that it has affected the content of advice and 18% saying the quality of advice has been affected.

The survey provided evidence that cuts in public funding have affected R&D across the economy over the last five years.

Not surprisingly, this concern was strongest in the civil service (81% of respondents) and among three-quarters of respondents working for other public bodies.

Notably, and of great concern, 45% of respondents from the private sector reported that their organisation has been affected – *see Figure 6* – and 65% believed that funding will become more of an issue in the next three years.

Figure 7 – Changes in staff numbers (% of respondents)



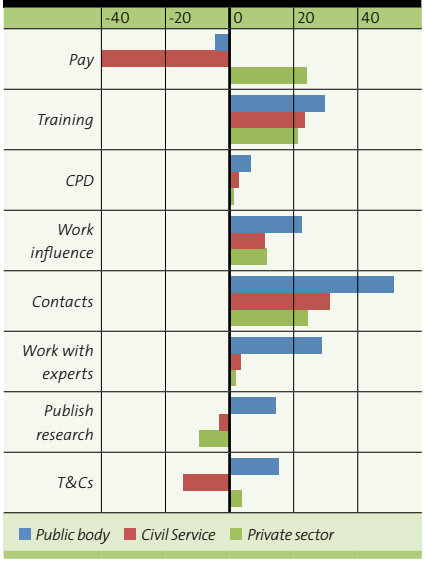
It is clear that the civil service has been hardest hit by job losses, though there have been significant staff reductions across all sectors, as shown in *Figure 7*.

SPECIALIST SKILLS

When asked if they regard themselves as specialists, 73% of respondents said they do – ranging from 78% in the civil service and other public bodies to 66% of those working in the private sector.

Specialist skills shortages in their organisation were reported by 64% of respondents. As shown in *Figure 8*, the public sector shows a particularly acute shortage of IT and software specialists, whereas our survey showed electrical engineers and nuclear specialists are priorities in the private sector.

Figure 9 – Dimensions of job satisfaction



JOB SATISFACTION

Figure 9 shows that, with the exception of pay – which is viewed very negatively by civil servants but positively by private sector respondents – influences on job satisfaction were very similar in these two sectors.

However, in the wider public sector, where more time is spent on research than on related activities, satisfaction was generally higher. As Prospect found in its previous survey, opportunities to maintain contact with others working in the same field and to work with renowned experts are major sources of satisfaction across all sectors.

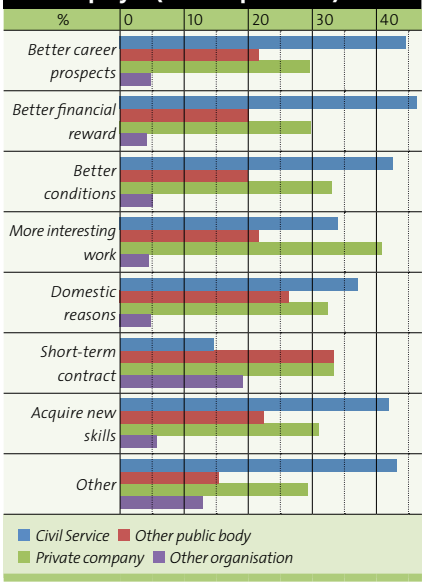
CAREER DEVELOPMENT

However, in contrast to our millennial survey, when 39% of respondents thought that promotion was their most likely career route, the 2015 cohort were not optimistic about opportunities for career progression, and 47% considered that no further progression opportunities were open to them.

From the private sector, 11% of respondents considered that promotion opportunities have increased in the last five years compared with 5% of civil servants and 7% from other public bodies. By comparison, 27% identified reduced

Figure 10 – Factors influencing progression opportunities

Figure 11 – Reasons for moving to a new employer (% of respondents)



opportunities for promotion in the private sector, 42% in the civil service and 32% of respondents from other public bodies.

Budget cuts were seen as the major barrier to progression (by 40% of respondents) followed by flattening of organisational structures (24%). Younger respondents were particularly conscious of budget cuts as a barrier to their progression (59%) whereas those aged 50-59 were most aware of the impact of flatter organisational structures.

However, respondents mentioned a range of other factors that affect progression opportunities, *see Figure 10.*

Asked if they would consider moving to a different employer, 32% of respondents said they would. The key drivers in the civil service were better career prospects and better financial rewards. Private sector respondents were more interested in the prospect of more interesting work. In other public bodies, there was a desire to avoid short-term appointments – *see Figure 11.*

Other reasons for wanting to move to a different employer included feeling unappreciated, a desire for better management, better work-life balance and access to part-time work.

Eight out of ten (80%) of the 32% considering moving reported that they were looking for opportunities outside science, with management (22%) and consultancy (19%) being the most popular options, followed by self-employment (13%).

However, 52% of all respondents would advise a member of their own family to choose a STEM career and 36% would consider doing so. Relatively low pay, job insecurity and uncertainty over future funding were cited as negative factors by respondents from the civil service and other public bodies.

Pay and poor career prospects for specialist staff were key factors steering private sector respondents away from making a positive recommendation, along with the growing influence of accountants on investment strategy.

> *"In many areas, especially defence, the UK is no longer a player. Yet our lords and masters pretend we are still punching above our weight. They are telling lies!"*

INTELLECTUAL EXPERTISE

Overall, 14% of respondents reported that they had been asked to tailor research conclusions to suit a customer's preferred outcome, including 19% of respondents from the civil service.

This is up from the 17% of civil service respondents expressing this view in Prospect's millennial survey.

There is a much stronger view than previously that the research scientist and research team should have a share in intellectual property rights generated, with 19% of respondents currently considering that the research scientist should benefit, compared with 7% at the turn of the century. Further, 29% considered that there should be some benefit for the research team as a whole compared with 14% previously holding this view.

Of those who responded, 53% considered that the expertise within their own organisation had declined in the last five years. This was highest in the civil service, at 60%, up from 41% of civil servants in the millennial survey.

In the private sector and other public bodies, 49% considered that expertise had declined.

By comparison just 9% believed it had improved – though private sector respondents were more optimistic in this regard (11%) than civil servants (5%). Overall, 25% considered that expertise had stayed the same and 14% said that they did not know.

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