Shaping the Mobility of Tomorrow: Inside Software République's "Talent Academy"

Connected cars will soon become an extension of our digital ecosystem. As the automotive leader Renault Group designs the future of mobility, it's vital to build a workforce reflective of the people who will buy, drive and use the vehicles of tomorrow.

Temps de lecture : minute

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Emma Pegg had a conversation with Sophie Dumas, the Strategic Project Director of the Talent Academy, about Renault Group, Software République, and the Talent Academy, an innovation training ecosystem designed to attract, train and upskill talent to shape the future of connected mobility.

Picture a car technician. Do you see someone in greasy overalls with a spanner between their teeth, or someone sitting at a computer? The future of connected cars means that by 2030, <u>the estimated value of a car will be more than 50% its software</u>. More and more, car engineers will also become software engineers, and modern vehicles an extension of our digital ecosystem.

Right now, Renault – one of the world's leading car manufacturers and specialists in electric vehicles – is evolving into a tech company. And one of the biggest challenges that the company faces is recruitment.

"Every year, 40,000 engineers enter the job market. There are 80,000 open roles in France," says Sophie Dumas, the Director of the Talent

Academy at Software République. This recruitment challenge is shared across six organisations:

- Eviden, an Atos company
- Dassault Systèmes
- Renault Group
- Orange
- Thales
- STMicroelectronics

In 2020, the six companies unified to form the EU mobility innovation ecosystem, Software République, and built the Talent Academy to attract, train and upskill the next generation of talent. We talk to Sophie on how she is building this Talent Academy to address for these challenges and in doing so, drive more diversity in Science, Technology, Engineering, and Mathematics (STEM).

Entering the world of computer science and automotives

Sophie joined the Renault Group in 1999. After studying maths and physics for a year at the University of Orsay, she made the decision to switch to computer science. It was a decision born out of practicality.

> *"I studied the market and saw that there was a high demand for these skills. I chose it because I knew that it had high potential."*

After two years of studying and programming, Sophie obtained a Diplôme

Universitaire de Technologie (DUT), a BAC+2 diploma. After that, she joined the European Aeronautic Defence and Space (EADS) company, the European leader of aeronautic industries (previously Aerospatiale). After a year, Sophie returned to university to complete a PhD on the evaluation of object-oriented architecture (the beginning of cloud technology) while working on a European research project (ESPRIT) for four years.

After leading vehicle quality systems at the Renault Group for five years, Sophie went on to manage subcontracting with Atos, then spend three years as the Executive Secretary to the CIO. Sophie then managed cross-functional teams set-up by the chairman and CEO of Renault, Carlos Ghosn, across sixteen teams, seventeen pilots (people identified by Renault as high potential future leaders), and 180 high-potential crew members.

From 2017 to 2019, Sophie worked on an infotainment (information and entertainment) system for connected cars, which was later showcased at the 2028 Motorshow in Paris.

In 2020, Sophie took the role at the Talent Academy: a newly formed initiative that made cybersecurity its first priority.

"We decided to focus first on cybersecurity because engineers in cyber are one of the most sought after professions across Software République," explains Sophie. "As the world becomes more and more connected, we need these people to build cars that can withstand any kind of cyberattack."
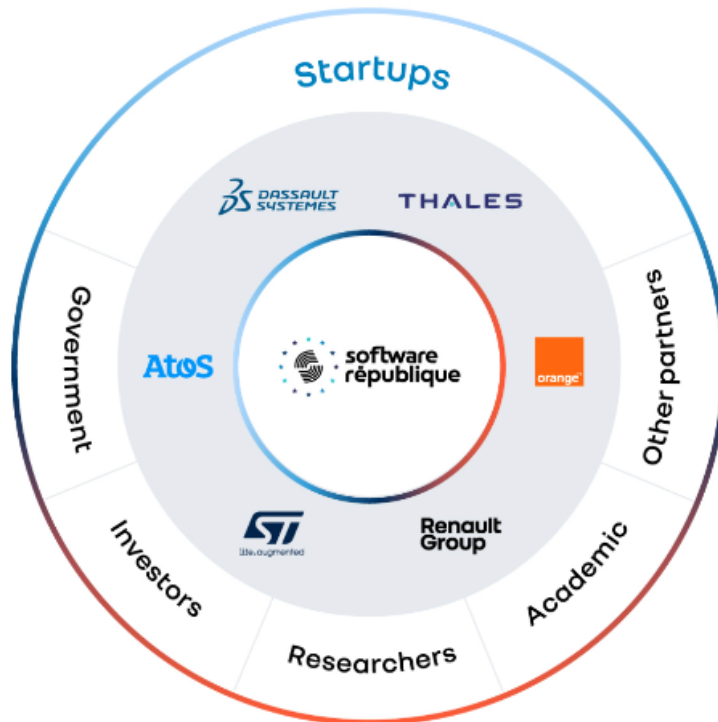
The Software République ecosystem

Bridging the skill gap with the Talent Factory, Incubator and Accelerator

Within the Software République ecosystem, the Talent Academy is segmented into three tailored programmes that cater to the key moments in a professional life:

- Talent Factory, for students aged 15-20
- Talent Incubator, for apprentices aged 20-25
- Talent Accelerator, for current employees aged 25+

Talent Factory:

The Talent Factory is for young people aged between 15 and 20, with a particular focus on women, as well as students living in deprived areas.

"The most important goal of the Talent Factory is to show young boys and girls what a career in engineering might look like, and in turn, what an engineer looks like. We often go into schools to show students what a career in engineering will look like, and the various jobs within it – from software developers to software integrators, safety engineers, project managers, data analysts, cyber engineers, UX/UI designers, and more."

> *"Students' faces light up when they learn that the new car floor is made from recycled plastic. They care deeply about the environment. Part of our work is showing that cars are a part of the problem, but cars are also a part of the solution."*

One of the reasons that Software République emphasises this age group is due to the early career decision-making in France. At 16, most students choose their focus – literary or scientific through the Baccalauréat ("le Bac"), impacting their future career paths and potential entry into tech fields.

For Sophie, it is vital to encourage an interest in scientific and technological careers early on. "It's hard to change paths later on," she says. "Even in the Talent Accelerator, most of the postgraduate learning opportunities need a technical background in maths, statistics, or at least one of the sciences."

Designing a H1st / Human-First future

Envisioning a human-centric future of mobility, Software République presented the _H1st vision concept car_ at the Viva Technology 2023 exhibition to show the possibilities of biometrics, V2X (vehicle to X: car, city, people, infrastructure…) , cybersecurity, and more. H1st includes more than twenty revolutionary innovations from the Software République ecosystem, from face recognition that means that no key is needed, the measurement of vital signs, such as your heart rate and blood pressure, help to park and automated calls in case of emergency.

Looking at this car, young people can imagine what a connected vehicle might look like – from its ability to monitor heart rates through its steering

wheel or to recognise a face when the driver unlocks the door. Sophie explains that the objective of this program is to "*susciter la passion*" – ignite a lifelong interest for science and technology.

To attract more women into engineering, the Talent Factory works closely with *Elles Bougent*, a French non-profit association.

Elles Bougent connects women mentors (called tech 'godmothers') across science, engineering and computer science with high-school, college or university students. One of its aims for Renault women is to dismantle the notion that car manufacturing is only for men, and promote the opportunities and rewards that come from a career in the automotive sector.

Talent Incubator:

After formal education, the *Talent Incubator* is a community of over 600 apprentices who learn while they work.

"There is often a knowledge gap between what is taught at schools and what the industry needs," says Sophie. "The Talent Incubator gives young talent, aged between 20 and 25 years old, the opportunity to learn applicable, sought-after skills in cybersecurity, data, artificial intelligence (AI), and software, while getting paid at the same time."

The apprenticeship program includes site visits, the opportunity to meet other startups, attend conferences with domain leaders, and take part in exercises, such as hackathons, white-hat hacking and 'Capture the Flag' (CTF) competitions.

One project currently underway is in Automated Guided Vehicles (AGVs) and on Electronic Control Units (ECUs) – small embedded electronic devices that control one or more parts of the vehicle. With its cybersecurity focus, the exercise for apprentices will be to simulate cyber

attacks to find any weaknesses in the product so that they can correct them.

Talent Accelerator:

For employees already working at one of the six organisations in Software République, the _Talent Accelerator_ provides training to raise awareness, upskill or reskill in the fields of cybersecurity, data/AI and software development. These include university-accredited diplomas and certification courses matched to an individual's profile.

Steering development in the right direction

A lack of diversity in the engineering and automotive industries has led to troubling statistics, such as women being almost _73% more likely to sustain a serious injury_ in a real-life collision _than men_. Essentially, this has been put down to the use of male crash test dummies, and in recent years, 'female' dummies that did not reflect the nuances in a woman's anatomy — only the height difference.

"If we continue on the same course, we risk being in the same position with these new software defined vehicles," says Sophie. "This is why it is crucial that we have a diverse workforce working on the design and the capabilities of future connected vehicles. Renault's mission is to build the future of a connected, safe and sustainable mobility. For that, we need everyone on board."

Sophie's advice for the next generation

For Sophie, "When I joined Renault twenty years ago, I'd never have pictured myself doing what I do now. Life is a succession of opportunities. You have to seize the opportunity when it comes by and be curious."

> *"There will always be a risk – sometimes, it will work. Sometimes, it won't. But if you don't take it, you will always stay in the same place. Embrace the fear, do it anyway, and trust yourself."*

Paving the way for the next generation of talent

In just two years, the Talent Academy has already demonstrated success in France. The programme is currently being rolled out across Spain and Morocco, with more regions to follow.

As Renault transforms into a technology company, there is a unique opportunity to positively influence mobility and introduce untold innovation to improve vehicle safety, sustainability and quality.

The 'H1st' vision concept stands for ('Human First'). By prioritising people across every stage of education and work, Software République is not only shaping what a connected car might look like. It is also paving the way for the next generation of talent to steer the industry towards a safer, more sustainable future.

Sophie Dumas is the Strategic Project Director of the Talent Academy at _Software République_. To learn more about the Talent Academy and the H1st Concept Car, click _here_.

Article by Emma Pegg