i4.0

Industry 4.0

Imagine your future. *Build it now.*

SECTION6 — the right capabilities and services for your imagined future.

CURRENT AS AT 2021| V1.2

www.section6.io

Red Hat
Advanced
Business Partner

SECTION6
ON MISSION

A changing landscape

The Fourth Industrial Revolution is a fundamental change in the way we live, work and relate to one another. It's a new chapter in human development, thanks to extraordinary technological advances.

These advances are merging the physical, digital and biological worlds in ways that create both considerable promise and potential peril.

The speed, breadth and depth of this revolution is forcing us to rethink how countries develop, how organisations create value and what it means to be human.

The Fourth Industrial Revolution is about more than just technology-driven change; it's an opportunity to help everyone, including leaders, policy-makers and people from all income groups and nations, to harness converging technologies to create an inclusive, human-centred future.

The real opportunity is to look beyond technology and find ways to give the most significant number of people the ability to impact their families, organisations and communities positively.

What we see

We see clues of the 4th Industrial Revolution everywhere.

Global warming is now looking to science and new technology for solutions — and getting them.

Even COVID has had its positives — with the right technology in place, working from home is not only possible but also largely more productive.

Strangely, we see many organisations not yet participating in this revolution, let alone leading it.

Instead, we see many organisations struggling to adapt — persisting with framing their future in terms of their current mode of operation and past successes. Left unchecked, these businesses will be left behind and, in time, fail. They will be the businesses that define what came before Industry 4.0.

A NEW WAY

What we need to do is imagine a better future.

A better future where our customers and users are getting more, getting it faster and of higher quality. A future where our people are safer at work and more productive. And a future where business is redefined by technology, which is now central to our business strategies.

On Mission

At SECTION6, we help our clients imagine a better future and build it with them.

We can do this because of the methods we use, the experience we bring, the skills we have and the technologies we choose — combined as core Industry 4.0 capabilities that together are building and accelerating the 4th Industrial Revolution.

WHAT YOU'LL GET FROM THIS DOCUMENT

When looking closely at our society and current digital trends, the 4th Industrial Revolution consists of many technologies.

These can be summarised under the headings of On-Demand Computing, Industrial IoT, Cognitive Automation and Cybersecurity.

It's the experience in these capabilities, and their underlying technologies, that SECTION6 provides, along with two further key practices that are important to its success — Agile Integration and DevOps.

This document overviews SECTION6's Industry 4.0 capabilities that together will help you imagine and build your future.

Industry 4.0

Imagine your future. *Build it now.*

SECTION6
ON MISSION

Core i4.0 *Capabilities*

Create your Industry 4.0 strategy with these capabilities on board

SECTION6
ON MISSION

Core i4.0 *Capabilities*

Together, with SECTION6, these six capabilities will help you unlock the opportunities created by the 4th Industrial Revolution.

DevOps *Delivery*

Business agility with improved reliability, economics and security.

Cognitive *Automation*

Technology leading the decision making, not the other way round.

On-Demand *Compute*

On demand compute power and capability — delivered where and when you need it.

Industrial *IOT*

The ‘nervous system’ connecting the physical and vital organs of industry to the digital world.

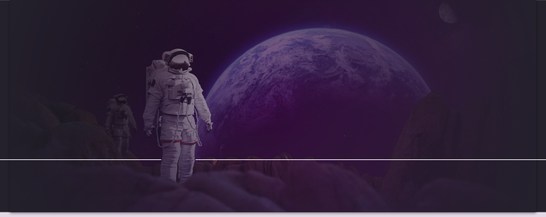
Cyber *Security*

Protecting your investment internally and externally, along with your software supply chain.

Agile *Integration*

Machines, devices, sensors and people — connected and communicating securely.

DevOps *Delivery*



CORE CAPABILITIES

DevOps Delivery

Business agility with improved reliability, economics and security.

WHAT IS DEVOPS?

DevOps is a practice that combines software development (Dev) and IT operations (Ops).

Properly applied, DevOps shortens the systems development life cycle and provides continuous delivery with high software quality.

DevOps is complementary with Agile software development which has been shown to deliver more reliably and to a higher standard of quality.

"Complex environments consist of multiple agents that interact in a multitude of diverse ways, with system outcomes being non-deterministic. Complex environments are therefore noted to be difficult to control, such as is the case with many software development endeavors."

- P Clarke, et al. Software Research Centre

WHAT IS ADDRESSED BY DEVOPS?

DevOps, as an Agile discipline, helps address Complexity.

Complexity in the application of technology in business is increasing. As described above, there are multiple agents at work in a modern technology endeavour — enterprise projects span Dev and IT Ops and other technology roles and IT teams, including those with security and economic requirements.

Perhaps, more significantly, projects will often span multiple lines of business. So even before the technology complexity is begun to be addressed, the business variables and their demands make things more complex as each team and group bring their own risks and opportunities to the endeavour.

WHY INDUSTRY 4.0 AND DEVOPS?

If delivery was complex before Industry 4.0, it has only become more so and will continue to be.

An Industry 4.0 lead strategy is the coming together of business and technology in a world where information and speed are the new currencies which must be harnessed lest organisations are left behind.

Organisations need delivery processes that operate at the same speed and agility in which the organisation is also exploring, learning and creating new business models.

Delivery processes must match the business for its need of adaptability, scalable, reliability and security. Attributes that their consumers expect and their brand demands.

SECTION6 DEVOPS

SECTION6 DevOps capability takes responsibilities for responding to changes in your market (driven by consumer or citizen demand), testing and deploying new features as quickly as possible, while ensuring the stability, reliability and security of the underlying platform.

SECTION6 unique DevOps Virtual Team services decouples delivery capacity from technical capability.

What this means is that a SECTION6 DevOps team is a fixed price capacity with uncapped capability. We respond to new needs without you needing to employ extra people when new requirements require new skills.

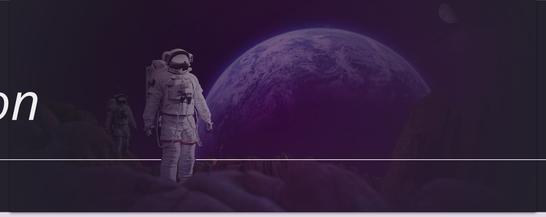
IMAGINE – YOU, i4.0, AND DEVOPS

Imagine DevOps working with your business to understand their goal. Rather than building technology for technology's sake, focus on a joint understanding of the target outcome — business lead and technology delivered.

With a foundation of DevOps, you can then have the confidence to imagine the remaining Industry 4.0 capabilities in your strategy.

Trusting that you can explore, learn and create your new business models to serve your business now and into the future.

Cognitive *Automation*



CORE CAPABILITIES

Cognitive Automation

Technology leading in the decision making, not the other way round.

WHAT IS COGNITIVE AUTOMATION?

While robotics automates work done by hand, cognitive automation focusses on work using our heads.

Cognitive Automation simulates the human learning procedure to grasp knowledge from the dataset and extract the patterns on which it can make judgments that are often better and faster than humans. And because it can use many different data sources such as images, video, audio and text, its decision making is independent of the type and source of data. Cognitive automation unlocks and leverages all of your information together.

WHAT IS ADDRESSED BY COGNITIVE AUTOMATION?

Many high-value business processes involve the processing and judgement of knowledge workers — reflecting the value and IP your organisation has developed over many years.

Work done by people takes a non-trivial amount of time to complete tasks, is constrained by the number of people available, and is vulnerable to the tenure of your people.

Issues, once manageable, have now grown in volume and variety as the impact of data also grows. With speed to market mattering more, the ability of people to perform these tasks quickly, accurately and consistently is challenging.

For future Industry 4.0 applications (such as what is described under Industrial IoT), it will be impossible for humans to compete.

WHY INDUSTRY 4.0 AND COGNITIVE AUTOMATION?

Organisations with physical infrastructure are looking to create 'smart' operations — smart cities, grids and factories. Others see the opportunity for robotic processes across previously human-directed activities. Your business needs to modernise and adapt by using your growing volume of data and enabling the speed at which you can analyse and make decisions with it. When you do this, you will inevitably outstrip what is humanly possible. Re-deploy your knowledge workers to guide cognitive automation, rather than have them continue to do the doing. By doing this, you are also capturing your IP with your software. Increasing your business's value and leveraging on-demand compute to scale — allowing you to deal with the peaks and troughs of client requests and the demands of your new smart infrastructure.

SECTION6 COGNITIVE AUTOMATION

SECTION6's skills in project and product management, agile integration, data platforms, containers and the programming and application of machine learning algorithms help you create a new 'smart' business. An ecosystem of connected devices (IoT) and robotic automation for tasks that otherwise require more people than is sensible or possible.

Combining intelligent/smart devices, and robotic and cognitive automation often means a transformation to the underlying business.

When the broad goals are understood, but the detail of how it affects your business still requires investigation, we de-risk your transformation by applying our skills in agile SCRUM delivery combined with DevOps.

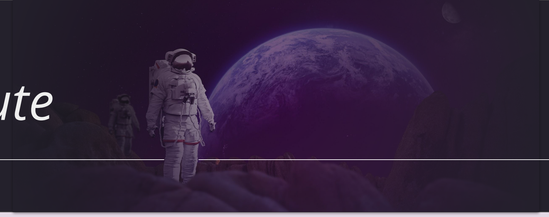
IMAGINE – YOU, i4.0, AND COGNITIVE AUTOMATION

Consider the tasks most critical to your business. Those that have the best opportunity for automation, if only a machine had the judgment of a human, and a human had the speed and the low error rate of a machine.

Now imagine applying cognitive automation to these tasks. Because, with the maturity of Industry 4.0 technologies, this is now possible.

And imagine, if you do not do it, your competitors will, or worse they are, already.

On-Demand *Compute*



On-Demand Compute

On demand compute power and capability — delivered where and when you need it.

WHAT IS ON-DEMAND COMPUTE?

On-demand computing is a delivery model in which computing resources are made available to the user as needed.

The resources may be maintained within your enterprise, or by a cloud service provider; cloud now synonymous for on-demand.

Beyond the cloud, on-demand compute also embraces edge computing—a distributed computing paradigm that brings computation and data storage closer to the location where it is needed to improve response times and save bandwidth.

WHAT IS ADDRESSED BY ON-DEMAND COMPUTE?

The on-demand model was developed to overcome the common challenge to an enterprise of being able to meet fluctuating demands efficiently. Because an enterprise's demand for computing resources can vary drastically from one time to another, maintaining sufficient resources to meet peak requirements can be costly. Conversely, if an enterprise tried to cut costs by only maintaining minimal computing resources, it is likely there will not be sufficient resources to meet peak requirements. This is what the cloud addressed for many. But the cloud has its own performance issues. Edge computing emerged to bring video and other static content closer to the user. Edge compute is now being used not only for speed but also for increased resilience.

WHY INDUSTRY 4.0 AND ON-DEMAND COMPUTE?

Choice of public cloud, hybrid/cloud-on-premise and multi-cloud deployment models provide you with the ability to make adjustment to the levers of cost, security of supply and control over your resources.

You can consume compute resource like you would electricity: external cloud utilities for convenience; on-premise for add security of supply; and the edge-computing like an additional battery power pack for location independence and add reliability.

Under these conditions, it becomes less critical to wonder where and how you will consume compute resource. And, instead, you can focus on the more pressing question of how to innovate your business—now that computing resource is not an inhibit and, instead, an enabler.

SECTION6 ON-DEMAND COMPUTE

A transition into a fully cloud-based environment solves the on-demand compute problem. But it's often not a good immediate choice for a variety of other reasons.

SECTION6 works with you to find the optimal architecture, including the use of containers and container platforms for the best on-premise, hybrid cloud, and multi-cloud and edge compute strategy.

What is important, and where SECTION6 can make a further difference, is ensuring you are capable of moving workloads to different compute environments with ease. We establish the DevOps pipelines that include infrastructure defined software, automated testing and hands-free deployment and monitoring. Wherever the workload.

IMAGINE – YOU, i4.0, AND ON-DEMAND COMPUTE

Imagine being able to choose where your compute resources are located based on business needs rather than being restricted by physical constraints.

» Optimise your computing to provide the best client experience.

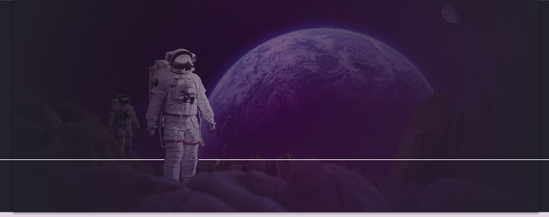
» Move the compute resource closer to the user for added speed and resilience.

» Centralise what you need for security and control.

» Burst out into the cloud to satisfy peak demand.

Imagine compute as a utility that enables your Industry 4.0 strategy.

Industrial *IOT*



CORE CAPABILITIES

Industrial IOT

The nervous system connecting the physical and vital organs of industry to the digital world

WHAT IS INDUSTRIAL IOT?

IoT (the Internet of Things, without the "Industrial") encompasses embedded sensors, software and other technologies to connect and exchange data with other devices and systems over the Internet.

IoT applications started by focusing on deliver convenience to mass market consumers. Now *Industrial* IoT (or IIoT) reflects a step-up from consumer convenience into the mission-critical industrial applications IoT devices.

IIoT devices monitor and control physical mission system through real-time automation, including through the application of cognitive automation. IIoT applications demand greater resiliency and security.

WHAT IS ADDRESSED BY INDUSTRIAL IOT?

The monitoring and control of physical infrastructure is made easier through smart sensors and actuators, (a “mover” of other things) remotely accessed, monitored and controlled.

Applications include those environments where physical assets and infrastructure play a significant role; agriculture, healthcare, manufacturing, transportation and utilities. And also, for those organisations that can see an opportunity for physical automation where once a human completed a task. Such as border agencies who now employee many smart-gates where once they had a few customs officers.

WHY INDUSTRY 4.0 AND INDUSTRIAL IOT

IIoT is the foundation technology for those ecosystems that, to date, have not benefited from technology beyond basic automation.

IIoT is the realisation of a cyber-physical ecosystem, where devices no longer work autonomously but are now part of an extensive network— sensing and sharing information. Where once a machine operated alone, now it is a node in a vast network of sensors. These machines share and act on information in harmony with other devices in their ecosystem. All working together to achieve multiple and joined up goals.

Smart cities improve the flow of traffic. Smart factories are continually optimising their processes for quality and cost. While both are plugged into smart electricity grids that have increased resilience and reliability.

SECTION6 INDUSTRIAL IOT

SECTION6 work within your IIoT strategy and with your IIoT device provider, along the dimensions of:

Platform: By leveraging on-demand computing options, we meet the IIoT platform need to be reliable and resilient to failure, scalable and secure from threats through the optimal mix of on-premise, edge and cloud computing;

Adaptability: The platform is further enabled to support frequent modification through automated testing and hands-free deployments made possible by container technologies and the definition of infrastructure through software;

Integration: Our agile integration capability integrates your network of devices into your network of software systems, helping to make them smart; and Application programming: applying our software skills to the core application of your IIoT strategy.

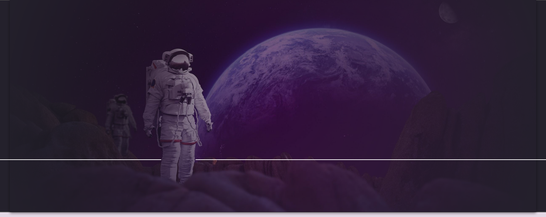
IMAGINE – YOU, i4.0, AND INDUSTRIAL IOT

Imagine your physical assets and the systems they are part of—adjusting to changes in their environments, including their own health.

Instead of running to failure, machines dynamically adapt their control algorithms to compensate for worn parts, communicate their status and allow other machines to compensate for their degraded performance. While also scheduling a maintenance task.

And if you are not using machines now, imagine where you could.

Replace the drudge of what makes up part of your peoples work—and redeploying them to improve the quality of what you deliver to your customers.



Cyber security

Protecting your investment internally, externally and along your software supply chain.

CALCULATING LOSSES RESULTING FROM SUCCESSFUL CYBER ATTACKS

Losses that an enterprise will incur as a result of a successful cyber attack are difficult to calculate. But that is not because they are likely to be small.

Consider that loses will include direct and indirect cost through reputation and brand damage, lost opportunity costs, remediation costs, plus the risk for industry damages and, increasingly, ransom.

WHAT IS CYBERSECURITY?

Cybersecurity protects against threats to information and physical devices in the i4.0 network.

Information security protects against threats to data. Cybersecurity includes information security and protects devices (IIoT) whose value is not just in any data and information they have but in the physical tasks they may perform.

WHAT IS ADDRESSED BY CYBERSECURITY?

As Industry 4.0 accelerates, so too does the surface area of your technology footprint — On-Demand Compute and IIoT expand the threat vector to bad actors and cyber attacks. Plus, other vectors of aggression are also known to be coming from your software supply chain.

Information security remains a critical activity to help prevent such attacks, or, if prevention is not possible, to analyse and resolve issues and then prevent them from happening again.

But as more devices attached to our networks and more software is built and provided by external parties, more entry points are available to bad actors.

We can choose to put our heads in the sand and avoid their use, or, we can instead rise to the challenge of protecting them. Cybersecurity protects against threats to information and physical devices in the i4.0 network.

WHY INDUSTRY 4.0 AND CYBERSECURITY

Guaranteeing security at scale in the decentralised systems of Industry 4.0 requires an ability to address security through software definition and automation.

As already described in this document, DevOps helps address the complexity of software development and IT operations.

In Industry 4.0, DevOps is extended to DevSecOps to address application and infrastructure security from the outset. It also means automating security gates to keep the DevOps workflow from slowing down, selecting the right tools to continuously integrate security and paying attention to the threats and security of your software supply chain.

Importantly, DevSecOps builds on the cultural changes of DevOps to integrate the work of security teams sooner rather than later.

SECTION6 CYBERSECURITY

The average enterprise has millions of lines of software code. But eclipsing this code is the combination of: the open-source software they use; their vendors supplied software products; the open-source their vendors use; and their suppliers' code; and so on. This is a vast network of exploit opportunities.

SECTION6 helps you address these and other vectors for attack with our Dev[Sec]Ops capability—combining supply chain security tools, embedded security practices, security and test automation with more frequent deployments and shorter times between code commits and production running code.

Faster and more frequent deployments are what the business wants to be competitive. But also, these are the same efficiencies critical to the success of cybersecurity.

IMAGINE – YOU, i4.0, AND CYBERSECURITY

Imagining an industry 4.0 strategy without addressing cybersecurity at the same time is to imagine a nightmare scenario.

Instead, imagine efficiencies from DevSecOps that deliver both business benefits and address security at the same time.

If all business activity *is* reduced to money, then DevSecOps is about

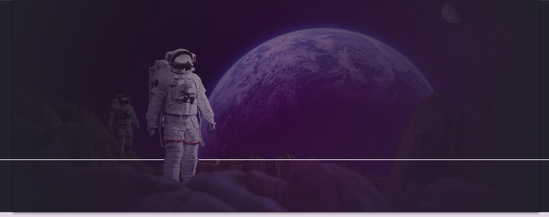
» Dev—building functionality to increase revenue;

» Sec—avoiding financial losses (see insert, left); and

» Ops— reducing cost through efficiencies.

Imagine making a business case for DevSecOps expressed in monetary term. Terms better understood by those that hold the purse strings.

Agile *Integration*



CORE CAPABILITIES

Agile Integration

Machines, devices, sensors and people connected and communicating fast and securely.

WHAT IS AGILE INTEGRATION?

Agile integration combines otherwise disparate islands of data, devices (IIoT) and software functionality through microservices inserted between software services, with minimal disruption.

As an architectural approach, it replaces older patterns that resulted in monolithic solutions—platforms that are slow to respond to changing needs and difficult to resource because of centralised, specialised and scare resourcing requirements. Aigle integration builds on the principles and practices of agile software development. It uses an architecture that supports agility by decentralising both the executing platform and the human resources.

Work is, instead, done by the people closest to the technologies that need to be integrated—people who are better placed to make decisions faster and complete work more efficiently.

WHAT IS ADDRESSED BY AGILE INTEGRATION?

Three core capabilities of agile integration that work together to create an overall integration strategy and deliver benefits are:

Distributed integration means flexibility to adapt by deploying functionality where required and scaled as needed.

APIs allow businesses to extend their knowledge assets and maximise their business value through internal and external (ie. customer, partner) consumption. APIs also reduce the complexity of integration and improve collaboration.

Containerised applications benefit from on-demand compute by being capable of deployment in hybrid environments, on-premise, or in private or public clouds.

WHY INDUSTRY 4.0 AND AGILE INTEGRATION

Within an Industry 4.0 strategy, Industrial IoT (IIoT) and Cognitive Automation are where many investments will be made. These, in turn, will use On-Demand Compute resources and have their Cybersecurity concerns addressed in a Dev[Sec]Ops capability that will deliver software faster and to a higher quality. IIoT and Cognitive Automation add mores layers of information and complexity of management through varied technologies, larger deployment networks and security risks. And few of these technologies come with inherent mechanisms for agile and secure integration.

Agile Integration is there to overcome the challenges of Industry 4.0 interoperability. Interoperability of IIoT devices and solutions to cognitive automation and other existing [back and front office] systems.

SECTION6 AGILE INTEGRATION

Successful Agile Integration starts with an agile delivery capability. SECTION6's DevOps capability is critical to this and is enhanced further with SECTION6's Agile Delivery services—for when you are still maturing or lack capacity.

We apply the agile delivery method to the architecture of the integration platform. Bring our experience and capabilities in containers and container platforms (OpenShift), messaging services, microservices and API's. When built, services are deployed to the best computing environment for the job—on-premise, cloud, hybrid and multi-cloud. With infrastructure defined through code, your ability to deploy, reconfigure and deploy again (and at speed) is further enhanced—making for a genuinely Agile Integration service.

IMAGINE – YOU, i4.0, AND AGILE INTEGRATION

Monolithic ESB (Enterprise Service Bus) platforms have become a bottleneck and not the promised enabler.

Agile Integration re-imagined Integration and sought to overcome the issues of centralised technology that does not keep pace with other technological advancements in the enterprise, and a centralised team with resources working to a different schedule, rhythm and speed. None of which worked for the business as a whole.

Imagine instead an Integration capability that harnesses the best of the modern practices of DevOps and Agile and the technologies of On-Demand compute. Do this so that you can quickly and easily integrate your IIoT, Cognitive Automation and the host of other systems you already have. So that Integration is reliable, scalable, secure and adaptable, at speed.

Customer *Case Studies*

How SECTION6 has helped businesses with their Industry 4.0 strategy

SECTION6
ON MISSION

New Zealand Customs Service

CASE STUDY

Agile Integration

Machines, devices, sensors and people connected and communicating fast and securely.

NEW ZEALAND CUSTOMS SERVICE
TE MANA ĀRAI O AOTEAROA

WHO IS NEW ZEALAND CUSTOMS SERVICE?

The New Zealand Customs Service protects and promotes New Zealand through world-class border management—protecting the country, advancing the economy, promoting international trade, collecting Crown revenue and preventing dangers and threats from entering New Zealand.

The Crown agency is responsible for ensuring that lawful travellers and items can move across the border as smoothly and efficiently as possible and operates in every location in New Zealand where there are international departure and arrivals.

WHAT WAS THE CHALLENGE?

eGate is an automated self-service border control system located at immigration checkpoints in the departure and arrival halls in New Zealand international airports. eGats allow the passport holders of many countries to clear immigration controls more rapidly and enhances travel security by performing passport control checks electronically

The original eGates platform was difficult and costly to manage, delivered poor business value, and was inherently inferior in its ability to support innovation and adaptation to new business requirements. The platform also lacked the reliability and resilience expected of a mission-critical service.

Together this amounted to a significant risk that stood in the way of New Zealand Customs Service's ambitions for a world class eGate platform—servicing New Zealand's border security now and into the future.

WHAT WAS ACHIEVED WITH i4.0

SECTION6 redesigned and rebuilt the eGate platform using Industry 4.0 technologies, practices and incorporating the otherwise promising but under utilised IIoT robotic devices (the eGates),

All infrastructure was redefined through software and subjected to the same automated testing and cybersecurity practices that all code now follows.

DevOps, hands-free deployment and monitoring have enabled fast, frequent and reliable platform updates. This gives the business the ability to respond to new risks more quickly while not compromising reliability, scale, and security of the solution.

Importantly, the combination of Agile Integration and On-Demand Compute, have decoupled and decentralised key solution elements. The existing data centre and network used by the eGates deliver below what is required for high availability. But by using On-Demand edge computing and localised data caching, the network and data centre disruptions have been overcome so that required availability is provided without compromising on security.

At the same time, the speed and accuracy of automated decision making have improved such that the eGates are now being used extensively and with additional classes of people.

An Industry 4.0 enabled border customs solution at the New Zealand Customs Service

27% Increased passengers through the eGATEs

13% Reduction in manual labour for New Zealand Customs' staff

40% Overall efficiency gain for New Zealand Customs Service delivered by SECTION6

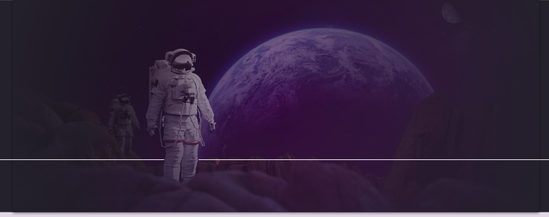
SECTION6 ON MISSION

Services

How we enable and deliver Industry 4.0 capabilities

SECTION6
ON MISSION

SECTION6 *Services*



Because your business and technology world keeps expanding, you need to match it with innovative and mission-ready software and services built from that same accelerating universe.

DevOps *Services*

Use our DevOps services to build the fabric of your new universe so that your software can reliably adapt and expand as your business does.

Use or DevOps services to build your DevOps capability.

Software *Development*

We match the challenge of creating your next unique and new world experience with our Software Development project, agile leadership, and collaboration skills and experience.

Use our Software Development services to build your imagined new world.

Product *Development*

When one new world is not enough, and you see a future of repeated success. Build new worlds for your customers or continually transforming the world you have created for all of its inhabitants.

Use our Product Development services to take and test ideas, evolve them and make your solutions scale and be capable of adaptation
as you grow.

Managed Services *& Support*

Post-launch use proactive services to avoid the need for a spacewalk. But if the unexpected happens, we are ready to don a protective suit and get out of bed to make sure your investment keeps flying.

Proactive maintenance and on call support 24/7.

Technology *Advisory Services*

Use our Technical Advisory services to explore existing and new worlds. Technical due diligence and reviews with recommendations and a roadmap on how to execute on the advice of professionals.

Technical advice that can lead you to do more or avoid the risk by helping you do less.

Software *Subscriptions*

Orbiting what you build is other vendor's software. Software Subscriptions Services help you procure the smallest orbital footprint to satisfy your mission's needs.

Competitive pricing with knowledge advice on the correct use and footprint of what you need.

A quick look at DevOps

Imagine what DevOps can do for you at the core of your technology strategy.

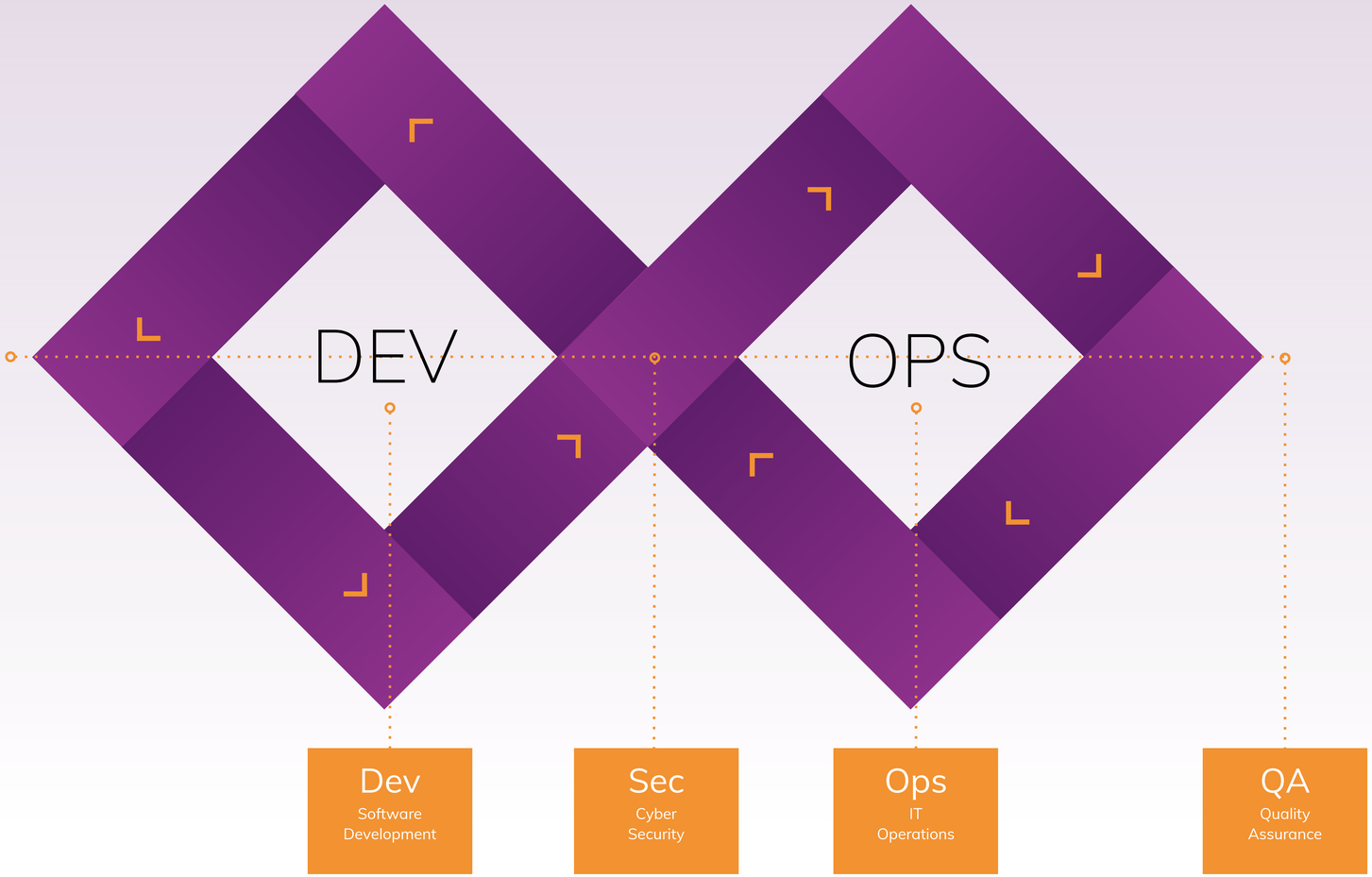
Imagine a world where Product Owners, Development, QA, IT Operations, and Security work together. Where they not only help each other, but also ensure that the overall organisation succeeds. By working toward a common goal, they enable the fast flow of planned work into production (e.g. performing tens, hundreds, or even thousands of code deploys per day), while achieving world-class stability, reliability, availability, and security.

The text above is how the DevOps Handbook (Gene Kim et al.) opens and describes the genesis and goals of the DevOps practice.

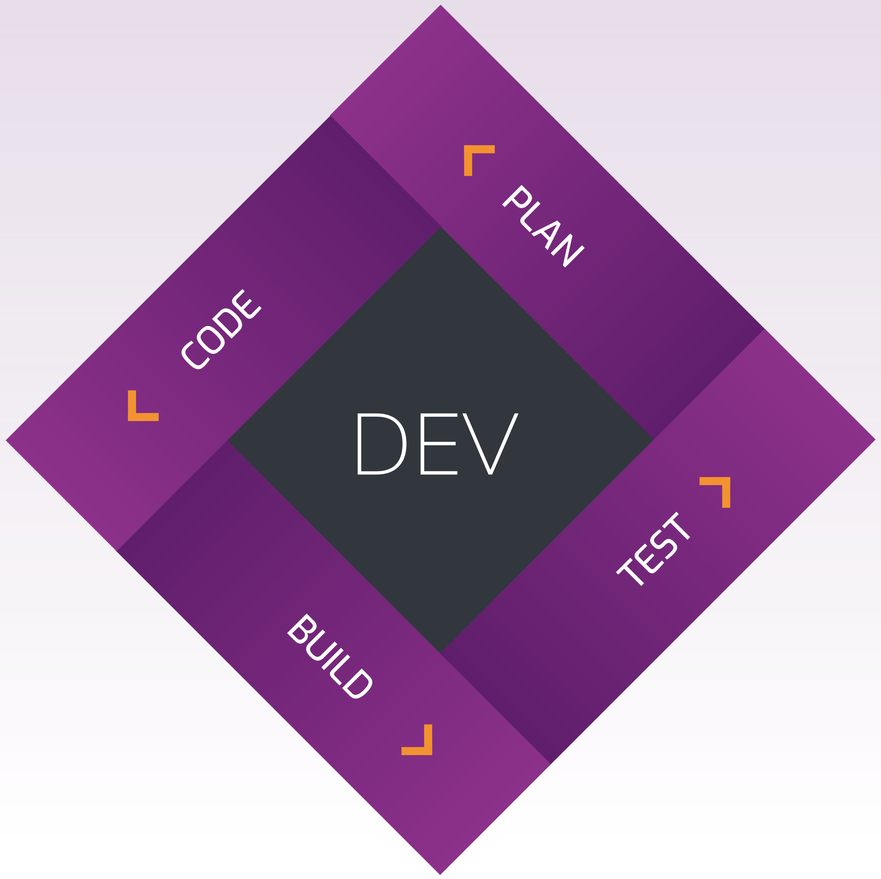
Once imagined, this practice has become a discipline, tools, and mindset that translates into collaboration and accountability once imagined.

DevOps has been adopted and proven to work across many applications, industries, software development projects, and product development and their operation.

DevOps is the practice SECTION6 follows to deliver what our clients need—high-quality development and operations—reliable, scalable, secure, and adaptable. So that they, in turn, can create their world-class capability.



What is *Development?*



Planning

Planning is a critical activity for successes. It happens at the outset of development, and at the beginning of every sprint. Work is collected in a backlog and prioritised by you and the team. In sprint planning, the team plans to prioritise work items based on capacity, capability, and complexity.

Coding

We select and apply the technical capabilities to the needs of the work as required. We can do this because our people are proficient in many different technologies, languages, and deployment environments.

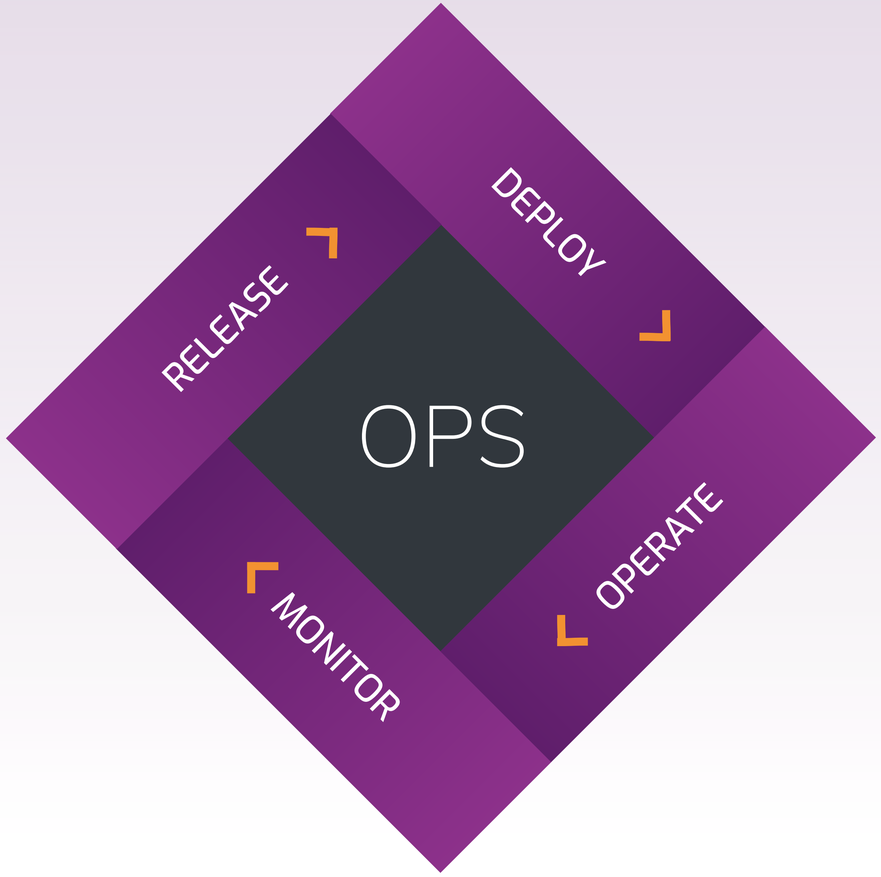
Building

Completed code is compiled as a deliverable artefact and includes automated tests. We define the infrastructure and network configurations as software. This means they have the same rigours applied to them as other software: secured, versioned, audited, and automated tested.

Testing

Automated software testing delivers a higher quality in product releases and updates at a much higher speed and frequency than is otherwise possible.

What is *Ops?*



Releasing

After passing automated testing, the code moves into a further test and staging environment for integration and more complex functional testing. In a fully automated release environment, this process can happen on demand, and often hundreds or thousands of times a day.

Deploying

Deployment into the production happens after all tests, automated or otherwise, are complete and are successful. Here final checks on the origin of any external dependencies, particularly open-source code, protect you against software-supply-chain attacks. Ultimately, faster deployments mean a better customer experience and the ability to keep your platform secure and reliable.

Operating

When code is running in production, we commit to keeping it operational, matching your SLA. And in keeping with DevOps — the team that built the code supports the code. This accountability and first-hand knowledge of the environment provides for better support. It is enabling faster resolution times and also the motivation and permit to prevent the problems from repeating.

Monitoring

Accurate real-time monitoring and alerting identify issues — resulting from unexpected outages or unusual usage profiles. Any problems raised manually through support channels trigger a support response. At your option, we monitor these channels 24/7/365 and respond with the same DevOps people, thus ensuring faster resolutions.

DevOps Delivery *Services*

DevOps Delivery

DevOps is a core capability and service that runs through and helps define SECTION6 services — continuous development and operations including on-call support.

WHERE TO USE DEVOPS SERVICES

The SECTION DevOps delivery services are for enterprises and product organisations that desire to either modernise their development practices or mature an existing DevOps capability—wishing to create more capacity to scale their software development and IT operations further.

SECTION6 helps these organisations with the work required to meet their software's functional and non-functional requirements and the definition of infrastructure and networks through software, automated testing, hands-free releases, and automated operational monitoring.

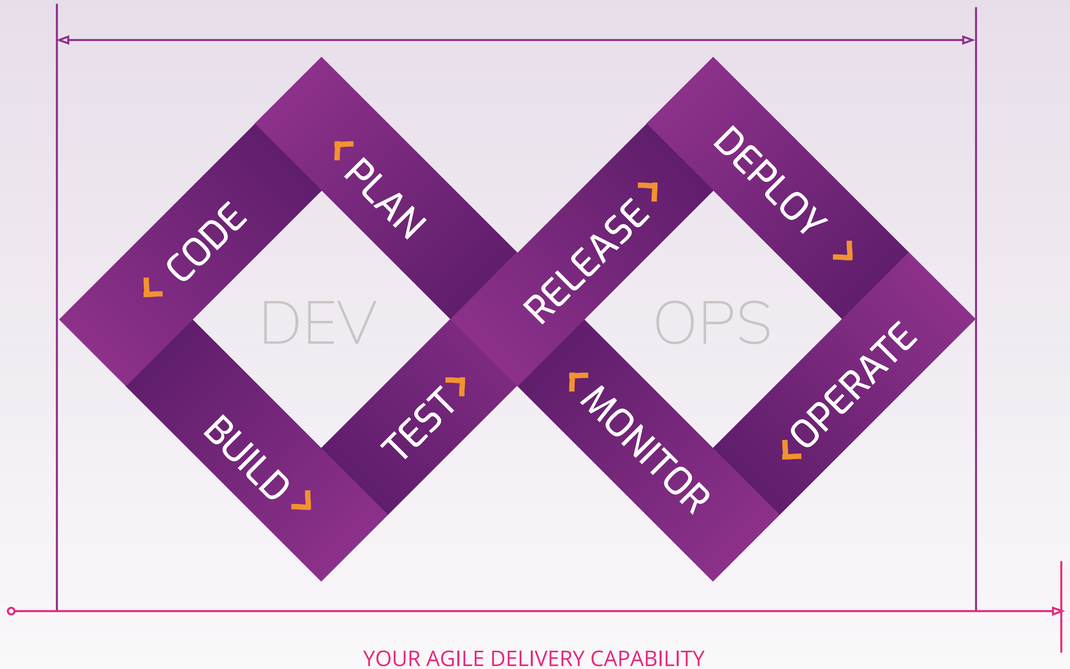
ADD-ON AGILE DELIVERY

If you lack a proven agile delivery capability or need additional agile delivery capacity — add-on SECTION6's Agile delivery leadership.

SECTION6 applies Scrum or Scaled Agile (SAFe) software delivery capability as a service add-on. Including project management, product owner, and scrum master capabilities to integrate our DevOps services into your wider business.

Notably, our agile delivery capability includes change management and facilitation capabilities — skills we know our clients need to help them transition from more traditional delivery methods into the successfully proven delivery methods of agile.

SECTION6 DEVOPS DELIVERY SERVICE



YOUR AGILE DELIVERY CAPABILITY
OR ADD-ON SECTION6'S AGILE DELIVERY CAPABILITY

Software Development *Services*

Software Development

Design and build software against your requirements and desired outcome.

WHERE TO USE SOFTWARE DEVELOPMENT SERVICES

Apply SECTION6 Software Development services when you have a software project and the deliverable does not include an automated IT operation.

Our Software Development services are used for short delivery time frames, or when an established DevOps capability exists — reflected in the standards and implementation of automated IT operations.

As with all of SECTION6's development services, we bring a breadth of skills and experience. With capabilities in multiple software development languages include Java, C#, C++ Rust, Python, Node.js, and Golang.

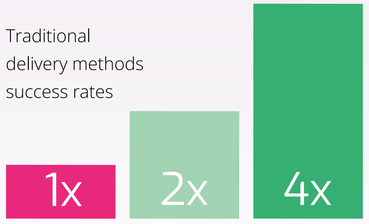
More generally, we apply the correct language to the problem. (And not the problem to any favoured choice of language.)

ADD-ON AGILE DELIVERY

As with our DevOps services, add-on Agile Delivery capability as required.

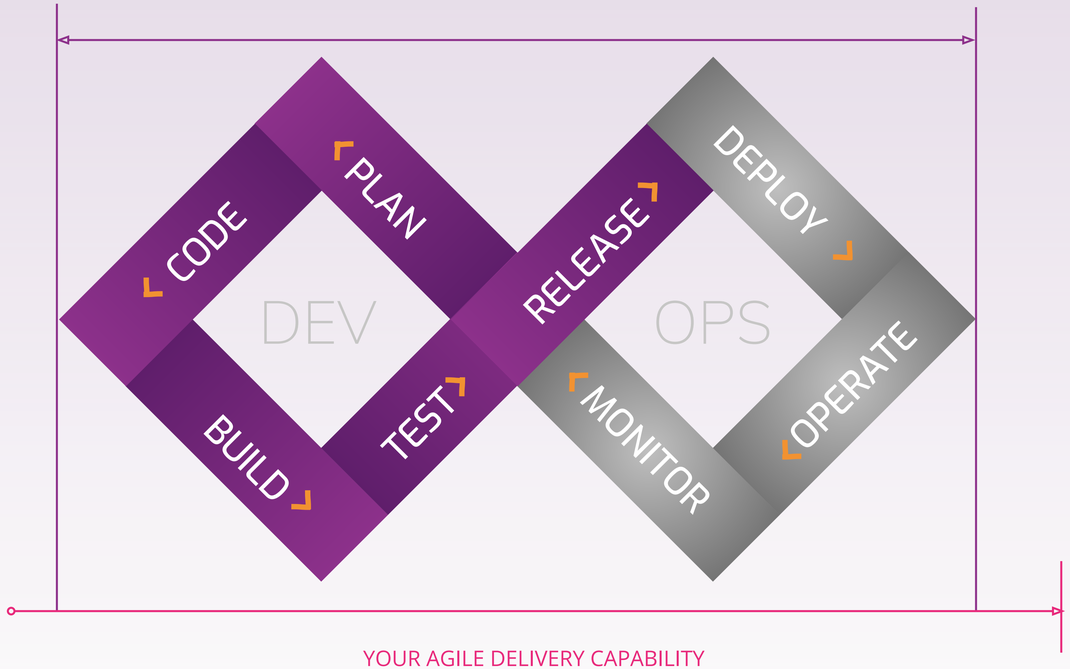
Agile delivery is found to increase software development success by between 2 and 4 times than traditional methods.

Agile delivery are between 2 and 4 times more successful



Source the Chaos report from the Standish Group

SECTION6 SOFTWARE DEVELOPMENT SERVICE



YOUR AGILE DELIVERY CAPABILITY
OR ADD-ON SECTION6'S AGILE DELIVERY CAPABILITY

Product Development *Services*

Product Development

Continuous business and technology innovation coupled with operational efficiency.

WHERE TO USE PRODUCT DEVELOPMENT SERVICES

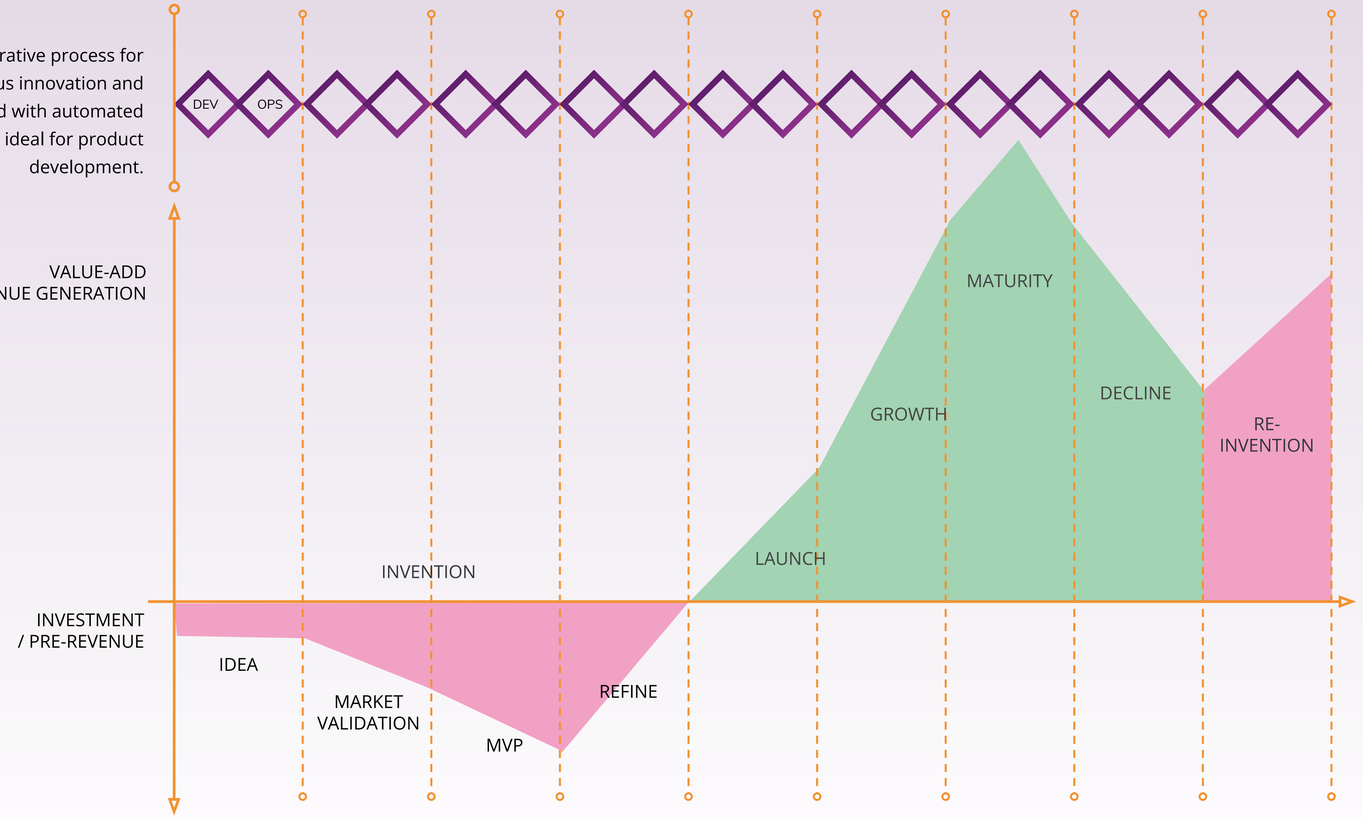
Investing in software as a ‘product’ and applying the additional life cycle activities (as illustrated) is as relevant to revenue and non-revenue ambitions.

Use SECTION6’s product development services when you expect to have a long-lived solution that must continuously adapt and evolve with the environment it’s serving.

For commercially driven organisations, adaption is reflected in new features to capture more market share and head off competitors.

While not motivated by money, Government organisations also need to continually adapt and respond to threats and opportunities within their sphere of responsibility.

DevOps’ iterative process for continuous innovation and deployment coupled with automated IT operations is ideal for product development.



Managed Services & *Support*

Managed Services & Support

Stand-alone proactive software maintenance to avoid failure and reactive on-call support for the unexpected

WHERE TO USE MANAGED SERVICES

Mission-critical system failure can easily result in financial losses that eclipse the investment that mature businesses otherwise make to avoid them.

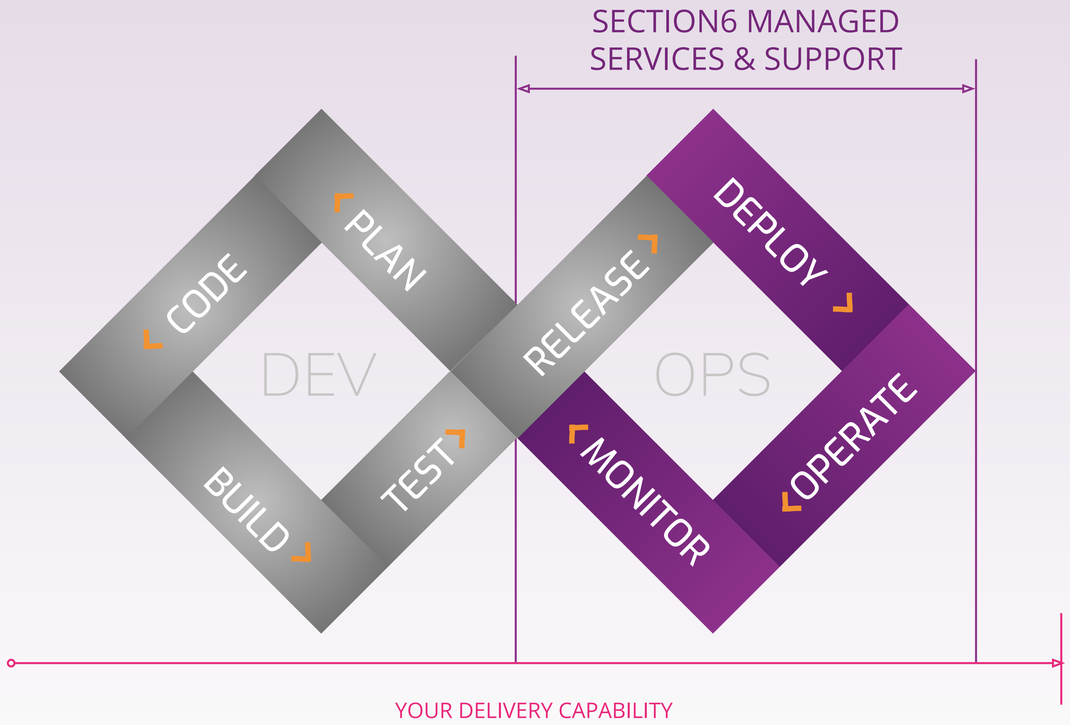
Potential losses include reputation and brand damage for commercial business, loss of public confidence for government organisations, lost opportunity, remediation cost, legal and industry damages, punitive damages, and increasingly the real risk and cost of ransom.

SECTION6 Managed Services includes proactive maintenance services, a program and a schedule of preventative maintenance tasks to ensure the underlying platform software remains current. This is essential to guard against the latest known issues and vectors from cyber attacks (many ransomware attacks are made possible because of outdated software.)

WHERE TO USE SUPPORT SERVICES

Knowing that preventive maintenance can't entirely guard against the unexpected, SECTION6's 24/7/365 on-call support provides peace of mind should you need to respond quickly to an issue, whatever the time. Our expert will respond within 15 minutes from a call or automated monitoring.

Support services are provided in tandem with Managed Services. In this way the likelihood of a support issue is avoided, support costs are lower, and the risk of a significant financial loss is prevented or mitigated in its magnitude.



Technical Advisory *Services*

Technical Advisory

Services for software and platform reviews, due diligence, tactical and strategic advice.

WHAT ARE TECHNICAL ADVISORY SERVICES?

SECTION6 technical advisory services leverage our board capability and experience in technology, its application, and the DevOps practice.

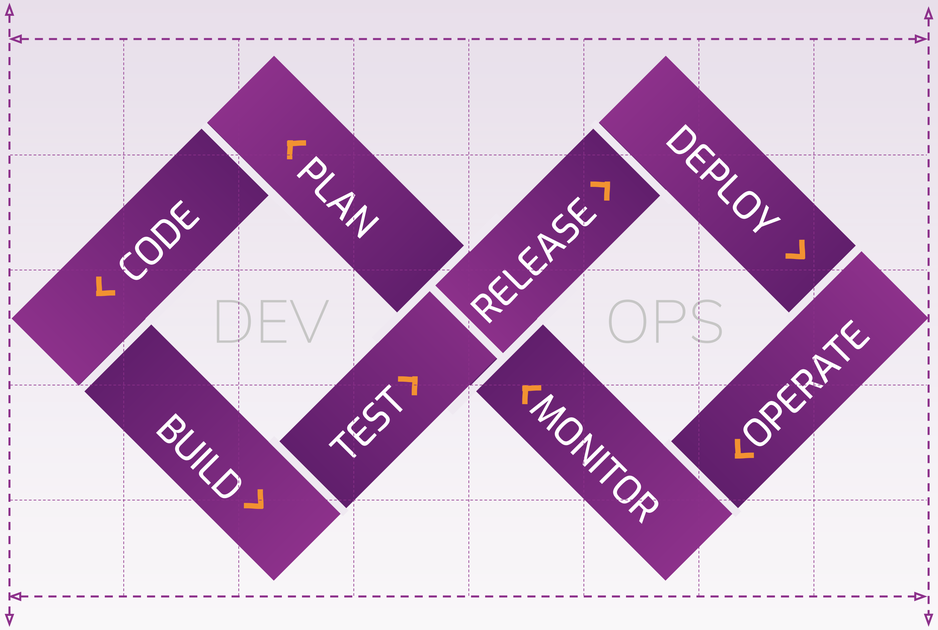
Further enhancing our skills and experience are the formal partnerships and training accreditations SECTION6 has with our key product vendor partner. We draw on the knowledge, relationships, and access to privileged information we may have through our partnership for your benefit.

WHERE TO USE TECHNICAL ADVISORY SERVICES

Apply technical advisory services to better judge whether to purchase someone else's technology, upgrade an older application, or make a new investment into a unique opportunity.

Due diligence, technology reviews, and DevOps practice reviews include recommendations and a roadmap on how you can execute on the advice of professionals.

SECTION6
TECHNICAL ADVISORY SERVICE



Subscription *Services*

Subscriptions

Procuring and managing the product subscriptions that underpin your investment from key vendors.

WHERE TO USE SUBSCRIPTION SERVICES

Our subscription service helps you procure specific technology products from partners that SECTION6 works with, and for which we have complimentary services.

What this means is we have expertise in the proper use of these technologies. We understand how they are being used, whether they are used and deployed optimally, and how you or SECTION6 might further optimise their use and deployment.

Additionally, we have visibility and expert understanding of the deployment and use of these subscriptions in your environment when we provide DevOps, Software Development, Product Development, or Managed Services Support services. This means that during these services, we can continually optimise subscription use.

ADDED VALUE

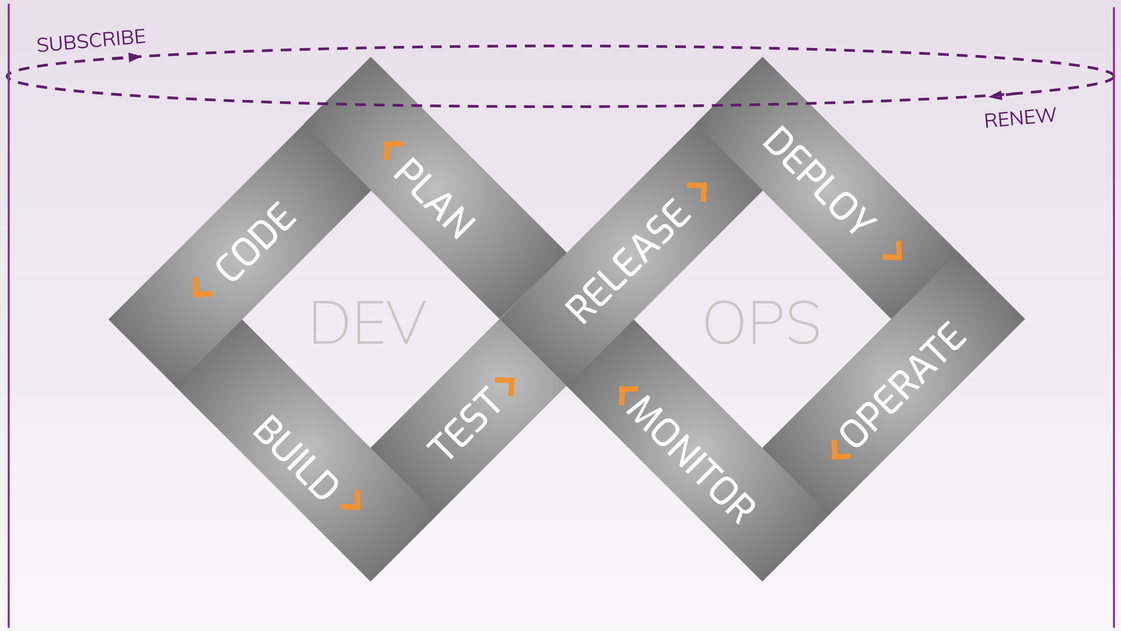
For many of the products, which we provide subscription services, the margin earned by SECTION6 is offered back to you as a service credit.

This means SECTION6 does not benefit from additional and unnecessary subscriptions. Instead, we are motivated by creating the best value for you while maintaining the integrity of your solution so that it continues to remain on mission; reliable, scalable, secure, and adaptable.

AVAILABLE SUBSCRIPTIONS

See the **Key Partners** section for a list of product vendor partners that SECTION6 provides subscription services for.

SECTION6 SUBSCRIPTION SERVICE



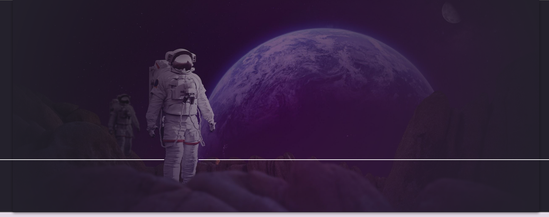
With or without our other services,
SECTION6's subscription procurement service is value for money

Key Partners

The partners that help us help you

SECTION6 ON MISSION

Key *Partners*



PARTNERS

We choose our partners that are leaders in each of their chosen areas of focus and capability. Together, with you, they enable us to imagine and build your i4.0 future.

Red Hat

As a leader in Open Source, Red Hat also leads the way in i4.0 innovation. Making their technology an ideal cornerstone for your i4.0 strategy.

As a Red Hat Advance Business Partner, SECTION6 helps you unlock Red Hat's potential.

Red Hat
Advanced
Business Partner
Solution provider

Elasticsearch

An analytics engine for all types of data, including textual, numerical, geospatial, structured, and unstructured—ElasticSearch enables cognitive automation by helping organisation bring together otherwise disparate information. From which automatic decision making can be made, at the [new] speed required of i4.0.

elasticsearch

Sonatype

Leaders in their area of cybersecurity—Sonatype is an essential modern cybersecurity capability. With Sonatype, ensure the security and integrity of your software supply chain. Avoid known threats and act more quickly to new threats by having SECTION6 integrate Sonatype into your DevOps process. The faster and more frequent you deploy the faster you can react to new threats.

sonatype

Confluent

Confluent enables real-time analytics critical to the success of most Industry 4.0 initiatives by collecting and analysing vast and complex datasets, especially from new data sources that traditional data processing software cannot handle. If "*Industry's 4.0's lifeblood is datafication — the transformation of events into data that can be stored digitally and used in real-time* ", then Confluent is your pathway to success.

CONFLUENT

EDB

EDB brings the power and flexibility of a relational database to your Industry 4.0 strategy. Untether yourself from those database technologies that are and continue to not work for you. EDB allows you to leverage on-demand compute through on-premise, hybrid-cloud, public, and multi-cloud deployments. EDB minimises deployment complexity without compromising on performance.

EDB™
POWER TO POSTGRES

IBM

IBM is a long time world leader in technology R&D and its production. Their investment into technology, including their recent acquisition of Red Hat, makes them more powerful than ever.

SECTION6 works with those customers who want to use the power of IBM to enable their Industry 4.0 strategy.

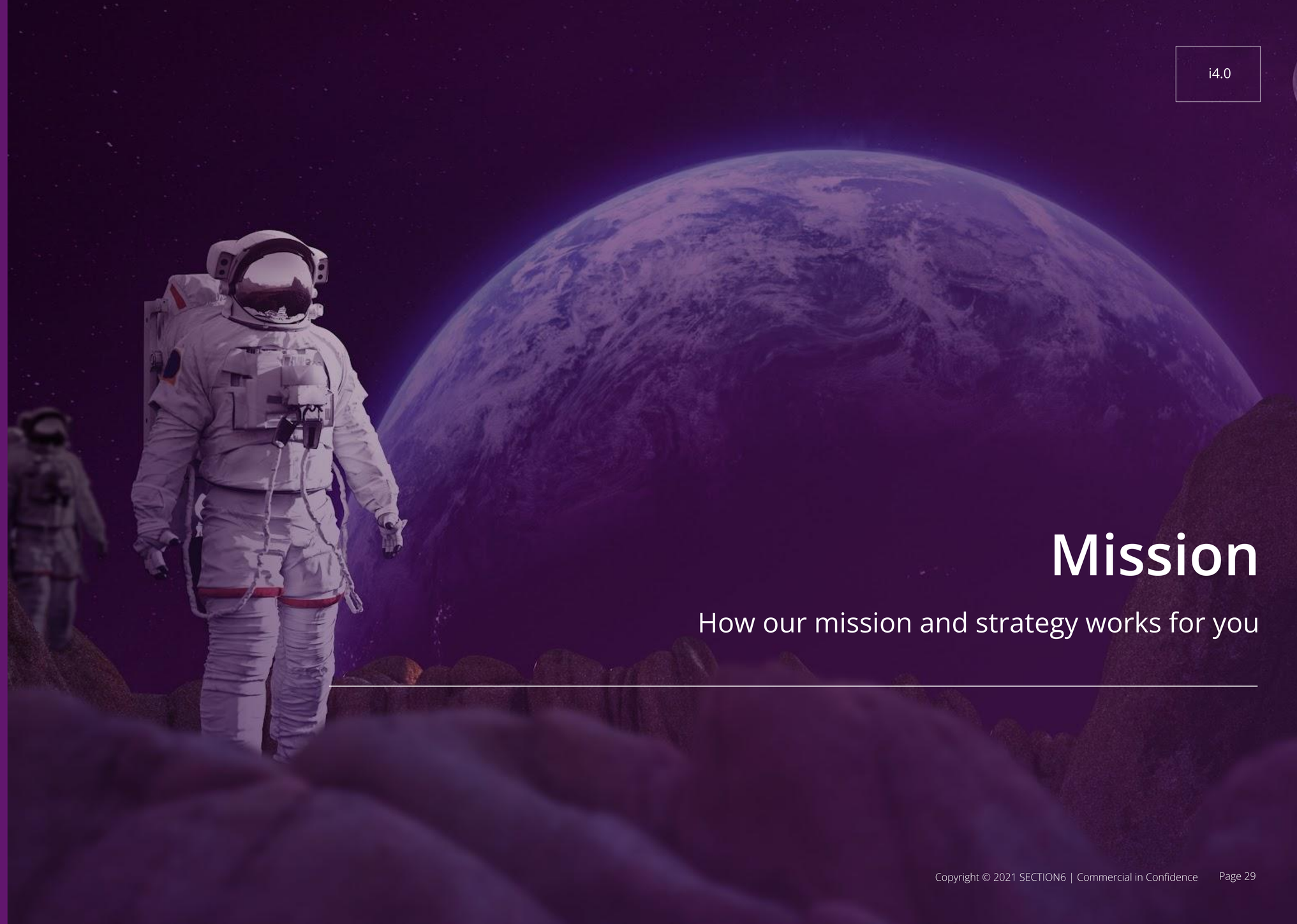
IBM

HashiCorp

Hashicorp enables the world's largest companies to deliver applications faster by having the technology that replaces manual processes and ITIL practices with transformative self-service automation inside of DevOps practices.

SECTION6 can help you unlock this power by helping you build your DevOps capability while also building your software.

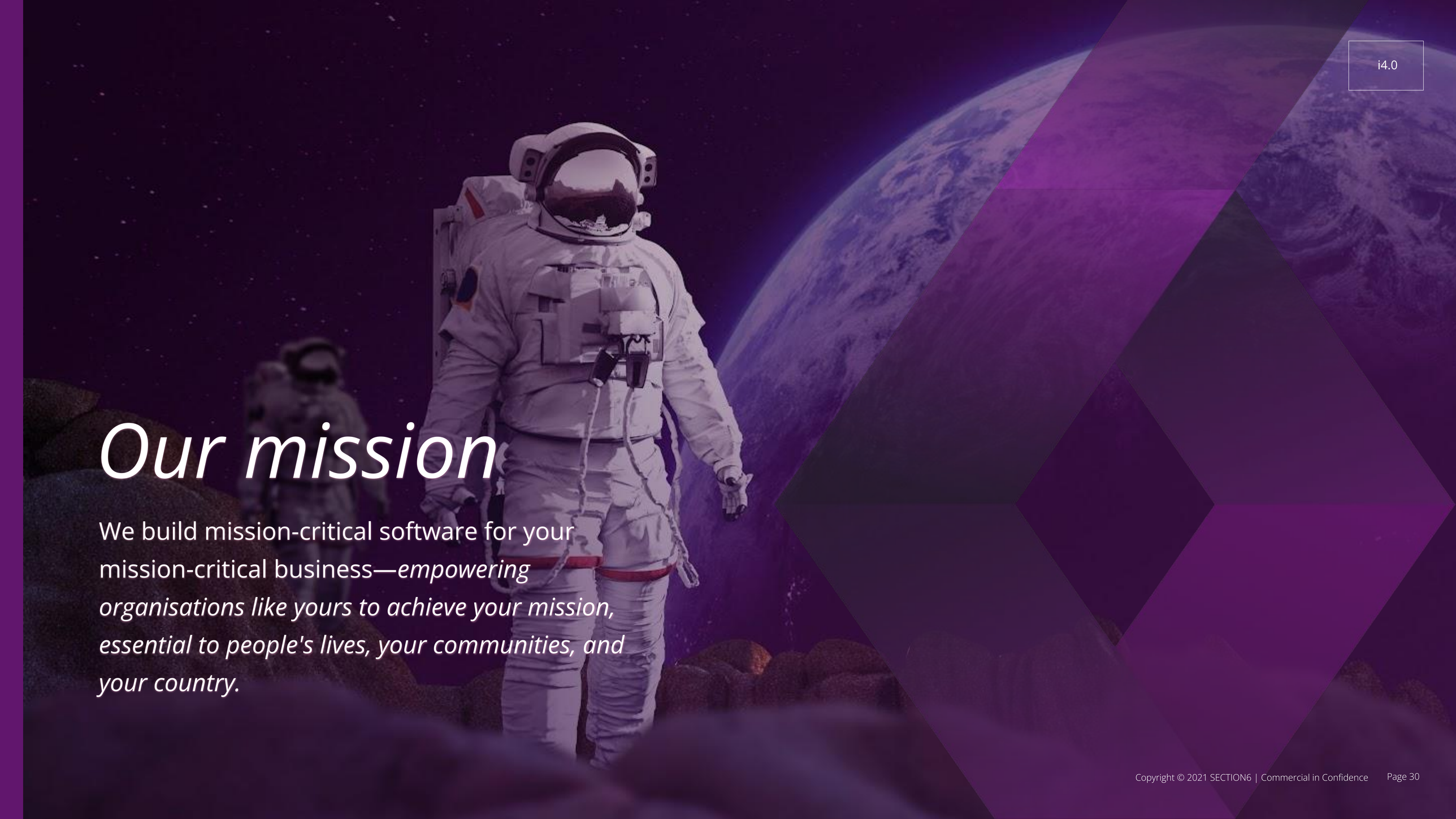
HashiCorp



Mission

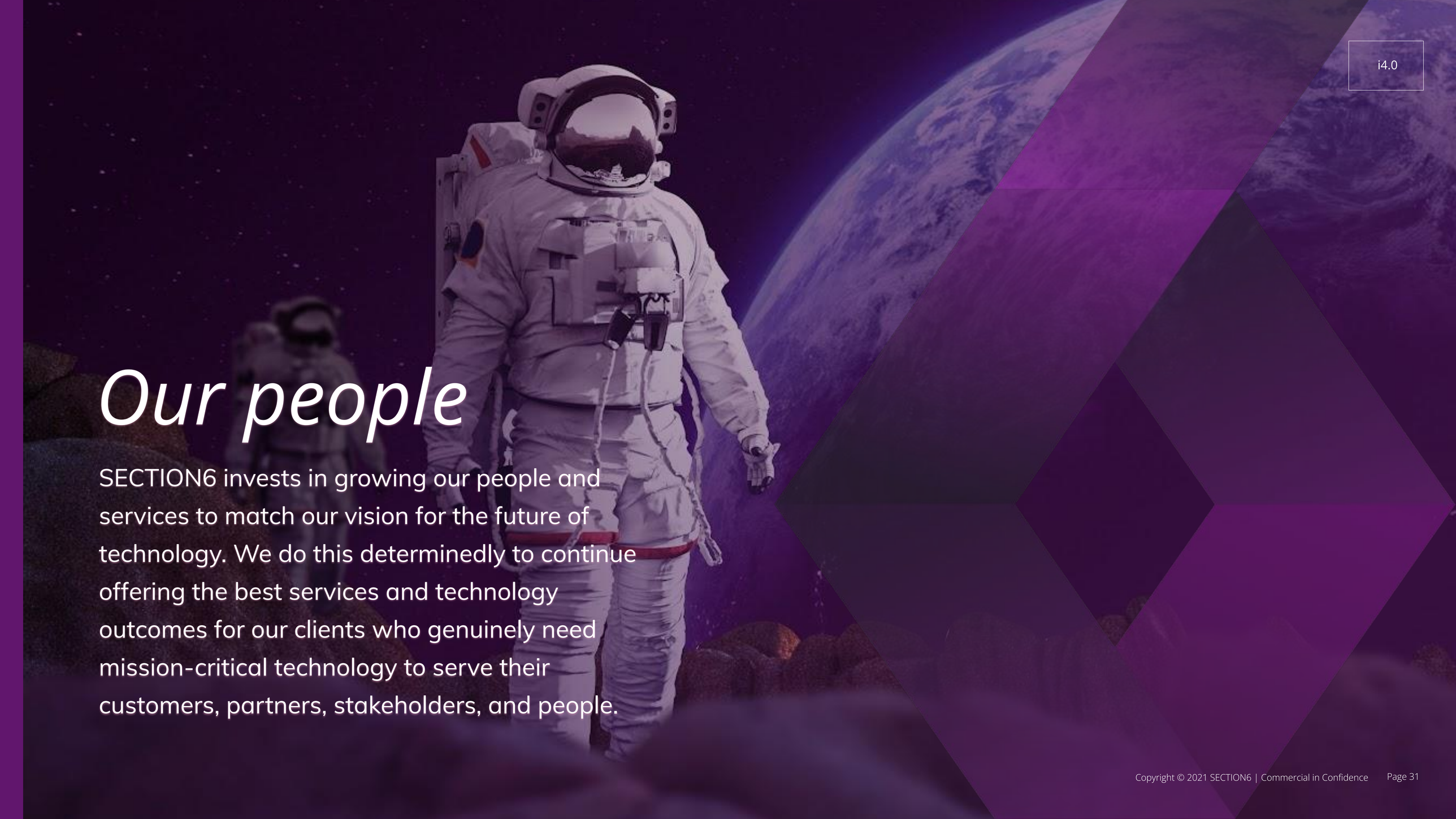
How our mission and strategy works for you

SECTION6
ON MISSION



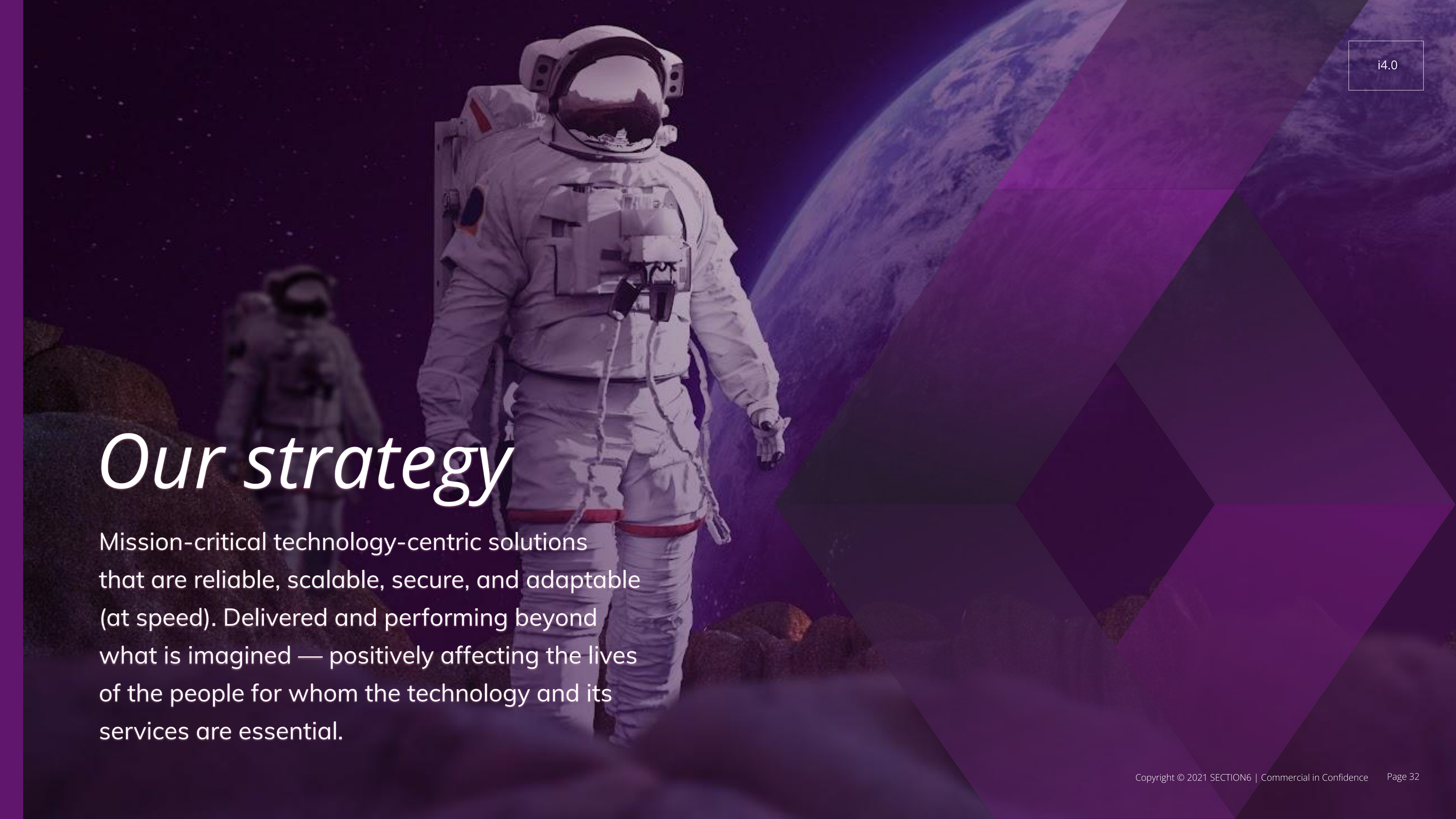
Our mission

We build mission-critical software for your mission-critical business—*empowering organisations like yours to achieve your mission, essential to people's lives, your communities, and your country.*



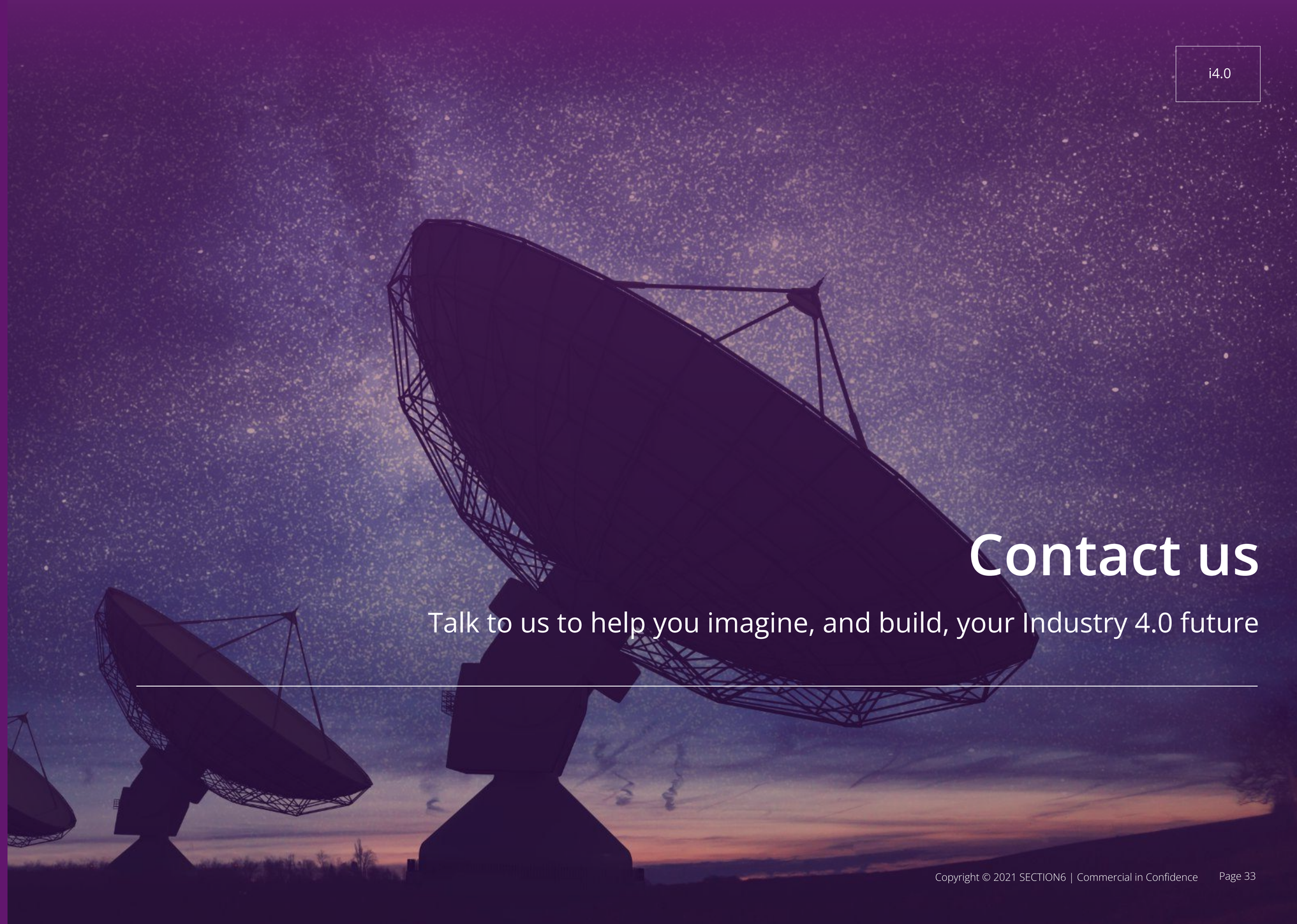
Our people

SECTION6 invests in growing our people and services to match our vision for the future of technology. We do this determinedly to continue offering the best services and technology outcomes for our clients who genuinely need mission-critical technology to serve their customers, partners, stakeholders, and people.



Our strategy

Mission-critical technology-centric solutions that are reliable, scalable, secure, and adaptable (at speed). Delivered and performing beyond what is imagined — positively affecting the lives of the people for whom the technology and its services are essential.



Contact us

Talk to us to help you imagine, and build, your Industry 4.0 future

SECTION6 ON MISSION

Auckland

Lvl 10, 21 Queen St
Auckland,
New Zealand

Clemens Berndt
+64 21 857 558
clemens.berndt@section6.io

Wellington

Lvl 6 State Insurance
Building, 1 Willis St,
Wellington,
New Zealand

Paul Armstrong
+64 21 225 4009
paul.armstrong@section6.io

Sydney

82 Hay St Haymarket,
Sydney, NSW,
Australia

Grace Curtis
+61 451 948 588
grace.curtis@section6.io

Manila

Paul Armstrong
+64 21 225 4009
paul.armstrong@section6.io