Codex AI Suite

The fast-track to artificial intelligence

Trusted partner for your **Digital Journey**

Atos

"Artificial Intelligence is one of the technologies creating waves of change that profoundly affect our business and financial models, organizational structures and operational processes. AI will have a significant effect on everyday life."

Contents

04 AI: it's time for implementation

05 So, what's stopping you?

06 Atos Codex AI Suite: a new fast track for AI

07 Creating Atos Codex AI Suite to make things simplier

08 Inside Atos Codex AI Suite

10 Atos Codex AI Suite in action

11 Next steps

AI: it's time for implementation

Artificial Intelligence has featured in our technology conversations for years. From the early neural network designs and expert systems of the 1980s; Big Blue's victory over Gary Kasparov in 1997; and the ubiquitous presence of smiley robots at trade fairs, AI has been on the periphery for a while.

But now things are changing.

AI is set to take up position at the heart of contemporary business technology. It becomes central to digital transformation. It is set to become a clear driver of business differentiation.

AI leaves the realm of academics, technology fanatics and science fiction lovers. It moves beyond the purely scientific domains with which it has been primarily associated until now.

AI enters the mainstream business and operational agenda for every forward-thinking executive team in every sector – from pharma to automotive, from transport and local government, from healthcare to telecommunications.

Why and why now?

Nothing ever happens for just one reason. The AI revolution is sparked by multiple cultural, technology and operational...

Digital mindsets

It doesn't matter whether we are driving cars, watching sport or assessing cancer risk, we expect to be informed, aided and influenced by apps and digital evidence.

Data explosion is not a cliché

We all know the data clichés – but they are true. In less than a generation we've moved from gigabytes to zettabytes and on to geopbytes. By the time you read this, there will probably be new one. There's plenty of data – but what are we doing with it?

Internet-of-Things is the new World to conquer

Machine-to-machine communications create a world in which technology slaves in the background, automated and invisible, leaving us to do what people do best.

Delivery got democracy

Cloud becomes the default and containerization takes off. Virtualization not only frees people from locations and boxes: it changes the rules of ownership, access and payment too.

Affordability is reality

The cost of intensive computing and massive storage are no longer business inhibitors. You don't need to spend millions on datacenters or super-computers to join the digital revolution.

Computing power makes almost all things possible

Just like data, computing power increases exponentially. G-flops become E-flops. Increasing parallelism and multi-core processors radically boost computing capacity – and that's before we even consider the emergence of quantum.

Analytics is new power

Analytics becomes a new science and a new profession – the media studies courses of the 1990s are being overtaken by data science. Algorithms aren't so scary any more.

So, what's stopping you?

We have a perfect storm of new technologies; a new confidence in what digital can do for us; and a growing curiosity for AI and cognitive computing. So, what is holding us back? What is inhibiting manufacturers, healthcare providers, retailers and transport service providers from embracing AI with energy, imagination and investment? In our early AI and data analytics engagements with clients, Atos has identified three recurring inhibitors – all of which are inter-related.

Fuzzy targets

Senior management teams are growing aware of the promise of AI. Unsurprisingly, many struggle to envision practical application - with identifying and defining specific and viable targets. It's largely unknown territory.

We need to be able to identify worthwhile AI scenarios, and we need to be able to at least set some realistic expectations regarding their outcomes. Particularly important, for the executive team, is the ability to understand how AI will impact the organization and its customers. When, for example, there is widespread suspicion of the impact of robotics on jobs, how can we ensure the workforce will welcome AI?

How can AI be employed in ways that bring us closer to our customers, and to sustainable and mutually beneficial relationships?

Skill shortage

Organizationally, we would normally expect AI initiatives to be passed back to the CIO team or to IT.

Data science and AI are emerging professional disciplines, but few organizations have either the skills or the management processes within their IT function needed to embark on AI projects while continuing to manage existing responsibilities within strict budgets. In addition, many data scientists are relatively young, and few can be expected to have real depth of knowledge of the sectors they serve. There is also a range of associated skills needed, particularly regarding integration with heritage data systems that fall outside the data scientists remit.

If you are paying data scientists, you want them to do data science. It is important to keep the burden of wider IT integration to a minimum.

Which criteria for selecting tools?

There is a growing choice of data science and AI tools available.

The challenge is not so much about choosing your preferred tools for individual activities involved in an AI initiative. It is about having a toolset available which spans the extended process, from identifying opportunity, moving on to initial experiment and exploration and continuing right through the implementation and ongoing management. The toolset must be able to handle machine learning too. A key characteristic of AI is the ability of an application to learn by doing and the tools you choose must support this activity.

Computing and storage requirements are not fixed, across this process. The toolset you adopt must reflect this, providing access to the heavy-duty computing needed to train AI applications during production and then rebalancing for the lighter computing loads of operation.

Atos Codex AI Suite: A new fast track for AI

Atos Codex AI Suite is an application toolset. It provides all the tools needed to scope, develop, roll-out and manage AI applications. Atos Codex AI Suite is particularly well-suited to AI applications with strong machine learning and deep learning components.

AI applications created and managed with Atos Codex AI Suite are platform-independent. This is a prerequisite for the success of any AI application created for today's business enterprises: no organization can afford the constraints, limitations and costs which result from binding AI initiatives to a single technology platform. By making Atos Codex AI Suite the foundation for AI initiatives, you gain four distinct and quantifiable advantages:

1 Accelerate development time

As with every business innovation, you need to shrink the time-to-benefit of any AI initiative. You need to grasp the concrete benefits in months not years. Atos Codex AI Suite is easy to use, and cuts learning time to a minimum.

Reusability and best practice are design foundations for Atos Codex AI Suite. Choosing Atos Codex AI Suite will put you on the fast-track to AI advantage.

2 Increase your productivity

The demand for data science already exceeds the availability of data scientists. Atos Codex AI Suite gives data scientists the tools they need to maximize productivity, aligning objectives for new AI application development.

With Atos Codex AI Suite, data scientists can store, retrieve and update applications in a secure shared environment. It is easy for them to derive new models from existing instances. In part, Atos Codex AI Suite boosts data scientist productivity by removing the burden of routine IT integration and testing, which become automated background activities.

Because Atos Codex AI Suite enables developers to offload compute-heavy training functions, it also helps minimize the risk to enterprise systems associated with inappropriate and unsustainable computing loads.

3 More precision

Atos Codex AI Suite ensures that your data science teams achieve the highest degree of accuracy in every AI initiative.

Data deep-dives make detailed problem-analysis routine. This helps ensure that the outcomes of your AI analytics deliver trusted, transparent and substantiated results.

4 Get affordable performance

The days of the vanity IT project are over. AI initiatives developed and implemented using Atos Codex AI Suite deliver on performance at transparent and affordable cost.

Atos Codex AI Suite is designed to deliver performance when it is needed. The compute-heavy demands of AI training can be met, for example, while the lighter demands of subsequent analytics execution are appropriately scaled. Operations will benefit from both on-premise and hybrid cloud delivery to ensure security while containing cost.

Through highly modular license models, your AI development teams will pay only for what they need. Accelerated development and increased productivity also make key contributions to cost-control in Atos Codex AI Suite-enabled AI initiatives.

Creating Atos Codex AI Suite to make things simpler

Atos has been an active innovator in AI, the Internet-of-Things and data analytics for a number of years. Our early engagements were largely project-based. We developed the software tools we needed because nothing on the open market offered the performance, breadth or multi-platform characteristics we needed. In 2016, we announced Atos Codex, the data-analytics, IoT and AI proposition of which Atos Codex AI Suite is now a key component.

Atos Codex

Atos Codex is a portfolio of services and products designed to accelerate and industrialize the enterprise adoption of the data analytics and related activities central to all serious digital transformation strategies.

Atos Codex spans data analytics, AI, deep learning and machine learning, cognitive computing and the Internet-of-Things. Atos Codex AI Suite is a key component of Codex when it is about cognitive capabilities.

Atos Codex places a strong emphasis on use-cases as a means to develop best practice and accelerate adoption. In order to deliver the most advanced use cases on multiple environments, Atos leverages Atos Codex AI Suite and Google Cloud Platform.

Excellent people with advanced data and analytics competency

Business outcome focused built on strong vertical expertise

Advanced Analytics and IoT Platform & Leader in super computing

Strategic key partners: DellEMC, Google Cloud, Siemens and ecosystem of innovators

Inside Atos Codex AI Suite

Atos Codex AI Suite is a modular and cleanly structured toolset for AI ideation, development and implementation. Atos crafted Atos Codex AI Suite to meet the professional requirements of our own team of over 4,500 expert data scientists. It delivers for them. It will deliver for you.

The structure and function of the Atos Codex AI Suite toolset comes as no surprise. You explore easily; you develop fast; you deploy securely. Atos Codex AI Suite is, built on three principles that are not yet common in the relatively new world of AI and deep-learning development.

1 Use-cases

Atos Codex AI Suite does not collect use-cases simply as a showcase of best practice implementations. With Atos Codex AI Suite, use-cases act as business accelerators in determining AI strategy, in identifying priority applications, and in taking idea to action and roll-out.

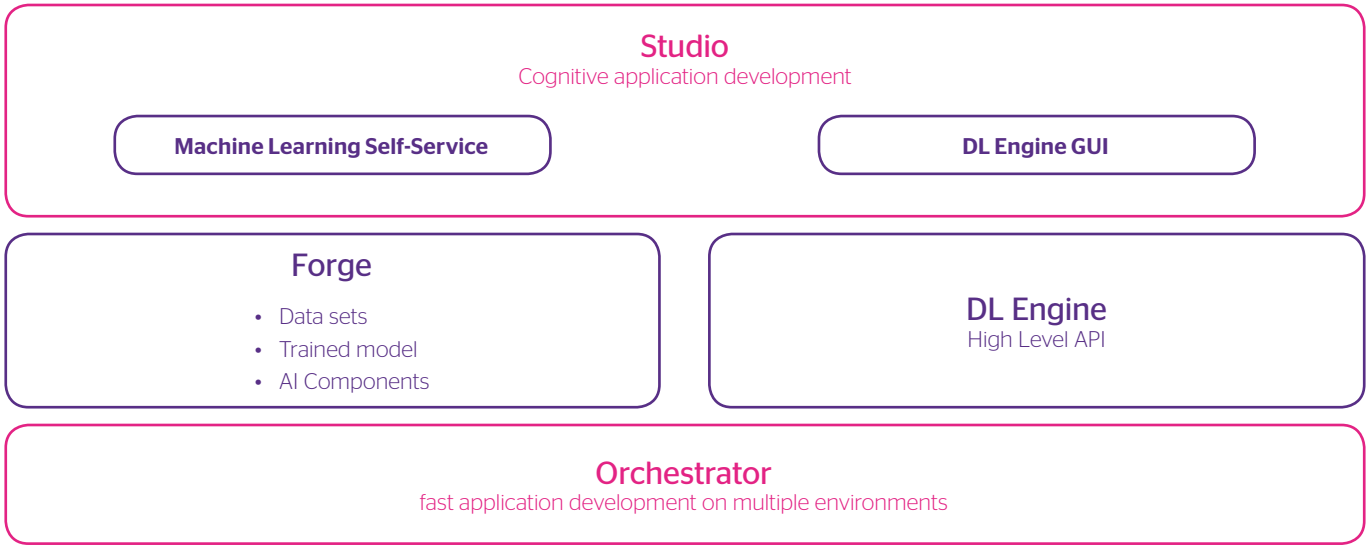
2 Offloading

AI and deep learning do not exist in a vacuum. Continuous ingestion of structured and unstructured data from an ever-increasing range of sources becomes the norm. You need your data scientists to be focused on data science. Atos Codex AI Suite, thanks in part to Atos' deep experience in integration, has a highly evolved set of supporting IT functions, automated wherever possible. By pushing work that does not directly use the skills of the data scientists into the background, Atos Codex AI Suite helps boost productivity while reducing cost and risk.

3 Platform independence

Your AI applications will only deliver to their potential if you can deploy to multiple-platforms. This is easy to specify. It's exceedingly tough to do.Atos Codex AI Suite ensures the highest degree of platform independence. This allows you to deploy your AI applications to Amazon Web Services or Microsoft Azure, for example, without re-engineering. You can also deploy, if appropriate, to Atos' own high-performance computing and cloud platforms.

Four functions to accelerate the developement of AI applications



The Atos Codex AI Suite toolset has three distinct functional areas – and one common objective: to enable forward-thinking enterprises to accelerate their development and implementation of AI for direct business advantage.

Atos Codex AI Suite actively encourages collaboration and participation. The Studio, for example, establishes a shared space in which the extended team of business analysts, data scientists, application architects and IT managers can work together. By encouraging active collaboration, Atos Codex AI Suite helps ensure that business and IT requirements remain strictly aligned.

By making Atos Codex AI Suite the foundation toolset for AI initiatives, you will rapidly build the trained models needed to continuously analyze and act on continually evolving data streams. These prescriptive analytics tools are themselves continually maintained and refined thanks to high-performance computing resources..

Atos Atos Codex AI Suite, along with the extended Atos Codex proposition, is being continually extended and refined to take advantage of emerging technologies and changing business, legislative and cultural conditions.

Gartner estimate that by 2022, over half of all data and analytics services will be performed by machines not people. Atos Codex AI Suite prepared you for a future in which robotics dominates effective business and operational decision-making.

The Studio

The Studio enables the extended project team of data scientists and business stakeholders to assess and scope AI opportunities.

Data scientists use component libraries to accelerate prototypes and rapid proofs-of-concept.

As AI applications take shape, a dedicated deep learning engine executes the iterative and compute-intensive training required to prepare the application for actual use.

The Forge

The Forge is built on the principles of re-use and best-practice, helping accelerate production while minimizing cost and risk.

The Forge is also a highly collaborative workspace, making it possible for extended specialist data science teams to work together to best effect.

The Forge provides structured access to a growing repository of analytics components, encouraging data scientists to re-use and adapt for maximum productivity. The Forge makes both analytics models and their associated data sets available to development teams, subject to security and compliance conditions.

The Orchestator

The Orchestrator is the machine which makes the magic happen. In the past, application development teams could spend 10% of their professional lives doing something useful, and 90% trying to get it to work in the real world.

Atos Codex AI Suite stops that dead. The Orchestrator takes the AI instances conceived in The Studio and industrialized in The Forge and manages their full implementation and ongoing management. Particular business value is delivered through The Orchestrator's ability to devour multi-platform implementation. This turns an area which has often been both costly and frustrating into a model of consistent efficiency.

Atos Codex AI Suite in action

AI and deep learning now become critical to business differentiation for enterprises in every sector. Here are just a few instances of how Atos Codex AI Suite is helping change the rules of contemporary business.

The Cognitive Data Center

Atos is using Atos Codex AI Suite AI solutions to create autonomous and intelligent data-centers.

With a cognitive data center, you accelerate troubleshooting and the analysis of root cause failures.

This improves both data center availability and application performance.

Video Intelligence

Computer vision is a clear target for AI, from the management of public space through to the interpretation of medical imaging.

Video Intelligence is now ubiquitous, but it is a massively sensitive area: we all want to feel secure, but nobody wants to be spied on.

In this use case, Atos Codex AI Suite AI applications learn how to parse live streams of video, from airports or sports arenas, for example, and pinpoint any item for concern.

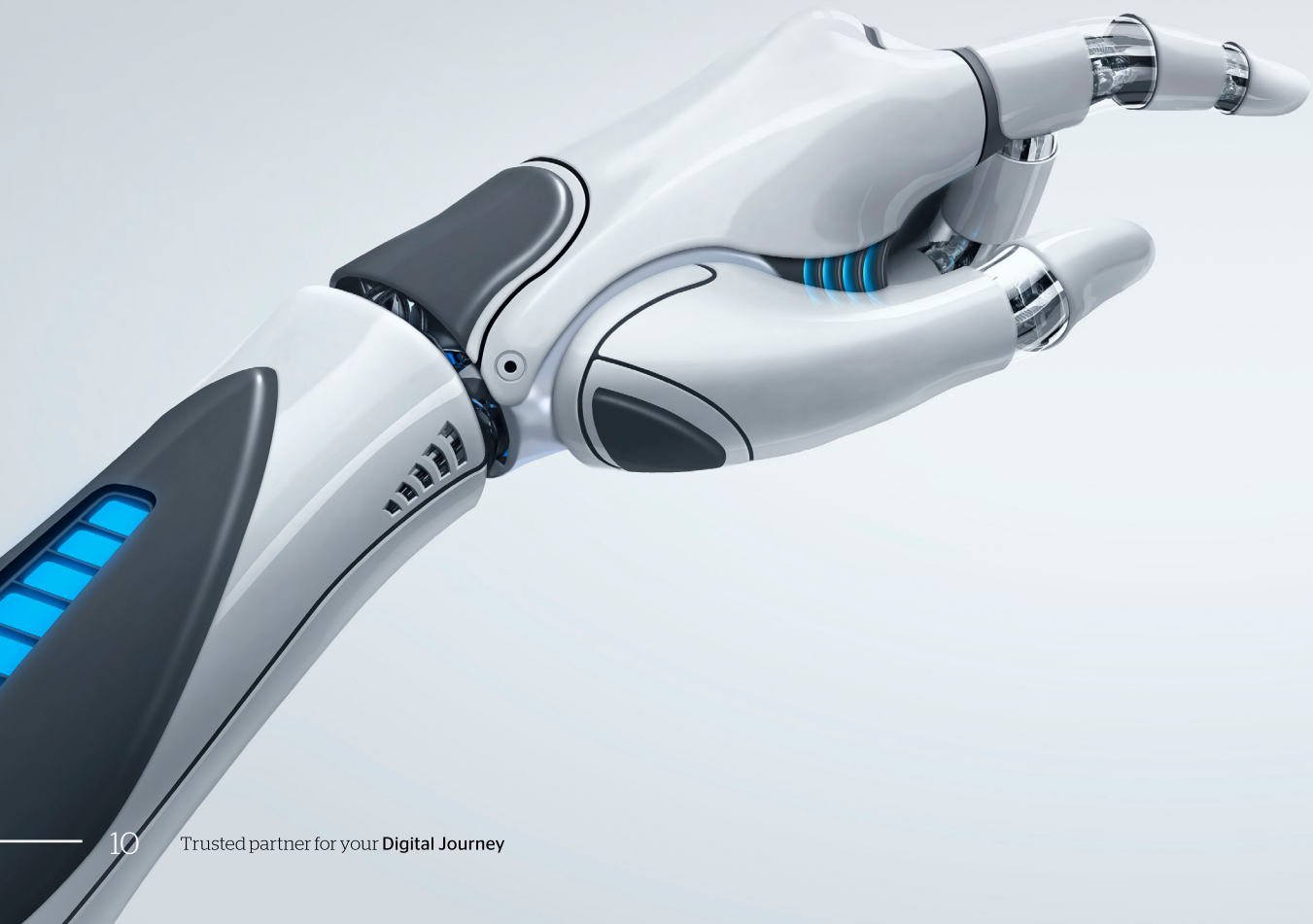
This not only reduces malicious threat. It smooths traffic and the quality of experience for travelers, staff and fans.

Motor Production Simulation

For years, manufacturers in automotive and aerospace have understood that software models are cheaper to simulate than actual engines.

But until AI and cognitive, even the most complex engine simulations could not match real-world reality.

Atos Codex AI Suite makes it possible to optimize the complex parameters needed for viable simulation – helping accelerate innovation in ways that improve performance, while reducing cost and environmental impact.



Next steps

Atos has already gained significant independent recognition as a practical innovator in AI and deep learning.

We are keen to share our experience with like-minded enterprises.

Atos Codex AI Suite has proved itself as a reliable and agile business accelerator for our own AI teams.

It is used routinely by many of our worldwide community of 4,500 data scientists. Atos Codex AI Suite has also made a key contribution to collaborative initiatives with major Atos partner Siemens.

The best way to assess the quality of any tool is to use it.

Our global network of Business Technology Innovation Centers is open for exploration and experiment for those wanting to dig deeper into Atos Codex AI Suite.

If you are already engaged with us in one of our many academic or industrial high-performance computing initiatives, then getting to know Atos Codex AI Suite is a natural progression.

If you are simply asking how AI could help your enterprise capitalize on digital transformation, then discovering Atos Codex AI Suite is a great starting point.

As business technologists, we like to do – not theorize. The more demanding you are, the better we like it. Set ambitious targets. Let's aim for two months as a realistic time frame for progress from idea to active proof-of-concept with your first Atos Codex AI Suite trials.

Get on the fast-track to AI with Atos Codex AI Suite.

About Atos

Atos is a global leader in digital transformation with over 110,000 employees in 73 countries and annual revenue of over € 11 billion.

European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions. The group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Syntel, and Unify. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information technology space. Its expertise and services support the development of knowledge, education as well as multicultural and pluralistic approaches to research that contribute to scientific and technological excellence. Across the world, the group enables its customers, employees and collaborators, and members of societies at large to live, work and develop sustainably and confidently in the information technology space.

Find out more about us
atos.net

Let's start a discussion together

All trademarks are the property of their respective owners. Atos, the Atos logo, Atos Codex, Atos Consulting, Atos Worldgrid, Bull, Canopy, equensWorldline, Unify, Worldline and Zero Email are registered trademarks of the Atos group. Atos reserves the right to modify this document at any time without notice. Some offerings or parts of offerings described in this document may not be available locally. Please contact your local Atos office for information regarding the offerings available in your country. This document does not represent a contractual commitment. May 2019. © 2019 Atos

CT_J539_180627_RY_B_THEFASTTRAC