

#CUSTOMERS

#EMPLOYEES

#ECOSYSTEM

THE DIGITALLY INSPIRED HUMAN

HUMAN LIFE 4.0

by Michelin

EDITORIAL



FLORENT MENEGAUX

Chief Operating Officer
Member of the Group
Executive Committee

HUMAN
LIFE 4.0

To mark Michelin's first participation in Viva Technology, we are delighted to present Human Life 4.0, our Group's digitalisation strategy.

Human Life 4.0 is born out of two competing visions posed by the challenges of technological transformation.

The first is that the notion of the digital economy is becoming redundant, to be replaced by the digitalised economy. No company, not even a manufacturing giant, can afford to miss this digital boat. Michelin has understood this, and has embarked, within its walls, upon the "4th industrial revolution": a 4.0 version, based on ubiquitous mobility, real-time, big data and artificial intelligence.

This revolution is already more than just a promise. At Michelin, with Jean-Dominique Senard as the driving force, it has become a reality that permeates our strategic model, from our processes to our offers, by way of HR and our entire organisation. Our conviction is that an industrial group can become, to quote our CEO, a leader in the digital world.

The second vision is that this industrial revolution, to create value sustainably, must be oriented toward human well-being. This is why we conceive it in the form of solutions centred on "user" needs: those of our customers, on the one hand, and those of our employees, on the other. For our customers, this need is all about sustainable mobility. It culminates in a prodigious

The future, as we are helping to map it out at Michelin, will be digital and centred on the human.

panel of services, solutions and products for which our core business, tyres, is one of the links in the chain. Car-sharing, connected tyres, predictive technologies, online restaurant bookings platform, car fleet management or travel assistance, artificial intelligence: the transformation of our offer - enhanced, personalised - is cross-functional and trans-sectoral, from agriculture to the mining industry, from tourist vehicles to motorsport.

In this way we are seizing a fabulous opportunity: to construct with our customers richer, more personalised relations, with far greater added value. The field of possibilities is considerable, and our strategic ambition is this: to double by 2020 our revenue from connected solutions and services.

As far as our employees are concerned, our approach is based on a simple principle: if we want them to adopt the digital reflex and act as facilitators in Michelin's transformation, then they need to see what they stand to gain from this transformation in their everyday lives. When we

make our production sites more intelligent, as we have done with our Factolab laboratory, dedicated to man-machine cooperation, our employees are more naturally inclined to adopt the solution when they see that the productivity gains are accompanied by gains in quality of life at the workplace: more interesting tasks, less drudgery. Demand on their part is now stronger than ever, whatever their age or business line.

The inspiration for Human Life 4.0 can be summed up thus: improving the quality of life, at the workplace or on the road, in our factories or in restaurants, thanks to the digital. The only bounds to its potential are those of human creativity itself. Nothing could replace this creativity, this intelligence, and certainly not any machine: they can however be augmented through technology. The future, as we are helping to map it out at Michelin, will be digital and centred on the human. We believe in the robustness of this combination and its perfect alignment with our goal: "We care about giving people a better way forward." We believe that this is

already making a difference, by giving more space to ideas, and therefore to invention. And we are exploring this combination methodically, through our investment strategies in start-ups, through our partnerships with the academic world, and through our entire innovative ecosystem, under the guiding hand of a Chief Digital Officer for the Group as a whole: something quite unprecedented in the manufacturing world.

In this way we are helping to build the economy of the future and the mobility of tomorrow. By developing and incorporating technologies in the service of human well-being, Michelin is faithful to its DNA: opening up new channels through innovation.

HUMAN
LIFE 4.0



4 QUESTIONS FOR...

... **ERIC CHANIOT**

Chief Digital Officer of MICHELIN Group

HOW DO YOU PERCEIVE YOUR ROLE AS CDO OF THE MICHELIN GROUP?

By entrusting me in 2015 to head up this cross-functional department at Group level, Jean-Dominique Senard's intention was to give this solid and well-established industrial leader a digital "graft". This constituted an innovative step in the world of manufacturing, as well as something of a gamble. I came from the world of tech and start-ups: and the cultural differences were considerable.

After three years, I can now see that this audacious gamble has paid off. We have succeeded in mobilising the workforce, in particular by demonstrating that the digital tools make their work more interesting, simpler and more value-creating. Our digital factory has revolutionised our web and mobile presence. We have expanded our investment strategy to incorporate many digital players, in particular start-ups and public platforms such as Bookatable. From this perspective, I can see that the Michelin innovation culture has significantly contributed to this success. Recruited as a skills enhancer, I have built up a very high-calibre team.

YOU ANSWER DIRECTLY TO THE MICHELIN CEO. DO YOU CONSIDER THIS SIGNIFICANT?

As soon as I arrived at Michelin, my roadmap was clear: to steer the digital transformation of the Group. I straightaway felt at one with the CEO's conviction that a change of this magnitude, involving more than 100,000 employees, and without wasting any time, is only possible if it is driven at the highest level of the company. Being directly answerable to the CEO was therefore entirely natural. It is a way of saying to the Group: "This is our collective priority, and we are going to support you so that you share this vision."

This intent is not cosmetic. It is, on the contrary, perfectly indicative of the challenge that Michelin intends to meet. Michelin's industrial know-how is a precious asset. Yet, in today's world, this is no longer enough. The customer experience is central: more connected, more personalised, more fluid, faster, richer. Through this experience, service enhancement opens up new vectors for growth and income. We must not however lose sight of the fact that this transformation will only be a success if the created value is above all human, and can be perceived in the quality of life of our customers and our employees: this is the essence of Human Life 4.0.

HOW, IN CONCRETE TERMS, IS HUMAN LIFE 4.0 MANIFESTED?

We are rapidly making progress on each of two pillars: our customers and our employees. There are many examples of this.

For the HR component, 2018 is the year of implementation in the Group of the InTouch app, accessible from any device, and which gives all our employees access to a unique platform for managing their careers. We are putting them in the "driver's seat", so to speak, offering them autonomy and proving to them, through experience, that the digital is an enhancement and not a threat.

Customer relations constitute no doubt the project with the most impact for Michelin. We are digitalising customer relations across the board. Firstly, with the aid of cutting-edge CRM tools. Then, by disseminating a communication culture between stakeholders, from marketing to after-sales. These new processes and new tools, initially trialled in North America, are currently being deployed on a worldwide scale.

We are today progressively transitioning to the appropriation phase, following the acculturation phase. This, to my eyes, is the clearest indicator of the relevance of Human Life 4.0.

WHAT FOR YOU ARE THE MAIN PRIORITIES, FOR MAKING MICHELIN A DIGITAL LEADER?

Our transformation can only be fully realised if we manage to neglect no one. This is why we need to continue proving to all Michelin business lines that, with the digital, everyone is a winner: the company, of course, but also every employee.

Next, the service design of our activities is making prodigious strides. We are well on our way and have every intention to keep on going. While the tyre remains pivotal for us, it is also a gateway to a new universe, one which our digital enterprise acquisition strategies enable us to explore.

Lastly, data will take on increasing importance. In this regard, user confidence is decisive. It is by demonstrating to our customers that their data can be transformed into services, and making their lives easier, that we will be able to progressively enrich our offer and consolidate our position as mobility leader.

SUMMARY

STRONG TECHNOLOGICAL TRENDS...

The 4th industrial revolution...
... technology-intensive: artificial intelligence, big data, IoT, digital distribution, ubiquitous mobility, etc.

...and new democratised usages for all generations:
empowerment / autonomy, personalisation, real-time, product-service system, etc.

...COMBINED WITH THE MICHELIN DNA

Sustainable mobility
The corporate purpose of the Michelin Group and the heart of the corporate strategy

Innovation culture
The strength of Michelin know-how, since the founding of the company in 1898



CUSTOMERS
Customer-centric, Human Life 4.0 is based on the relevance of the service rendered to the customer, around tyres and beyond, for simpler and cleaner mobility.

EMPLOYEES
Convinced that digital transformation cannot take place without the commitment of all its staff, Michelin proposes to its employees new tools to facilitate their life in the workplace while at the same time empowering them.

ECOSYSTEM
Michelin is placing its faith in a dense, innovative ecosystem, based on open innovation and in perpetual expansion, for exploring the potential of the digital technologies: research partnerships, investment in start-ups, etc.

DIGITAL ACTIVITIES DEPARTMENT
Unique in the manufacturing world, a cross-functional department directly answerable to the Group CEO is responsible for the digitalisation of Michelin, under the leadership of a CDO.

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#CUSTOMERS CENTRAL TO A DIGITALISED MICHELIN



The connected tyre, keeping Michelin one step ahead

A large majority of Michelin-brand tyres for trucks and buses are now so equipped. The objective is to monitor in real-time a wide variety of parameters relating to the driving experience, the road, and the tyres themselves (temperature, pressure, wear, etc.).

The connected tyre is based on RFID technology and sensors on the tyre.

The many initiatives launched by Michelin, some of which are already on the market, while others are in R&D phase, include:

- **MICHELIN Track Connect**, designed for Porsche owners driving on circuits, and proposing real-time driving assistance via a dedicated app. Racing enthusiasts get involved in drafting their race strategy.
- A **fleet management trial** involving 200 buses for the city of Venice, aimed at improving maintenance, safety and fuel consumption.
- **PresSense**, the first connected tyre for aircraft, designed in conjunction with Safran and launched in 2017, for facilitating maintenance operations and managing stocks more efficiently.
- **Mining industry**: Michelin develops sensors to inform of the condition of tyres which are notable for being the biggest in the world, even when deep underground.

Likely to spread beyond transport professionals, the connected tyre is, for Michelin, a powerful lever for enhancing its service offer, for more sustainable, cleaner and safer mobility.

The technologies of IoT and Big Data will allow us to significantly improve the experience that users and professionals have with their tyres. First, the smart tyre will be able to provide real-time information on its pressure and wear. Then it will make recommendations to help better choose and facilitate its use. It will inform its owner immediately in the event of a puncture or will warn of its level of wear, and will arrange interventions if required for repair and replacement.

MATTHIEU BONARDEL,
Connected Tires
and Vehicles Director

PresSense, designed by Safran and Michelin



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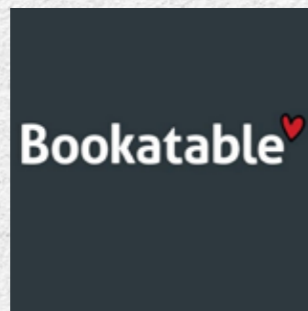
#CUSTOMERS CENTRAL TO A DIGITALISED MICHELIN

ENGAGE the customer at the heart of the business model

In 2016, Michelin launched an ambitious worldwide CRM modernisation programme called **ENGAGE**.

Customer-centric, **ENGAGE** reorganises the processes by breaking down the silos. The project is based on Salesforce cloud solutions and gives the sales, marketing, and customer services teams a 360° view and a better understanding of customers.

This major CRM modernisation and digitalisation programme has been deployed since late 2016 in North America, and is currently being deployed in Europe and Asia.



Bookatable, leader in online restaurant table bookings, under the Michelin banner

In 2016 Michelin acquired the **Bookatable** site, European leader in online restaurant bookings, with 15 million bookings made to date.

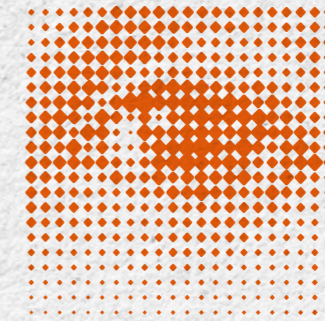
The London-based company has 13,000 listed restaurants in 12 countries. Bookings are made in real-time, via the website or the app.

Its acquisition by Michelin will enable the Group to accentuate its digitalisation procedures for services linked to travel, by capitalising on the reputation of the Michelin brand and its maps and guides activities, and drawing on the know-how and technologies developed by **Bookatable**.

Effidrive, The digitalisation of the heaviest and most arduous operations, and the federation of employees

Four innovative digital services designed to help drivers and fleet managers get the most out of their assets and business. They help them achieve not only the best performance and total cost of use, but they also greatly simplify the most common tasks of fleet management:

- *MyBestRoute chooses the best route suitable for transport professionals;*
- *MyInspection digitizes and standardizes vehicle inspections;*
- *MyTraining digitizes and facilitates driver training;*
- *MyRoadChallenge 'gamifies' driving, improving the safety and motivation of drivers.*



NexTraq: improving the management of commercial vehicle fleets

In 2017 Michelin acquired NexTraq. Founded in 2000, NexTraq is a leader in the field of GPS management of small commercial vehicle fleets. The technologies developed by the company help in particular to improve road safety, for example, by making it impossible to communicate by text messaging while driving, or by more efficiently managing fuel consumption.

Augmented reality makes its entry in the ViaMichelin app

The ViaMichelin app now proposes an augmented reality feature to help users find their way around their location as they move from place to place.

E-commerce : Michelin invests in digital tyre distribution channels

The digital and physical points of sale are complementary. This is why Michelin invested in two major players in the e-commerce of tyres during 2015: Allopneus (acquisition of a 40% stake of the capital) and Blackcircles (purchase of 100% of the capital), respectively French and British leaders in the sale of tyres online.

While tyres sold directly online represent only a small part of the market, customers use the web as a source of information prior to purchase in three-quarters of cases. Platforms like Allopneus or Blackcircles are privileged sources of information, as they provide access to user advice and help guide purchasing decisions.

The digital distribution channels also offer a service that goes beyond the sole purchase of a tyre by providing a complete offer, from the purchase of the tyre to its fitting in a partner garage chosen by the customer, on the date and time that suits him or her. This offer is consistent with what customers are looking for: simplicity and personalization.

By integrating the e-commerce channels into its distribution strategy, Michelin intends to offer a more complete customer experience, closer to needs, simpler, more in tune with the reality of buying behaviour or just seeking information on the Web.



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#EMPLOYEES FACILITATING LIFE IN THE WORKPLACE

Human Capital Management digital platform, offering Group employees an app to help them manage their careers

It is a digital space open to all Michelin employees and is accessible from a business or personal PC, tablet or smartphone.

Designed as an area of responsibility for employees and managers, it offers many features of HRM:

- job posting
- skills
- training
- wishes of evolution
- interviews between employees and managers
- functional and geographical mobility
- compensation

It guarantees a high level of confidentiality and protection of personal data. Access and processing meet European requirements imposed by the General Data Protection Regulation (GDPR).

The Human Capital Management digital platform will be launched in summer 2018, initially with 100,000 employees worldwide, before being extended in 2019 to employees of group entities such as Euromaster, Sascar and Bookatable.

Smart factory: changing the day-to-day workings of production sites through digital technologies

For Michelin, the smart factory is one which, thanks to technologies, lightens the workload of employees by freeing them from certain tasks which are now carried out by machines.

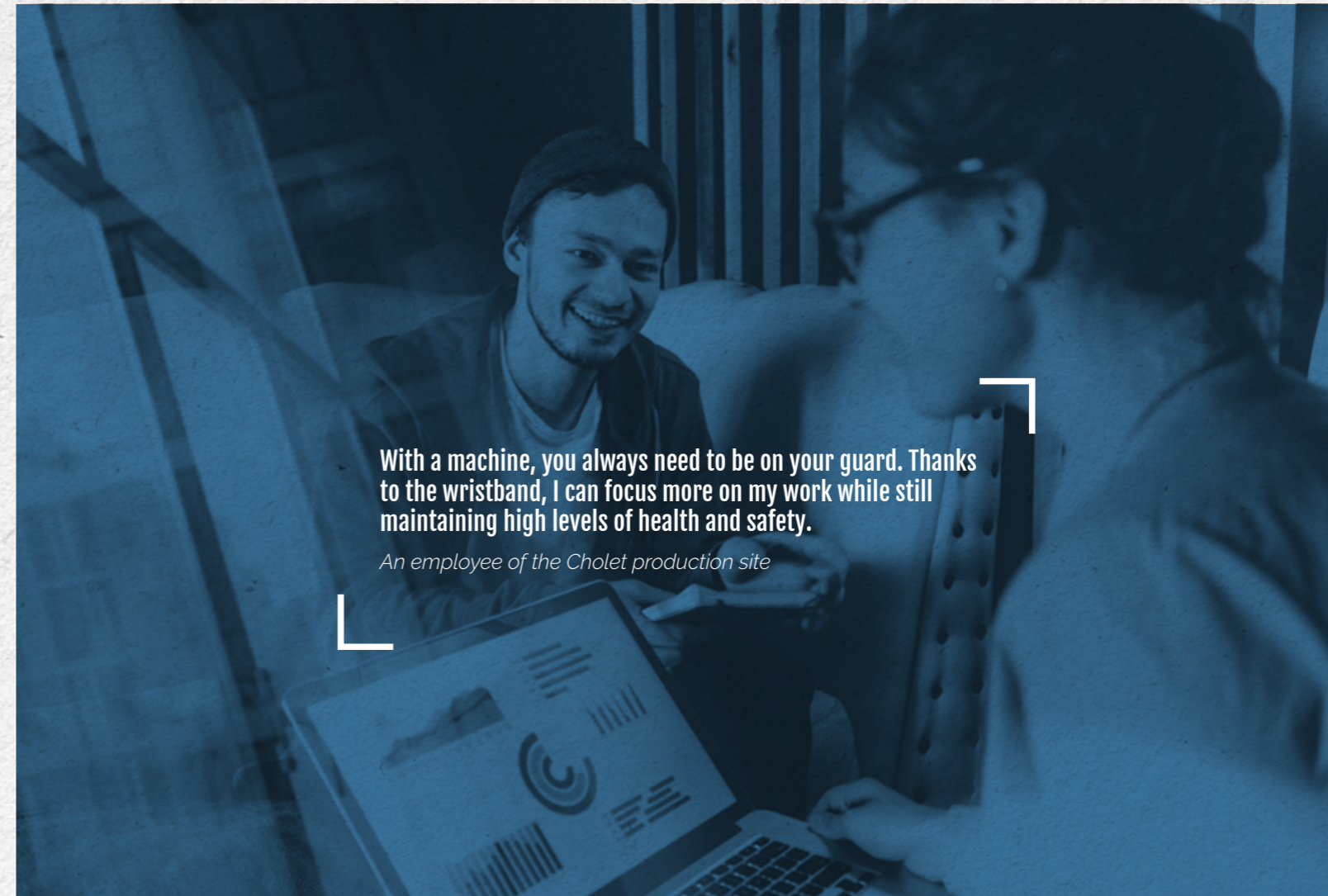
Recourse to augmented reality, cobotics (man-machine cooperation), chatterbots (voice-based dialogue interfaces) and connected objects enables employees to focus on operations with greater added value. The gains to be had are multiple and persuasive: more interesting work, better performance, less stress, less paperwork in maintenance follow-ups, etc.

Example initially tested at the Cholet plant: machine operators using connected wristbands, which reduces stress by relieving them of part of the permanent supervision and safety workload. The information produced by the machine is accessible on the operator's wrist, enabling the latter to gain in terms of mobility on the production site while remaining connected to their machine.

These trials are designed and rolled out as part of the Factolab project.



An augmented reality trial on a Michelin Group production site.



With a machine, you always need to be on your guard. Thanks to the wristband, I can focus more on my work while still maintaining high levels of health and safety.

An employee of the Cholet production site

The BibSpace corporate social network is a tool for the digitalisation and internal transformation of Michelin

BibSpace is the Michelin company social network. Launched in 2013, it now connects more than 40,000 users.

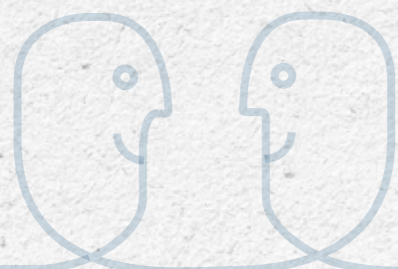
BibSpace covers a wide range of uses that go far beyond simply socialising, including :

- sharing good practices
- investigation of subjects in agile mode
- calls for ideas
- co-development of offers and services with clients
- accompaniment of change and acculturation
- Talent expression

The strength of BibSpace rests primarily on the operational communities it organizes. More than 800 communities have been created, some temporary, some sustainable, depending on their vocation. For example :

- the 'industry' community connects Michelin factories around the world and enables the sharing of good practices, or the extension of the investigation of various subjects (improvements to production machines have emerged thanks to the first exchanges on the network)
- the 'finance' communities, including those dedicated to the group's management controllers.

BibSpace is designed as a first level digital workplace, designed to support the transformation of the modes of operation and allow a higher level of collaboration, improved agility, improved efficiency. For Michelin, it is a fundamental building block for the progressive digitalisation of the Group's internal organization and operations.



FOCUS

#ECOSYSTEM THE CHOICE OF OPEN INNOVATION



FactoLab, the public / private man-machine cooperation lab

Michelin and three university institutes of the Clermont-Ferrand region (Institut Pascal, Lapsco and Limos) joined forces to launch on 10 February 2017 a common public / private research lab dedicated to man-machine cooperation. The lab, designed to serve as a crucible of co-innovation, is located on the Michelin RDI campus. It ties in with the active strategy for open R&D partnerships as desired by the Group.

The relevance of **FactoLab** derives from the complementarity between Michelin and its three research partners:

- The institutes mobilise their research laboratories and their expertise in fields such as cognitive science.
- Michelin offers the laboratories an application and experimentation framework, fast prototyping tools, and international visibility.

The projects generated in the framework of **FactoLab** are deployed on a trial basis on the Michelin Group sites: Cholet in France and Valladolid in Spain. The conducted trials include:

- The use of connected wristbands enabling machine operators to manage their machines via the information transmitted to their wrist.
- Augmented reality.

IPO, the Michelin incubator, a powerful partnership lever with start-ups

Incubator Program Office (IPO), launched in 2014, is an incubation programme for projects both internal and external to Michelin, associated with mobility. The purpose of the incubator is to provide the resources and time needed by these projects to demonstrate their business viability.

IPO ties in with the Michelin innovation chain, downstream of the Group's research partnerships and upstream of commercialisation. The selected projects present an advanced level of operational capability, for which the economic relevance then needs to be tested. The incubated projects are closely associated with the Group's *business units*, to ensure they are grounded in reality. They may be directly linked to Michelin's business core - mobility - or relate to other innovation segments.

The projects incubated in IPO include:

- *Symbio F Cell*, a start-up specialised in fuel cells.
- *WeCare*, a Chinese smartphone app offering global vehicle maintenance services.
- *Luli Information Technology*, a Chinese start-up specialised in innovative car sharing.

DDI

Big data start-up born in IPO and present at CES 2018 in Las Vegas

Incubated in IPO, DDI (Driving Data Intelligence) is a start-up specialised in the collection and analysis of driving and vehicle data, and is part of the Michelin Group.

The DDI business model is based on the data collected by a box connected to the vehicle. Position, orientation, speed and acceleration are among the parameters measured and used for determining, in particular, the broad driving characteristics. The platform designed by DDI carries out data analysis. The DDI solution and its connected box were presented at CES 2018 in Las Vegas.

The exploitation of these data takes the form of preventive and customised information services for the driver, to improve the driver's behaviour at the wheel, for improved safety and fuel usage.

DDI is also looking in the near future to propose:

- Predictive vehicle maintenance services for the driver or owner
- Services for identifying road network risk zones to local authorities

Furthermore, DDI has developed with two partners a 'pay how you drive' turnkey service that can be used by underwriters to adapt on a monthly basis vehicle insurance premiums based on the quality of driving behaviour. This offer was presented on 30 November 2017, and sets up DDI and the Michelin Group on the rapidly-expanding market of insurance for connected vehicles.

DDI's ambition is to become a worldwide benchmark for the modelling and analysis of driving data.

We wish to become the worldwide benchmark for the modelling and analysis of driving data.

SÉBASTIEN BARTAUD,

Advanced Marketing and Innovation Manager, Michelin



The DDI platform website
ddi.michelin.com

122,000
employees at Michelin

Times 2:
doubling the revenue from service activities
by 2020 thanks to the digital

1st place
for Michelin on the social networks
compared to its competitors

11 million
fans and followers of Michelin

26,700
contents produced and posted on
the social networks in 2016

+100%
growth in CRM expenditure in 2016
compared to 2015

60,000
clients of the MyAccount / Tire Care offer

2018
Deployment of InTouch, an app dedicated
to HR management by employees

2018
First participation of Michelin in Viva Technology

2017
Creation of Factolab in partnership with 3 university institutes

2017
Launch of PresSense, first connected
tyre for aeroplanes, by Michelin and Safran

2017
Implantation d'un centre d'excellence digital à Lyon

2017
Acquisition of NexTraq

2016
Launch of the Group's CRM tools redesign program

2016
Acquisition of Bookatable

2016
Acquisition of Blackcircles

2015
Creation of the post of Chief Digital Officer
and of the digital activities department at Michelin

2015
Purchased a 40% stake in Allopneus.com in April 2015

2014
Creation of the IPO programme

2014
Acquisition of Sascar, the Brazilian specialist
in the management of truck fleets using the internet

FACTS & FIGURES

VIVA TECHNOLOGY

Michelin, partner
of Viva Technology 2018



For the first time, Michelin is participating in Viva Technology.
For its 2018 edition, the leading tyre group is sponsoring
the TECHCRUNCH STARTUP BATTLEFIELD EUROPE.

At the end of the contest, Michelin will award the prize to the year's top start-up.

FIND OUT ABOUT MOVIN'ON AND MICHELIN



HASHTAGS

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