

TOYOTA YARIS

Yaris reflects Toyota's focus on design, displaying more distinctive styling inside and out. The objective has been to strengthen the car's emotional appeal, without sacrificing any of its established rational strengths, such as its packaging, efficient powertrains and durability.

Alessandro Massimino, Yaris's Europe-based product manager, said: "Yaris was always extremely strong in its rational dimensions. What we wanted to achieve was to connect the model not only with our customers' brains, but also with their hearts."

The current model, which benefited from significant revisions in 2014, follows the trend set by Aygo in adopting a stronger appearance, notably with a cross-shaped frontal treatment with separate upper and lower elements. At the rear there is a redesigned bumper with integrated diffuser, LED light clusters and a sculpted licence plate surround, all adding to the car's visual impact.

Important modifications have been made in the cabin as well, with an emphasis on comfort, driving pleasure and the quality of the materials, which have been significantly improved, looking and feeling better. Customer appeal is further enhanced with wider equipment and colour choices.

Four engines are available – 1.0 and 1.33-litre petrol, a 1.4 diesel and a 1.5 petrol hybrid. The three-cylinder 1.0-litre petrol unit was the first in a new Toyota family of engines with greater thermal efficiency. Its 37 per cent thermal efficiency (the amount of energy contained in the fuel that is converted into mechanical energy) delivers improvements in fuel consumption and CO₂ emissions, to 65.7mpg and 99g/km respectively (combined cycle).

Likewise, fine tuning of the hybrid system in Yaris Hybrid has reduced CO₂ levels from 79 to 75g/km, with a concurrent improvement in official combined cycle fuel economy to 85.6mpg (with 15-inch wheels specified).

In 2014, Toyota modified Yaris's platform to a far greater extent than would be the case for a simple model facelift, with the intention of improving roadholding, driving pleasure, comfort and NVH performance at a stroke.

The bodyshell has been stiffened with the addition of 36 extra spot welds, a new rear torsion beam and a new support beam for the dashboard. New suspension parts (springs, anti-roll bar, shock absorbers and bound stoppers), a new control logic for the electric power steering and a reduction in wind, rolling and mechanical noise combine to increase the car's overall driving pleasure.

DEVELOPED IN EUROPE, FOR EUROPEAN CUSTOMERS

The launch of the 2014 Yaris was a major milestone in the history of Toyota in Europe. It was the first time the product planning and research and development departments in Brussels and the European design studio near Nice had worked together to deliver new designs and changes to a vehicle platform that will be adopted for other Toyota models around the world.

The work done in Belgium and France on fundamental aspects of the 2014 Yaris – exterior and interior design and the platform – has been adopted for some versions of the Vitz supermini, manufactured in Japan. For Toyota Europe, this exchange of know-how was the first tangible application of the new thinking advocated in the Global Vision presented by Toyota president Akio Toyoda in 2011.

YARIS DESIGN

- Sharper, more assertive styling
- Revised interior with improved sensory quality
- Styling managed by Toyota's European design centre

For Alessandro Massimino, Yaris's product manager, the aim was clear: "Yaris already meets the essential requirements of supermini customers in its compactness relative to its roominess, its functional aspects and its innovative equipment, particularly its multimedia system and rear-view camera.

"Our surveys and the very positive response to the hybrid convinced us that we now had to move towards a more assertive style and increase the car's overall dynamism, both in terms of design and driving pleasure.

"With this as our goal, we have worked closely with the design centre and R&D division to create the 2014 Yaris."

Exterior design

Elvio D'Aprile, who led the design programme, said: "The supermini segment is perhaps the most competitive in Europe. We had to do something which really stands out from the crowd, so our objectives were to avoid the B-segment stereotypes, to harmonise the overall style for all the powertrain derivatives and to dare to be different from the competition."

Consequently, Yaris has a highly distinctive exterior that displays a more dynamic execution of Toyota's contemporary frontal design language with sharp edged detailing.

The narrow upper and large trapezoidal grilles, a hallmark of Toyota's current design, now merge at the point of the Toyota emblem to form a powerful cross shape.

The emblem is underscored by a chrome trim bar which runs through the length of the upper grille into new headlamp clusters, tying the frontal elements together in a powerful, horizontal emphasis of the car's width.

The headlamps themselves use projector technology for high and low beams and the clusters incorporate LED daytime running lights (an option for Icon grade, standard on higher grades).

The lower grille is underlined by a 'floating' spoiler and draws attention to the lower part of the car and its dynamic potential, ground-hugging stance and low centre of gravity.

In profile, Yaris displays a new door belt moulding, door mirrors with an optional folding function and new-design 15 and 16-inch alloy wheels.

At the rear, the bumper design gives the appearance of a broad, lower stance, with an integral diffuser adding to the car's more sporting, self-confident road presence.

The lamp clusters feature an LED graphic which adds to Yaris's personality, using light-guide technology to create a specific lighting signature (an option for Icon grade, standard on higher grades).

All versions – petrol, diesel and hybrid – share the same overall styling, with just a few subtle cues identifying each powertrain.

Elvio D'Aprile said: "The fact this project was managed entirely in Europe helped the final design enormously. We were able to hold daily discussions with engineering and product planning. Design elements that would normally have been rejected because they were incompatible with some preconception about technical specifications, suddenly became negotiable. As a result we were able to really carry our vision through from first proposals to the final car."

Interior design

Pierre Romeo was in charge of the interior design. He said: "The design is the result of three main objectives drawn from customer feedback. First, to enhance the feeling of roominess and dynamism in the cabin. Second to improve the sensory quality of the environment. And third, to combine an overall visual simplification with better colour variation and more sophisticated finishes."

The upper instrument panel has been made thinner, giving the dashboard a stronger horizontal line, and the upper surface of the driver's instrument binnacle has been restyled to give a slimmer appearance. In conjunction with these changes, the door panel has also been redesigned with a more fluid look, a larger soft-touch area and greater functionality.

The centre console has been raised by 23mm so that the length of the gear lever can be reduced by 30mm, improving the ergonomics of gear changes. A closed storage area has also been added to the console.

The upper instrument panel has a new grain effect that has a better tactile quality and less glossy appearance. It is complimented by a thicker trim band.

Yaris's trademark sculpted central dashboard panel has gained thicker soft padding and its surface is now finished in PVC. Different graining patterns – Animal, Technical or Geometrical – are used according to model grade.

Soft-touch finishes cover a greater area around the cabin. Throughout, the previous bright chrome trim has been replaced by a satin finish that gives a more modern and sophisticated appearance.

All-new seat trims are provided, with a new fabric pattern and colour for each grade. The differentiation between the grades has been strengthened with the addition of new interior colour schemes, with red and black joining the established grey and dark grey.

MODEL RANGE REVISED FOR 2016

- Yaris range tailored to suit a wider range of customers
- Design grade introduced alongside UK line-up of Active, Icon and Excel grades
- New equipment specifications and options, including bi-colour bodywork for Design models

A new Design grade leads a refreshed Toyota Yaris line-up for 2016, offering customers a wealth of choice combined with the model's established values of style, budget-friendly performance the unique-in-class option of hybrid power, with CO₂ emissions from just 75g/km.

Customers for the Design models can opt for a stand-out new colour scheme that includes a black "wrap-around" roof treatment. Elsewhere there are improved specifications, new wheels and seat trims and new option packs to choose from.

New Design grade

The five-door Design grade replaces Sport in the Yaris line-up and provides comprehensive customer choice with 1.33 VVT-i petrol, 1.4 D-4D diesel and hybrid powertrain options.

The standard Design specification includes: -

- Cruise Control
- Toyota Touch 2
- DAB tuner
- Bluetooth
- Reversing camera
- Dual-zone climate control (hybrid only)
- 16-inch black and machined-face alloy wheels
- LED daytime running lights and rear lights
- Projector headlights
- Gloss black honeycomb-mesh grille
- Rear spoiler
- Chrome fog lamp surrounds

Bi-colour option

The Yaris Design models can be given extra visual impact with a new bi-colour option that provides an Eclipse Black metallic finish for the roof, front pillars, door mirrors and upper grille with contrasting Vermillion Red or Glacier Pearl White bodywork. The latter comes with a bespoke two-tone grey interior and seat upholstery; both versions add a black headlining.

Improved equipment specifications

The 2016 Yaris benefits from revised equipment specifications across the board, including the provision of a temporary spare wheel as standard on all models. The Active hybrid model features new Spinne black cloth seat trim. Icon versions add DAB digital radio, cruise control, rear privacy glass and new-design 15-inch alloy wheels, plus the black Spinne seat trim. Excel becomes a hybrid-only grade, with features including automatic headlights and windscreen wipers, 16-inch alloys, rear power windows and an auto-dimming rear-view mirror.

Options and option packs

Customers can enhance the appearance and upgrade the equipment specification of their new Yaris with a selection of options and two factory-fitted option packs.

The new Convenience Pack, available for petrol and diesel Design versions, provides dusk-sensing headlights and rain-sensing wipers, keyless entry, auto-folding door mirrors, dual-zone climate control and push-button start. The pack is also available for the Yaris Hybrid Design, but with reduced content, reflecting the fact some its features are already provided as standard; the price is adjusted accordingly.

The Excel Hybrid can be specified with a Premium Pack, which adds a Skyview panoramic roof, rear spoiler, keyless entry, auto-folding door mirrors and Toyota Touch 2 with Go navigation.

Other key options include front and rear parking sensors, a Protection Pack and the addition of the Go navigation and connectivity function to the Toyota Touch 2 system. A leather interior can be specified with a range of different contrast stitching options, according to model grade.

UK grades and key features

ACTIVE	ICON adds	DESIGN adds	EXCEL adds (to Icon)
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Power front windows	15in alloy wheels	16in machined alloy wheels	16in silver alloy wheels*
6-speaker audio system with USB and Aux-in	Projector headlights	LED daytime running lights	LED daytime running lights
7 airbags	Body colour-matched electrically adjustable, heated door mirrors and door handles	Rear LED lights	Rear LED lights
Tyre pressure monitor	Toyota Touch 2 with DAB radio	Rear spoiler	Part-leather seats
Vehicle Stability Control and traction control	Rear-view camera	Gloss black honeycomb-mesh grille	Rain-sensing wipers
Temporary spare wheel	Air conditioning (dual-zone climate control on Hybrid)	<i>Option Packs: Convenience, Style, Protection, Bi-colour, Toyota Touch 2 with Go</i>	Dusk-sensing headlights
Electric, heated door mirrors	Front fog lamps		Climate Control
Dual-zone climate control (hybrid only)	Bluetooth for phone and audio streaming		Power rear windows
<i>Option Packs: Style</i>	Cruise control		<i>Option Packs: Style, Protection, Toyota Touch 2 with Go</i>
	Rear privacy glass		
	Leather steering wheel audio and telephone switches		
	<i>Option Packs: Protection, Style, Parking, Toyota Touch 2 with Go</i>		

* 15-inch alloys a no-cost option, securing 75g/km official CO₂ emissions.

TOYOTA SAFETY SENSE

Where Toyotas are concerned, being small is no barrier to benefiting from the latest safety technology. A Toyota Safety Sense package of active safety and driver assistance features is an affordable option on all Yaris models above Active grade, adding to the models' already impressive active and passive safety features.

Toyota Safety Sense provides a laser-controlled Pre-Collision System that warns the driver of an imminent collision with a vehicle ahead (Forward Collision Warning) and readies Pre-

Crash Brake Assist to deliver emergency braking as soon as the brake pedal is pressed. Should the driver fail to take action after the warning, the system will initiate Autonomous Emergency Braking to reduce speed by about 19mph, potentially bringing the car to a stop, to prevent a collision or reduce the force of impact.

The Forward Collision Warning works at speeds between 10 and 86mph, when the relative speed between the Toyota and the car ahead is greater than 10mph. The Pre-Crash Brake Assist functions at speeds between 19 and 49mph, with relative vehicle speeds greater than 19mph. For Autonomous Emergency Braking, the speed range is from seven to 49mph.

A Lane Departure Alert function is also included. This monitors lane markings on the road and helps prevent accidents and head-on collisions caused by a vehicle moving out of its lane. If the car starts to deviate from its lane without the turn indicators being used, the system alerts the driver with visual and audible warnings.

Automatic High Beam detects both the headlights of oncoming vehicles, and the tail lights of vehicles ahead, automatically switching between high and low beams to avoid dazzling other drivers and improving the driver's night-time vision.

POWERTRAINS

- Widest choice in the supermini segment – two petrol, one diesel and one hybrid
- Extensively revised three-cylinder 1.0-litre engine with high thermal efficiency
- Hybrid powertrain improved to further reduce fuel consumption and emissions

Efficiency and performance

Yaris is available with four powertrains – two petrol, one diesel and a hybrid. The hybrid system, which already accounts for more than a quarter all Yaris sales in the UK, benefits from adjustments which have brought its CO₂ emissions down further, from 79 to 75g/km, a level that qualifies it for exemption from the inner London congestion charge (with 15-inch wheels specified). Extremely fuel efficient (85.6mpg combined cycle, with 15-inch wheels) and clean (virtually zero NOx and particulate emissions), this powertrain remains a unique proposition in the supermini segment.

Yaris Hybrid also stands out for its near-silent running, comfort and easy handling, especially around town where the hybrid system allows the car to be driven for short distances in electric mode, or with limited use of the petrol engine. The automatic transmission adds to the all-round smooth, quiet and comfortable driving experience.

Yaris Hybrid's powertrain features a four-cylinder Atkinson cycle 1,497cc engine that is 50mm shorter than the 1.8-litre unit used by Prius and Auris Hybrid; it is also 17kg lighter. Its features include a cooled exhaust gas recirculation system, an electric water pump, a low-friction distribution chain, an intake manifold made of a composite material and a compact exhaust manifold.

In the Atkinson cycle, compression and expansion are asymmetrical. The inlet valves close later than in a traditional Otto cycle, delaying the compression. This creates a higher expansion ratio for less compression, reducing pumping losses and converting combustion energy to engine power more effectively. In addition, the exhaust temperature is lower than that in conventional engines. The EGR system reintroduces cooled exhaust gas into the combustion chamber, which also helps limit pumping losses and further reduce engine operating temperatures.

The 1.33 Dual VVT-i petrol and 1.4 D-4D diesel engines have undergone secondary modifications aimed at reducing noise and vibration. The diesel benefits from a new torque rod and both engines feature better insulation for the exhaust system. In June 2014 the 1.4 D-4D was further revised to comply with Euro 6 emissions standards, changes which also brought about improved fuel economy and lower CO₂ figures.

These engines are paired with six-speed manual transmissions, engineered to achieve the best balance of performance and fuel economy. Top speed for both is 109mph; combined cycle fuel consumption for the 1.33 petrol is 57.6mpg and for the 1.4 D-4D 74.3mpg.

The petrol unit is available with Toyota's Multidrive S continuously variable transmission. More compact and lighter than a conventional automatic, it combines an easy, comfortable and smooth drive with optimum engine torque control that delivers considerable fuel savings in city traffic. The system also provides a manual mode with seven fixed gear ratios that can be selected using the shift lever or paddle controls on the steering wheel.

Improved 1.0-litre three-cylinder engine

The three-cylinder 1.0-litre petrol engine has undergone significant changes to improve its performance, reduce emissions and cut noise and vibration levels. It achieves an excellent thermal efficiency level of more than 37 per cent (the proportion of energy contained in the fuel which is converted into mechanical energy). This compares to an average thermal

efficiency for mass-produced petrol engines of between 30 and 35 per cent. One of the effects of this is a reduction in CO₂ emissions from 110 to 99g/km.

Toyota engineers achieved this principally by optimising the power/weight ratio, for example by creating a combined cylinder head and exhaust manifold that is more compact and weighs less.

To reduce fuel consumption while maintaining performance, the engine's compression ratio has been increased to 11.5:1. Further development of Toyota's VVT-i variable valve timing allows the engine to switch between Atkinson and Otto cycles. The engine runs on the Atkinson cycle at low loads for better fuel efficiency when driving around town and cruising at low revs. With higher engine loads and at high speed, it returns to the Otto cycle.

The intake ports and pistons have been redesigned to increase the tumble effect (vertical swirl) in the combustion chamber, promoting combustion speed. Scavenging and combustion chamber cooling have been increased to delay knocking. And large volumes of cooled exhaust gas recirculation are used to reduce pumping losses.

Lastly, friction levels have been reduced by using diamond-like carbon (DLC) for the valve actuators; making changes to the surface treatment of the pistons; and better engine cooling management, mainly through changing the shape of the oil sump to ensure the engine gets up to temperature more quickly.

Matched to a five-speed manual gearbox, the three-cylinder engine is not only cheap to run, it also communicates a good torque feel to the driver that's well-suited to city driving.

DRIVING PLEASURE

- Improved handling and greater comfort
- New torsion beam
- Suspension and steering modifications

Yaris features comprehensive, customer feedback-driven improvements to its ride comfort and handling, and significant reduction in NVH. Serkan Karaman, senior project manager, said: "For the first time in the history of the R&D division in Europe, we have taken the initiative and made important changes to the platform with regard to vehicle dynamics that go way beyond the boundaries of a facelift."

Improved ride comfort and handling

Yaris has a more rigid upper and lower body structure, which offers a more direct and linear response to steering inputs. At the same time, it delivers a more comfortable ride and maintains balanced body control.

Front-end rigidity has been increased thanks to the use of a new windscreen bonding material and thicker dashboard bulkhead. The instrument panel beam and its connections to the dashboard and central tunnel have been stiffened to improve steering response.

Central and rear body rigidity have also been increased, with 36 additional spot welds, redesigned tunnel bracing to add rigidity to the vehicle floor, a redesigned wheelhouse area, and a reinforced rear bumper attachment to reduce body roll deformation.

The rear suspension has been redesigned to accommodate a new, stiffer torsion beam with softer coil springs and a new, long, polyurethane-bound stopper. This improves ride comfort while maintaining good body control, and also improves the vehicle's balance of front and rear grip, reducing understeer tendencies.

Softer springs also feature in the front suspension and the introduction of rebound springs within the shock absorbers increases front anti-roll stiffness, which improves handling and reduces body roll when cornering.

New shock absorber valve technology reduces the transmission of vibrations from the road surface and improves ride quality without compromising handling agility.

Finally, changes to the control logic in the electric power steering take advantage of the extra bodyshell stiffness and suspension changes to give the driver significantly improved steering feel, responsiveness and accuracy.

NVH reductions

As well as a reduction in unwanted vibration thanks to a stiffer bodyshell and re-tuned suspension, Yaris also benefits from markedly lower interior noise levels.

Toyota engineers used customer feedback to identify three noise reduction priorities. First, reduction of high-frequency noise from the engine and road surface; second, reduction of

low frequency noise from the engine; and third, reduction of wind noise when driving at speed.

To minimise the penetration of high-frequency noise through the dashboard bulkhead and vehicle floor, the dashboard silencer has been completely re-engineered. The sound absorption material in the dashboard panel and console has been upgraded and a new noise-optimised carpet has been introduced.

The effort invested extends to detailed steps such as reducing the size of the feed-through apertures in the dashboard silencer to maximise its surface area. A similar principle has been applied to the instrument panel and console box cavities, which now feature double the previous quantity of sound-absorbing material.

These measures improve cabin sound performance both under acceleration and at constant speed driving.

Low-frequency engine booming has been minimised by using a new engine torque rod on versions powered by the 1.4 D-4D diesel engine, and by relocating the exhaust system hangers.

Wind noise intrusion at high speed has been cut by using a new, spoiler-shaped cowl louvre that reduces air turbulence at the base of the windscreen; a new door weather strip design which improves sealing, particularly around the door mirror area; and doubling the amount of sound absorption material in the door cavity.

MULTIMEDIA

- Toyota Touch 2 multimedia touchscreen system
- Toyota Touch 2 with Go, with navigation, connected services and applications
- New AUPEO! And COYOTE applications for Yaris
- Toyota the first volume manufacturer to make Google Street View and Panoramio available via an on-board multimedia system

Toyota Touch 2

The Toyota Yaris benefits from Toyota Touch 2, an updated version of Toyota's affordable touchscreen multimedia system. It comes with a higher resolution seven-inch screen that uses four times as many pixels as the original system, for bright, sharp images with a deeper

3D effect.

The package includes Bluetooth for hands-free phone calls, sending and receipt of text messages and audio streaming; a rear-view camera; vehicle information, including trip data, climate control profile; and management of settings for door locking and lighting.

The screen menu has been expanded to incorporate more information, including air conditioning settings. There is a new lay-out to show the operation of the hybrid system and the screen supports 'drag and flick' control for easier use.

It also enables simple connection of iPods and MP3 players via USB or Bluetooth, and, where available, will display album, artist and track information. Audio system options can also be controlled using the screen.

It comes with a DAB digital radio as standard, with an FM link that automatically switches the system to FM reception when there is no DAB digital signal.

Toyota Touch 2 is also "MirrorLink"-ready, allowing users to connect compatible smartphones and operate them entirely using the touchscreen.

Toyota Touch 2 with Go

Toyota Touch 2 with Go, an option on all grades apart from Active, adds a wealth of extra functions and advanced connectivity, all controlled simply and clearly using the same touchscreen system. Representing excellent value for money, it was developed with European customers in mind.

The leading feature is the full map navigation, with a new screen design that provides clear display of signposts, junctions and lane guidance. An intuitive detour function uses real-time traffic information to warn of congestion ahead, calculate the likely delay and suggest a suitable alternative route.

Traffic information, located on the map itself, takes the form of a 'traffic bar,' alerting the driver to any congestion ahead and the expected delay.

The system also provides speed limit indications and safety camera warnings, and in the event of an emergency will give direct access to the emergency services or AA breakdown assistance, automatically providing exact vehicle location details on the display screen.

Using the Toyota Online function, the system gives on-board connectivity to a range of services, including Toyota real-time HD traffic data from TomTom, Google Street View, Panoramio and Google Local Search – the largest and most up-to-date search database in the world.

Toyota's customer portal also allows users to connect with their vehicle online. For example, Google Maps can be used to add a destination to the navigation system from home or office. Points of Interest can also be downloaded for entry as destinations.

A range of applications are available free for 12 months with Toyota Touch 2 with Go, easily obtained following a quick registration process via Toyota's customer web portal, including Toyota Real Time Traffic and services such as fuel prices, weather and parking information. Two new applications have been launched with the 2014 Yaris: AUPEO!, a personal internet radio; and COYOTE, a traffic sharing information service.

Toyota Touch 2 with Go also upgrades the multimedia base unit to incorporate a contact person image display.

FROM GLOBAL VISION TO A REGIONAL APPROACH

- Toyota Europe to take a leading role in planning compact cars
- Toyota Motor Europe's largest regionalised project, for global implementation.

Toyota's Global Vision, led by president Akio Toyoda in 2011, outlines new thinking that recognises how Toyota's 17 R&D centres need to be given greater responsibilities and more freedom in order to meet the different needs and desires of customers around the world.

This change in attitude in the group's global strategy led to the creation of specialist hubs in each world region. Particular attention has been paid to Europe, where the car culture is most firmly established, and where vehicle manufacturers have built world-renowned expertise.

Toyota Europe's global role

As Europe is the cradle of the compact car, Toyota Motor Europe (TME) has been given a leading role in defining the company's future A, B and C-segment cars.

TME has also become Toyota's skill centre in three areas that are fundamental to the European car market: the importance of the diesel engine, customer expectations for perceived quality, and customer demands for vehicle dynamics.

This specialisation is being achieved through increased collaboration with European suppliers, advanced research work with European universities, and local alliances, such as the agreement with BMW for diesel engines.

Ultimately the fruits of this better understanding of the European market will be shared worldwide and will help in the development of Toyota products on a global scale.

All of these new responsibilities fall specifically to Toyota's product planning department, its R&D centre at Zaventem, near Brussels, and its ED² design and development centre in the south of France..

Yaris, the product of regionalisation

Toyota has made significant investments in money and resources to deliver Yaris, the latest development of its best-selling model in Europe. Almost £70 million and 576,000 hours of R&D work were committed to the project, and more than 1,000 new parts have been produced. Toyota Motor Europe invested 75 per cent of the total, compared to the 25 per cent it contributed to the launch of the third-generation Yaris in 2011.

The focus of the product planning team was to strengthen the features and qualities which have made Yaris a success, in particular the unique proposition of its hybrid powertrain (Yaris Hybrid now accounts for almost one in three Yaris sales in Europe), multimedia system and rear-view camera.

Analysis of press coverage and public surveys (including the opinions of non-Yaris customers) helped Toyota gain an in-depth insight into what the restyling programme should achieve. Comments converged on the need to give the car an emotive, dynamic dimension, in addition to its widely appreciated functional qualities.

The research confirmed that the key purchase consideration for European supermini customers is a car's appearance; both the design and the sensory quality have to be just right.

These findings were backed up by market trends analysis, enabling the product planning team to give a clear brief to Toyota's ED² design studio and its R&D engineers, and to initiate a close working collaboration between the departments at each step of the project.

From a design point of view, it was recognised that it was important to affirm the car's character, an initiative that had already been launched with the styling of the hybrid model in 2012. For their part, engineers at Toyota's R&D Centre in Zaventem, Belgium, produced the specifications needed for the technical modifications, after carrying out in-depth investigations into the current Yaris's comfort, performance and sound insulation.

To meet their targets for noise and vibration, they had to develop a new torsion beam and modify parts of the car's platform itself. This was a first for the Zaventem centre, following which it decided to add an early prototype stage so that modifications can be validated earlier in the process. The normal prototype stages then allow for final adjustments to be made and for more detailed studies to be conducted into their impact on the car's general performance.

With product planning, design and R&D operations all relatively close to each geographically, it was easier for the project stakeholders, including parts suppliers, to hold frequent meetings. This made final adjustments easier to agree and sped up the decision-making process.

Serkan Karaman, Senior Project Manager at Zaventem, said: "What makes this project different from others we have worked on is the greater development content compared to a typical product facelift.

"We were able to take the lead in Europe for a global vehicle in which content is being adopted for other regions, such as Japan and North America. In the past, project management was mostly undertaken in Japan. They decided the schedule and assigned specific tasks to the team in Europe. This time we were in the driving seat, we had the freedom to decide what to do, when to do it and how to go about it.

"As a result, Yaris really incorporates European know-how and European taste. Our operations teams have also gained invaluable experience from the project."

UK TIMELINE AND SALES

YEAR	MONTH	EVENT
1997	September	Toyota unveils its European-designed Funtime/Funcargo/Funcoupe concept cars at the Frankfurt motor show, models that provide the inspiration for the production Yaris.
1999	April	The first generation Yaris goes on sale in the UK, in three and five-door body styles with a 1.0-litre VVT-i petrol engine.
	November	Yaris is named European Car of the Year 2000.
2000	January	Yaris Verso mini-MPV goes on sale in the UK, introducing a 1.3 VVT-i engine that is also offered in Yaris.
	March	Toyota presents a Yaris Cabrio concept at the Geneva motor show. ABS with EBD made standard on all models.
2001	January	European Yaris production starts at the Valenciennes factory in France.
	April	The three-door Yaris T Sport is introduced, with sports suspension, body styling kit and 1.5 VVT-i engine.
2002	January	Yaris Colour Collection Red model is introduced.
	March	A 1.4 D-4D diesel engine debuts in Yaris and Yaris Verso.
	July	Colour Collection Blue is added to the range.
	December	Colour Collection Silver is launched.
2003	April	The Yaris range is revised with new styling details. A five-door T Sport model is introduced and a new grade structure adopted (T ₂ , T ₃ , T Spirit). A new 86hp 1.3 VVT-i engine debuts and MultiMode (M/M) transmission is made available with the 1.0 VVT-i engine.
2004	April	Yaris Blue special edition model is launched.
2005	February	New Yaris Colour Collection feature model is launched.
	September	Yaris Verso UK sales end.
	October	Second-generation Yaris achieves five-star Euro NCAP rating for adult occupant safety.
2006	June	The second generation Yaris is launched with 1.0 and 1.3 VVT-i and 1.4 D-D engines. M/M transmission is available as an option with the latter two units.
	July	Special edition Yaris Ion is launched.
	December	Valenciennes Yaris production passes one million units.
2007	January	Yaris Zinc special edition model is launched.
	March	VSC stability control with TRC traction control made an option on all Yaris models.
	April	New sporting flagship Yaris SR launched, with new dual VVT-i 1.8 engine. Sports-styled 1.3 VVT-i and 1.4 D-4D

		SR models are also added to the range.
	June	Yaris TR feature model is launched.
2008	January	Yaris TR specification is revised.
2008	February	Yaris SR 1.3 and 1.4 D-4D specification revised
2009	January	2009 Yaris launched with new 1.33 engine with Stop & Start and revised 1.0 VVT-i and 1.4 D-4D engines, and new six-speed manual and MultiMode transmissions. New grade structure introduced: T ₂ , TR, SR and T Spirit. Exterior styling is slightly revised.
	July	TR model revised to include alloy wheels as standard, SR grade deleted from the range.
	October	T Spirit grade is deleted from the range.
2010	January	Introduction of the 2010 Yaris with improved TR equipment specifications and exterior/interior styling details.
2011	January	SR and T Spirit grades reintroduced
	March	Hybrid Yaris HSD concept presented at the Geneva motor show.
	September	New, third generation Yaris launched in the UK in T ₂ , TR, SR and T Spirit grades.
2012	June	Special Edition and Trend models introduced
2013	January	New Yaris Trend introduced.
	December	Yaris adopts a new grade structure (Active, Icon, Icon Plus and Trend). 1.4 D-4D engine is revised to give 99g/km CO ₂ emissions.
2014	May	Toyota announces styling and equipment revisions for Yaris and improved powertrains.
	July	UK prices and specifications for Yaris in the UK are released.
	August	First customer deliveries of the revised Yaris.
2015	June	Yaris's 1.4 D-4D engine becomes Euro 6-compliant, with consequent improvements in fuel economy and CO ₂ emissions.
	August	Toyota Safety Sense is made available as an option on all Yaris models above Active grade.
	December	The 2016 Yaris is launched, with new Design grade and a bi-colour bodywork option. Sport grade is discontinued and Excel grade becomes hybrid-only.
2016	July	The Yaris Orange Edition model is added to the range. Yaris Hybrid achieves equal top score in the 2016 Which? New Car Survey .

UK Yaris sales in 2016: 30,402

Cumulative UK sales since launch: 524,070

TOYOTA YARIS TECHNICAL SPECIFICATIONS

1.0-litre VVT-i petrol	
Code	1KR-FE
Type	In-line transverse 3-cylinder
Valve mechanism	DOHC 12-valve VVT-i
Bore x stroke (mm)	71.0 x 84.0
Displacement (cc)	998
Compression ratio	11.5:1
Max power (bhp/kW @ rpm)	68/51 @ 6,000
Max torque (Nm @ rpm)	95 @ 4,300
1.33-litre Dual VVT-i petrol	
Code	1NR-FE
Type	In-line transverse 4-cylinder
Valve mechanism	DOHC 16-valve Dual VVT-i
Bore x stroke (mm)	72.5 x 80.5
Displacement (cc)	1,329
Compression ratio	11.5:1
Max power (bhp/kW @ rpm)	98/73 @ 6,000
Max torque (Nm @ rpm)	125 @ 4,000
1.4-litre D-4D diesel	
Code	1ND-TV
Type	In line transverse 4-cylinder
Valve mechanism	SOHC 8-valve
Bore x stroke (mm)	73.0 x 81.5
Displacement (cc)	1,364
Compression ratio	16.5:1
Max power (bhp/kW @ rpm)	89/66 @ 3,800
Max torque (Nm @ rpm)	205 @ 1,800 – 2,800

1.5-litre VVT-i Hybrid					
Code	1NZ-FXE				
Type	4 cylinders, in-line				
Valve mechanism	16-valve DOHC with VVT-i				
Bore x stroke (mm)	1,497				
Displacement (cc)	75 x 84.7				
Compression ratio	13.4:1				
Max power (bhp/kW @ rpm)	73/55 @ 4,800				
Max torque (Nm @ rpm)	111 @ 3,600 – 4,400				
Electric motor type	Permanent magnet, synchronous				
Max. output (bhp/kW)	59/45				
Max. torque (Nm)	169				
Battery type	Nickel-metal hydride				
Max. system output (bhp/kW)	98/74				
PERFORMANCE	1.0 VVT-i 5MT	1.33 Dual VVT-i 6MT	1.33 Dual VVT-i MDS	1.4 D-4D 6MT	1.5 VVT-i Hybrid e-CVT
0-62mph (sec)	15.3	11.7	12.6	10.8	11.8
Maximum speed (mph)	96	109	109	109	103
FUEL CONSUMPTION, EMISSIONS, INSURANCE & VED	1.0 VVT-i 5MT	1.33 Dual VVT-i 6MT	1.33 Dual VVT-i MDS	1.4 D-4D 6MT	1.5 VVT-i Hybrid e-CVT
Combined (mpg, 15/16in wheel)	65.7	57.6/55.4	57.6/55.4	80.7	85.6/78.5
Urban (mpg, 15/16in wheel)	54.3	44.1/43.5	45.6/44.8	67.3	91.1/85.6
Extra Urban (mpg, 15/16in wheel)	74.3	68.9/65.7	67.3/62.8	91.1	85.6
CO ₂ emissions 15in/16in wheel (g/km)	99	114/119	114/119	91	75/82
VED band	A	C	C	A	A

Emissions standard	Euro 6				
Insurance groups – without Toyota Safety Sense	4E/5E	9E	9E	11E	10E/11E
Insurance groups – with Toyota Safety Sense	2E	8E	8E	9E	8E
Service schedule	10,000 miles/annually				
DIMENSIONS					
Overall length (mm)	3,950				
Overall width (mm)	1,695				
Overall height (mm)	1,510				
Wheelbase (mm)	2,510				
Track width – front (mm, 15in wheel/16in wheel)	1,470/1,460				
Track width – rear (mm)	1,460/1,445				
Overhang – front (mm)	810				
Overhang – rear (mm)	630				
Interior length (mm)	1,915				
Interior width (mm)	1,420				
Interior height (mm)	1,250				
Shoulder room – front (mm)	1,334				
Shoulder room – rear (mm)	1,315				
Couple distance (mm)	880				
VDA luggage capacity – rear seat up (l)	286				
Boot length – rear seat up (mm)	710				
Max. boot width (mm)	1,365				
Coefficient of drag (Cd)	0.287				
Fuel tank capacity (l)	42 36 (Hybrid)				

WEIGHTS	1.0 VVT-i	1.33 Dual VVT-i	1.4 D-4D	1.5 VVT-i Hybrid
Kerb weight (kg)	980 – 1,040	1,030 – 1,095	1,050 – 1,105	1,085 – 1,160
Gross vehicle weight (kg)	1,450	1,490	1,545	1,565
SUSPENSION				
Front	MacPherson struts with anti-roll bar			
Rear	Torsion beam			
BRAKES	1.0 VVT-i	1.33 Dual VVT-i	1.4 D-4D	1.5 VVT-i Hybrid
Front (mm)	258 ventilated discs			219 ventilated discs
Rear (mm)	Drums/278 solid discs (Sport)			247 solid discs
WHEELS & TYRES				
Wheel size	14in steel	15in steel or alloy	16in alloy	
Tyre size	175/70R14	175/65R15	195/50R16	
STEERING				
Type	Rack and pinion, electric motor power assisted			
Ratio	13.0:1			
Turns – lock to lock (15in/16in wheels)	2.65/2.98			
Minimum turning circle – tyre/body (m)	9.6/10.2 (15in wheels) 10.0/11.6 (16in wheels)			

TRANSMISSION		1.0 VVT-i 5 M/T	1.33 Dual VVT-i 6 M/T	1.33 Dual VVT-i MDS	1.4 D-4D 6 M/T	Hybrid e-CVT
Gear ratios	First	3.545	3.538	2.386 to	3.538	Forward 2.636
	Second	1.913	1.913		1.913	
	Third	1.310	1.392		1.310	
	Fourth	1.027	1.029	0.426	0.971	
	Fifth	0.850	0.818		0.714	
	Sixth	-	0.700		0.619	
	Reverse	3.214	3.333	2.505	3.333	2.636
Final drive ratio		4.294	4.214	5.079	3.550	3.190

TOYOTA YARIS EQUIPMENT SPECIFICATIONS

SAFETY	ACTIVE	ICON	DESIGN	EXCEL
Driver's airbag	✓	✓	✓	✓
Front passenger airbag with cut-off switch	✓	✓	✓	✓
Front side airbags	✓	✓	✓	✓
Curtain shield airbags	✓	✓	✓	✓
Driver's knee airbag	✓	✓	✓	✓
ISOFIX child seat fixings on outer rear seats	✓	✓	✓	✓
Child-proof rear door locks (5-door)	✓	✓	✓	✓
Front seatbelts with pretensioners and force limiters	✓	✓	✓	✓
Five three-point seatbelts with Emergency Locking Retractor (ELR)	✓	✓	✓	✓
Whiplash Injury Lessening (WIL) front seats	✓	✓	✓	✓
ABS with Electronic Brakeforce Distribution (EBD) and Brake Assist (BA)	✓	✓	✓	✓
Vehicle Stability Control (VSC) and Traction Control (TRC)	✓	✓	✓	✓
Collapsible steering column	✓	✓	✓	✓
Retractable brake pedal	✓	✓	✓	✓

Seatbelt reminder light and buzzer (front and rear seats)	✓	✓	✓	✓
Tyre pressure monitor	✓	✓	✓	✓
Toyota Safety Sense (Pre-Collision System, Autonomous Emergency Braking, Lane Departure Alert, Automatic High Beam)	✘	Opt	Opt	Opt
INSTRUMENTS & CONTROLS	ACTIVE	ICON	DESIGN	EXCEL
Analogue speedometer	✓	✓	✓	✓
Analogue tachometer	✘	✓	✓	✓
Trip computer	✓	✓	✓	✓
Outside temperature display	✓	✓	✓	✓
Digital clock	✓	✓	✓	✓
Engine temperature warning	✓	✓	✓	✓
Lights on audible warning	✓	✓	✓	✓
Door ajar warning	✓	✓	✓	✓
Twin speed wipers, variable intermittent with mist function	✓	✓	✓	✓
Headlamp levelling adjustment	✓	✓	✓	✓
COMFORT & CONVENIENCE	ACTIVE	ICON	DESIGN	EXCEL
Electrically adjustable heated door mirrors	✘	✓	✓	✓
Remote fuel flap release	✓	✓	✓	✓
Electric Power Steering (EPS)	✓	✓	✓	✓
Cruise control with speed limiter	✘	✘	✘	✓
Electric front windows with driver's "one touch" down operation	✓	✓	✓	✓
Electric rear windows	✘	✓	✓	✓
Rear-view camera	✘	✓	✓	✓
Stepless tilt and telescopic steering wheel adjustment	✓	✓	✓	✓
Front map lights (2)	✓	✓	✓	✓
Boot light	✓	✓	✓	✓
Passenger vanity mirror with cover	✓	✓	✓	✓

Driver vanity mirror with cover	x	✓	✓	✓
Accessory power socket (front)	✓	✓	✓	✓
Rain-sensing front wipers	x	x	Opt*	✓
Follow-me-home headlights	✓	✓	✓	✓
Dusk-sensing headlights	x	x	Opt*	✓
Auto-dimming rear-view mirror	x	x	x	✓
AUDIO, COMMUNICATIONS & NAVIGATION	ACTIVE	ICON	DESIGN	EXCEL
CD player with WMA/MP3 reader	✓	✓	✓	✓
RDS radio	✓	✓	✓	✓
DAB radio	x	✓	✓	✓
Toyota Touch 2 touchscreen control multimedia system	x	✓	✓	✓
Toyota Touch 2 with Go satellite navigation	x	Opt	Opt	Opt
Bluetooth	x	✓	✓	✓
Aux-in/USB connection	✓	✓	✓	✓
Steering wheel controls	✓	✓	✓	✓
VENTILATION	ACTIVE	ICON	DESIGN	EXCEL
Manual air conditioning	x	✓	✓	x
Dual-zone climate control air conditioning	x	✓ (Hybrid)	✓ (Hybrid)	✓
Air recirculation and clean air filter	x	✓	✓	✓
SECURITY	ACTIVE	ICON	DESIGN	EXCEL
Transponder engine immobiliser	✓	✓	✓	✓
Remote control central double locking	✓	✓	✓	✓
Vehicle parts marking – major parts traceable to VIN	✓	✓	✓	✓
STORAGE	ACTIVE	ICON	DESIGN	EXCEL
1-litre bottle holder	✓	✓	✓	✓
Cupholders (2 front, 1 rear)	✓	✓	✓	✓
Glove box	✓	✓	✓	✓
Centre console storage	✓	✓	✓	✓

Front and rear door pockets	✓	✓	✓	✓
SEATING, UPHOLSTERY & TRIM	ACTIVE	ICON	DESIGN	EXCEL
Height-adjustable driver's seat	✓	✓	✓	✓
Height adjustable front passenger seat	x	x	x	✓
60:40 split-fold rear seats	✓	✓	✓	✓
Cloth upholstery	✓	✓	✓	x
Cloth and leather upholstery	x	x	x	✓
Soft-touch door and instrument panel inserts	x	✓	✓	✓
Leather gear shift knob	x	✓	✓	✓
Leather steering wheel trim	x	✓	✓	✓
EXTERIOR & BODY	ACTIVE	ICON	DESIGN	EXCEL
Colour-keyed doorhandles and mirrors	✓ (hybrid only)	✓	✓	✓
Colour-keyed front and rear bumpers	✓	✓	✓	✓
Mudflaps	x	Opt*	Opt*	Opt*
Metallic paint	Opt	Opt	Opt	Opt
Bi-colour roof and bodywork	x	x	Opt	x
Rear spoiler	x	x	✓	Opt*
Skyview panoramic roof	x	x	x	Opt*
Projector headlights	x	✓	✓	✓
LED rear light cluster	x	x	✓	✓
Front fog lamps	x	✓	✓	✓
LED daytime running lights	✓ (not LED)	✓	✓	✓
Rear privacy glass	x	✓	✓	✓
14in steel wheels	✓	x	x	x
15in 5-spoke alloy wheels	x	✓	x	Opt
16in silver alloy wheels	x	x	x	✓
16in machined finish alloy wheels	x	x	✓	x

Space saver spare wheel	✓	✓	✓	✓
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* available only as part of an option pack

Option packs

Protection Pack – Icon, Design, Excel	Front and rear mudflaps
	Aluminium scuff plates
	Rear bumper protection
Style Pack – Active, Icon, Design, Excel	Chrome boot and diffuser trims
	Chrome sill trims
	Chrome tailpipe finish
Parking Pack – Icon, Design, Excel	Front and rear parking sensors
Convenience Pack – Design NB Reduced pack content and lower price for Design Hybrid model	Rain-sensing wipers
	Dusk-sensing headlights
	Automatic air conditioning
	Power door mirrors with auto-folding function
	Smart entry with push button start
Premium Pack – Excel	Smart entry
	Toyota Touch 2 with Go
	Power door mirrors with auto-folding function
	Rear spoiler

Ref: 170110M