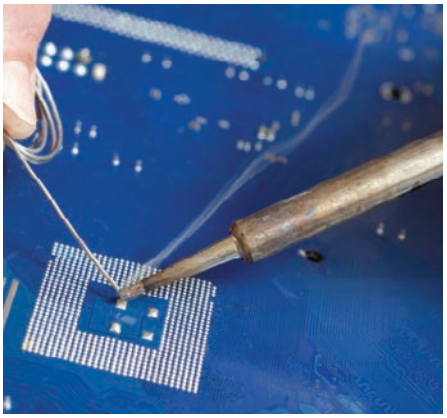
The M2M adoption barometer 2013

A unique insight into what's driving M2M and what the future holds

power to you



Circleresearch
FRESH PERSPECTIVE

About this paper

M2M is attracting attention on a global scale. Analysys Mason forecasts that the number of M2M device connections will grow to 2.1 billion by 2021.[1] In our own research, 78% of respondents said that M2M will be at the core of successful businesses in the future.

But what does this mean for you, as an individual business investigating M2M? What's going on in your specific region, and in your industry? How do your expectations and concerns about M2M compare against those of your peers? What's likely to change during the next few years?

To answer these questions we commissioned specialist B2B research firm Circle Research to canvass the opinions of IT and business managers, directors and C-level executives that are involved in setting M2M strategy for their organisation. They represent companies:

- That have 250 or more employees (19% have more than 10,000 staff).
- From five key M2M sectors (see Figure 1).
- From 10 countries, representing three major regions (see Figure 2).

From an initial base of 653 respondents we conducted a detailed survey of a representative sample of 327 people, and finally held in-depth interviews with 20 senior decision-makers. We also gathered commentary from one of the leading experts on the global M2M marketplace — Steve Hilton, principal analyst at Analysys Mason.

The result is a report with a broad industry and global coverage that gives a unique perspective on M2M. We hope that its combination of deep-dive research and expert commentary will enable you to benchmark where you are today and help you to move forward on transforming your business with M2M.

We'd love to hear what you think — get in touch at m2m@vodafone.com.

Erik Brenneis

Director, M2M, Vodafone

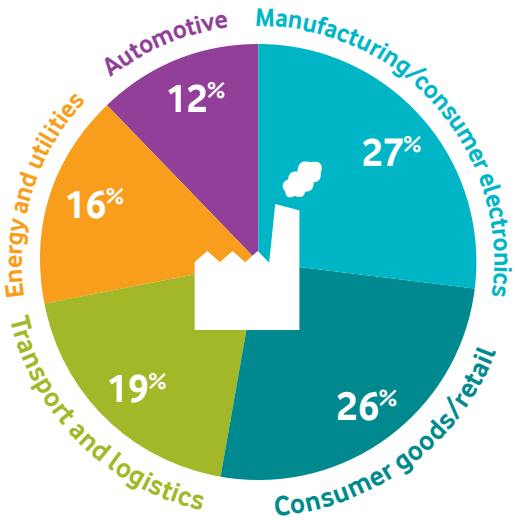


Figure 1: Industry sectors represented

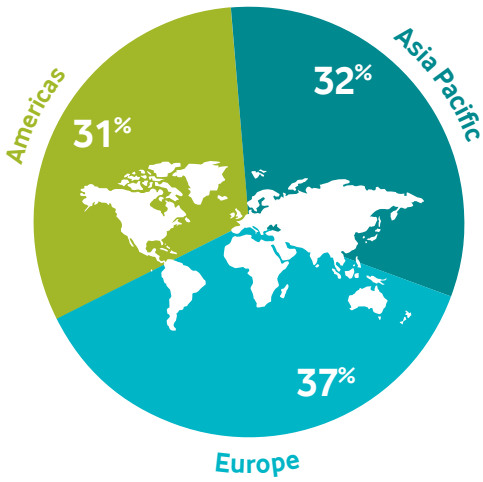


Figure 2: Geographical spread of respondents

1. M2M device connections, revenue and ARPU: worldwide forecast 2011–2021, Analysys Mason, May 2012

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What is M2M?

Machine to machine (M2M) communication is what happens when cars, white goods, shipping containers, security cameras, TVs, industrial machinery, drinks coolers — in fact, nearly any fixed or mobile assets — are connected. Using M2M, these assets can send and receive data and requests to each other and to central management systems, autonomously and often in real time, opening up a whole new world of opportunities for business agility and efficiency.

Executive summary

Our findings make one thing very clear: every organisation is treading its own path on the road to M2M, from initial strategy to final implementation. Some have already arrived; others are just starting out. But there are some clear trends in how the technology and its adoption are evolving.

Shifting expectations

It's not just regulation and legislation that are prompting organisations to consider M2M. The cost savings that they can realise through automation, combined with process and productivity improvements, all promise a way to increase competitive advantage in difficult market conditions.

But once businesses implement M2M, many find that the savings they anticipated are just the beginning. These organisations do realise cost savings, but the primary benefits relate to greater agility and efficiency — and better customer service.

Changing challenges

At the early stages of M2M strategy development, organisations identify two main barriers to implementation: high expected costs, and security concerns. As organisations start to implement their strategies, new obstacles appear on their radars: the perceived complexity of the supplier marketplace and the long lead-time between cost and return on investment. But despite these concerns, the benefits are within reach: most organisations that implement M2M see clear ROI, and find no major barriers to further investment.

The outlook is bright

Our research suggests that the M2M industry will evolve in three ways during the course of the next few years:

- **Costs associated with M2M implementation will fall** — lowering one of the major barriers to adoption that organisations currently encounter. We expect this to result in a surge of M2M projects.
- **Smaller organisations will catch up and race ahead** — while today large organisations are most mature in M2M adoption, by 2015 organisations with fewer than 10,000 employees will be noticeably more advanced. Large businesses can't afford to be complacent.
- **Industry adoption will change** — the manufacturing and consumer electronics sector in particular has the most potential to benefit from M2M and will lead the growth in adoption over the next three years.

How do you **compare?**

Let's take a look at the current state of play in the M2M marketplace and examine which industries and regions are at the forefront of embracing the technology.

Pioneers to laggards

M2M is here today and could drive the next big thing in your industry. It may have only just appeared on the radar for many companies, but others are already reaping the rewards. How do you compare?

> “Everybody is talking about M2M but thinking about how to use it, how to provide services, reduced costs, increase revenues... Innovative, business-oriented, commercial solutions are appearing. This is making the market more attractive.”
>
> Director, consulting firm, Europe

A top priority

Our research shows that 55% of respondents rank M2M as a key priority, and 9% go even further — they rank it as their number one priority. Only 8% rank it as a low priority. But how many organisations have actually implemented it in their business?

Figure 3 shows our respondents' level of M2M adoption. Leading the race are the 12% of businesses that have already launched their M2M strategy — the pioneers.

While 12% is a relatively small percentage, the big picture shows broad interest in M2M. Already more than four out of five organisations have committed to adopting M2M, and 60% have built their initial strategy. Only 17% haven't actively evaluated it.

And this broad interest is largely unprompted — just 26% of our respondents say they've been approached by an M2M supplier directly.

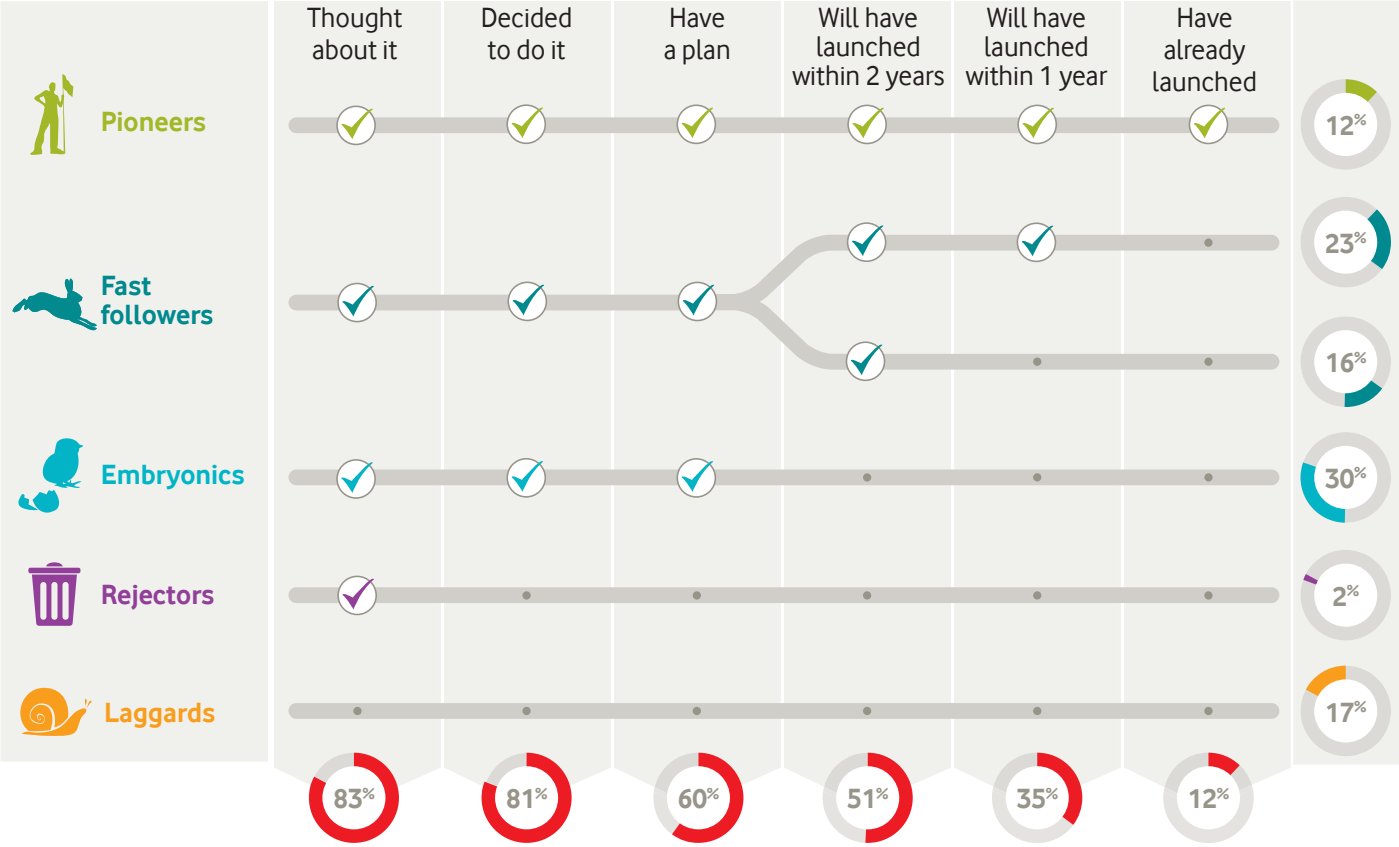


Figure 3: Organisations are spread at different stages of the M2M 'journey'

"Launched" can mean many things

Among those M2M 'pioneers' that have launched some M2M solutions to market, there is a large diversity of experience. It ranges from those that implemented first-generation M2M and now may want to build on it with new services and process integration, or expansion into new regions, to those that have already embedded M2M technology deep into business processes.

2015 is the tipping point

With 38% of businesses saying they'll join the pioneers and launch their M2M initiative within the next two years — the 'fast followers' — half of businesses in our five key sectors will have M2M in place by 2015.

As so many businesses press ahead with implementation, those who have not yet acted will have to decide whether to embrace the opportunity, or risk being left behind.

What does "launched" mean?

"We will keep on creating applications and machines for M2M and we will broaden our business into different sectors. We think we have 2,500–3,000 M2M cards up and running by now and expect 25,000–50,000 machines within 3-5 years."

Business Development Manager, security provider, Europe

"M2M has become a standard component in our product innovation and product delivery process."

CIO, manufacturing and consumer electronics, Asia Pacific

At a glance

- **Prioritisation** — two-thirds of businesses that are considering or implementing M2M consider it a "key priority".
- **Progress** — businesses are at varying stages of implementing M2M strategies; 88% are still in development.
- **Expectations** — half of businesses expect to have launched their M2M strategy by 2015.

Industry adoption

Not all sectors are equally advanced in their M2M adoption. Why? Several factors may come into play:

- **The current technical and operational maturity of each sector** — since M2M depends on integration with other IT systems and with business processes to produce results.
- **Availability of clear, industry-specific M2M solutions** that they can buy direct from a single vendor — instead of shouldering the cost and risk of developing themselves in-house.
- **Differences between regulatory environments** — such as around data privacy and even hardware certification.
- **The mindset of the business leaders in each market** — are they technology averse, or are they ready to embrace the potential benefits that new technologies can offer?

Figure 4 shows the percentage of respondents in each sector, and the average overall, falling into each category of adoption. The automotive sector is currently the most pioneering in M2M. 19% of the automotive organisations we interviewed had already launched an M2M strategy, while 40% are expecting to launch theirs in the next two years. There are an equally high number of fast followers in the transport and logistics sector, although there are fewer businesses that have already embraced M2M in this group.

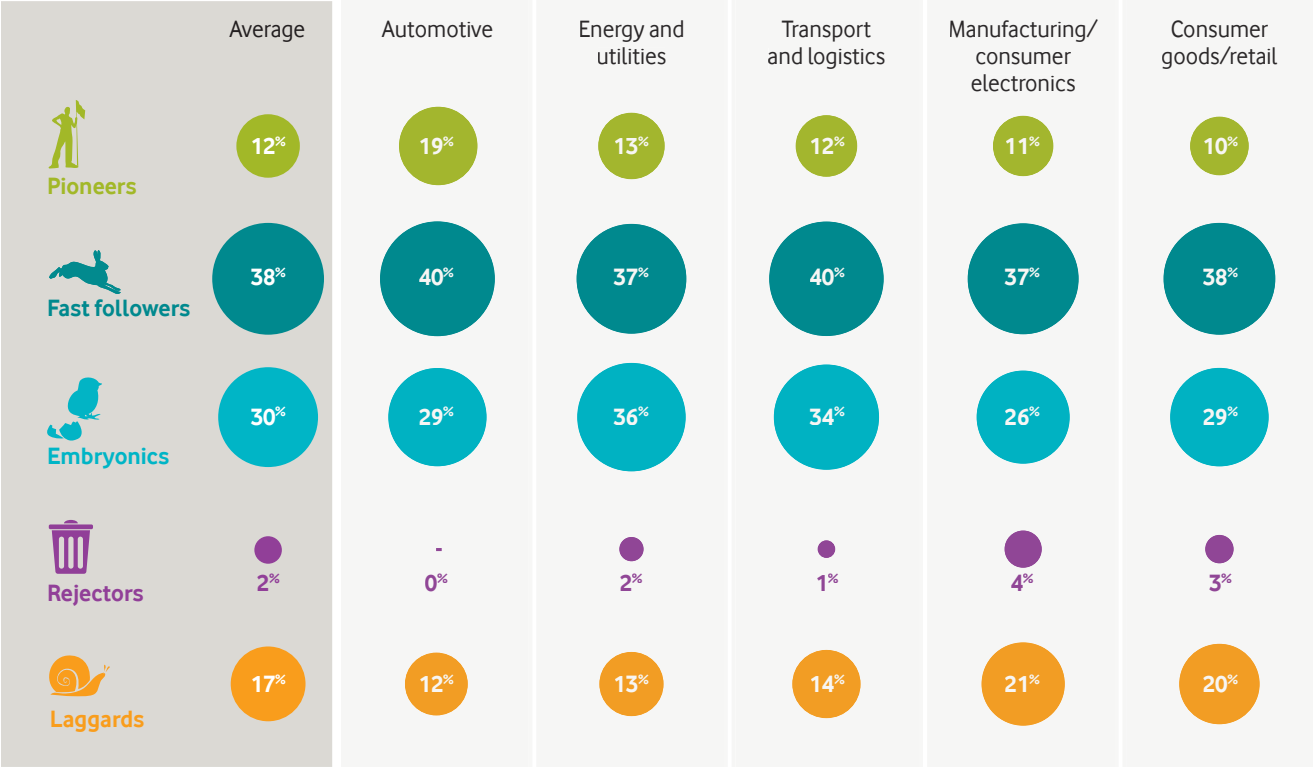


Figure 4: Industry adoption of M2M

Regional adoption

There's significant variation between the most and least developed regions when it comes to M2M adoption, as Figure 5 shows. The Asia-Pacific market has seemingly leap-frogged Europe and the Americas in terms of technology adoption. In Asia-Pacific, 62% of organisations expect to have launched their M2M initiative by 2015, compared to just 35% in America.

Why? We doubt it's to do with the operating environment for M2M — 52% of organisations we surveyed said they operated on a global basis, suggesting that, for example, regional availability of mobile networks is not a factor.

Instead, we think the difference stems from the business environment where each organisation is headquartered. The Asia-Pacific region was less affected by the 2009 recession than Europe and the Americas, and has therefore been able to continue investing more heavily in technology to support core industries.

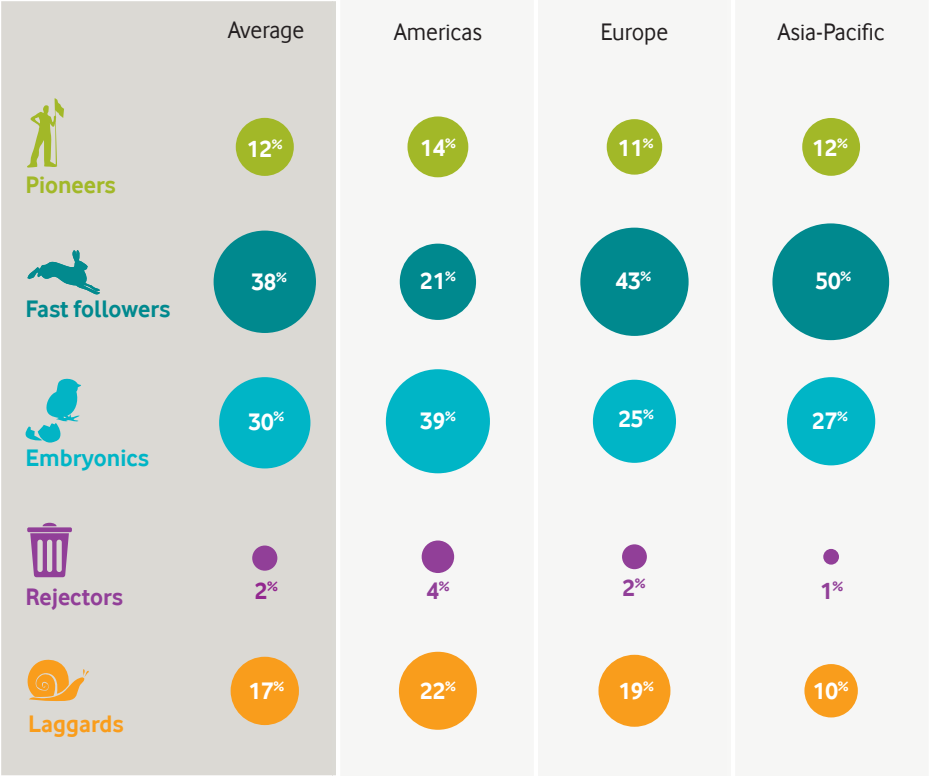


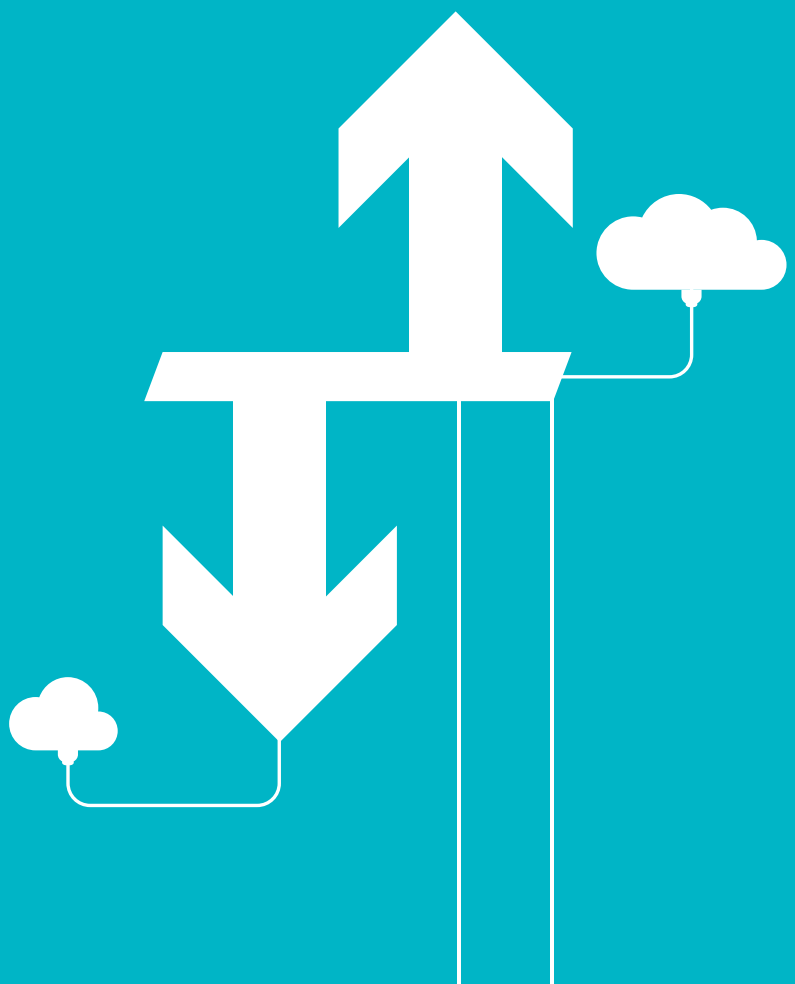
Figure 5: Regional adoption of M2M

At a glance:

- **Industries** — Automotive companies are ahead in M2M adoption: 19% vs just 10% in consumer goods.
- **Adoption curve** — while each industry has its own profile, the same broad "adoption curve" is followed by each; most organisations are "fast followers" or "embyronics".
- **Regions** — Asia-Pacific is considerably ahead in adoption plans, with 62% launching by 2015, vs 35% in the Americas.

Hopes and fears

In this section we examine the factors that are motivating businesses to investigate M2M, and the concerns that may slow adoption.



The driving forces behind M2M

Any technology investment has to present a compelling business case and clear return on investment. Which benefits are putting M2M on the radar today?

Proactive vs. reactive

Figure 6 shows the key reasons for organisations investigating M2M now. It's a broad spread, with no one factor clearly dominating: M2M has so many applications that it can be viewed in the context of all kinds of business initiatives, depending on the imagination and ambition of the project leader.

But looking more broadly, the most popular motives relate to core business goals — such as cost, productivity and beating the competition — while the least are more "reactive", such as new legislation capping the cost of M2M's data transmissions, or the need to respond to regulatory demand for using M2M. Organisations seem to be investigating M2M based squarely on what it can do for the business.

It's particularly interesting to note that 41% of respondents are investigating M2M specifically to improve their competitive advantage, and when we asked directly, 82% of respondents agreed that early adopters of M2M will gain competitive advantage. First-mover advantage is clearly a major driver, and M2M is not just an invisible, back-room technology investment — it's strategic.

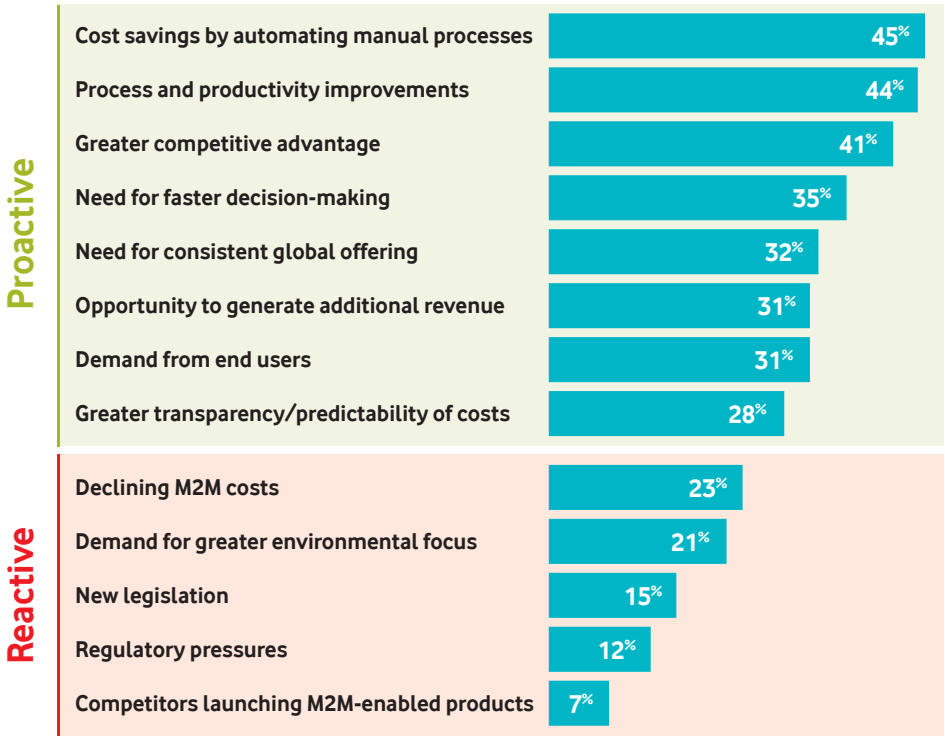


Figure 6: Key drivers for M2M adoption. (Note: multiple responses allowed)

The analyst's view

analysys mason

Objectives in consumer electronics

The top motivator for M2M adoption in the consumer electronics and manufacturing sectors is not to save cost but to gain competitive advantage.

That's because the manufacturing sector in developed countries is experiencing a metamorphosis. In order to compete with the lower costs in emerging countries, manufacturers from developed markets must constantly innovate. Differentiation of the end product is not enough. These manufacturers must create value-added services to include with their products that are not easily copied. Examples might include various warranty, asset tracking, security and predictive maintenance services. M2M can enable all these value-added services for manufacturing businesses.

At a glance

- **Drivers** — cost savings and productivity improvements are leading drivers for M2M.
- **Industry** — some sectors will be more affected by regulation; others driven by competitive advantage.

> “It’s difficult for enterprises to fully comprehend the value of the data they will receive from M2M connected devices. M2M is such a shift in the way we value the objects in our life. M2M can literally give voice to every non-human object. And even better, that voice is translated into a language we can understand using data aggregation and analytics. It’s a completely radical concept and it doesn’t surprise me that the cost savings benefits are eclipsed by other more powerful benefits post-launch.”
>
> Steve Hilton, Analysys Mason

Reactive drivers

The main reactive force behind M2M adoption is regulation. For example, in the energy and utilities sector, regulators are demanding providers roll out smart metering solutions to better control rising energy costs.

Similarly, in regions such as the EU, the European Commission wants car manufacturers to enable their vehicles to automatically call the emergency services in the event of an accident — a perfect M2M use case.

Since our sample represents businesses across a range of industries and geographies, it is little surprise that only 12% of respondents actually voted for regulation as their main driver for M2M adoption. But for those industries where legislation does apply, it clearly can’t be ignored.

Benefits and ROI

Plans are all very well — but how do they translate into reality?

94% of businesses see some return from M2M, with 36% seeing significant return. Transport and logistics and energy and utilities see the best results; automotive by far the least. Smaller organisations tended to see better results, perhaps reflecting the time it takes for M2M to become embedded in business processes.

This level of ROI may be seen as good or bad depending on the individual organisation. We saw a wide spread or ROI expectations in our qualitatitive interviews. For example, one respondent said: “Right now we’ve targeted very modest: 7-8% revenue generator once we roll the solution out completely. ” While another said: “Usually we try to get a full return on investments within 24 months. We’re a little aggressive but it’s a goal.”

The analyst’s view: benefits and ROI

analysys mason

Can M2M deliver everything that organisations hope?

Many M2M solutions have an easily quantifiable business impact — reduced inventory turns, fewer manufacturing defects and lower transportation costs. But the impact of some M2M solutions is more difficult to quantify — increased innovation, new revenue sources and better customer relationships.

The automotive sector is both the most pioneering sector and the sector where organisations have seen the lowest return on investment (ROI). Only 14% have noticed a significant ROI – compared to 37% of all businesses – while 29% note little or no return. What’s affecting ROI for the automotive industry?

The planning cycles for new product launches in the automotive sector are at least three years. It takes that long for a product concept to be drafted, tested, put into the assembly line process and produced. We are at the very early stages of M2M for connected cars and I think it is too early to say whether all of the various connectivity applications for cars (e.g. eCall, iCall, engine diagnostics, infotainment, security/surveillance) will yield acceptable returns on investment. The automobile is one of the remaining frontiers that lack consistent connectivity.

Expecting the unexpected

While the ROI is clear, it doesn't necessarily manifest as predicted. While saving costs stand out as the biggest driver in the M2M planning stage — and is undoubtedly a key factor in justifying investment — many business find improvements in decision-making are more significant after they launch, as shown in Figure 7. Cost savings decline in importance.

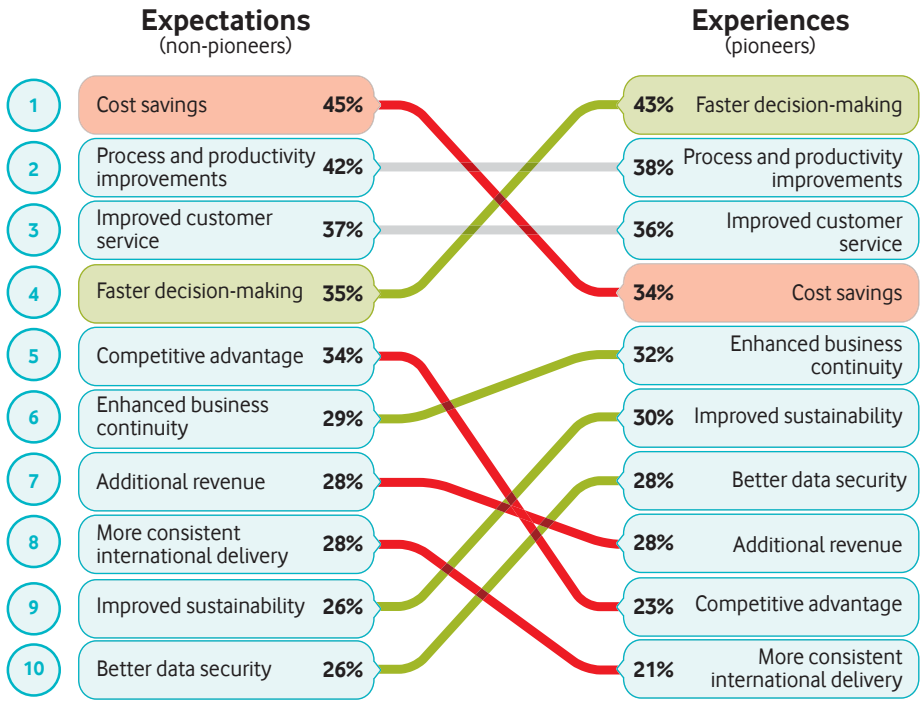


Figure 7: Factors driving investment in M2M don't always match the benefits it delivers

Case studies: what results have you seen?

"[M2M] gives us a view into how our products are doing and when our customers are going to be coming back for more."

IT Director, consumer goods and retail, Americas

"We are saving time being able to supervise gas pressure remotely — instead of sending someone to get the information. It allows us to react to events quickly."

Consultant and Project Manager, energy and utilities, Europe

"We're seeing the bottom-line numbers in our fuel consumption and I think that's one area where we can really tighten down on the operational costs."

IT Director, transport and logistics, Americas

At a glance

- **Reality vs expectations —** pioneers have seen different benefits than other businesses expect; less measurable factors like decision-making and customer service beat cost savings
- **ROI —** 94% of businesses see some return from M2M, with 36% seeing significant return. Transport and logistics and utilities see the best results.

Barriers to adopting M2M

If the anticipated benefits of adopting M2M change from the planning stages to launch, it's not unreasonable to expect that the perceived barriers to implementation will also change during the same timeframe.

Cost is the biggest concern

As shown in Figure 8, businesses in the early stages of M2M project development have three main concerns: about cost relative to benefits gained, security, and what M2M can do for them. This is understandable. For any large-scale project involving new technology, there will be uncertainty about whether it's worth the investment and the risk.

A much broader set of barriers gains in importance as projects progress. Cost and security remain concerns, but they're joined by issues around industry standards, implementation timescales and the complexity of the supplier marketplace. These are natural concerns as any project gets more real.

Most concerns drop off significantly after initial implementation, and the barriers to further investment fade away. Only one issue reasserts itself: understanding the benefits of M2M. As we've seen in our discussions about ROI, this can be explained by the difficulty that many companies have in measuring the intangible benefits that M2M delivers. It's worth noting that even the most significant concern at any stage was pointed out by less than one in three respondents.

> "Putting together complete M2M solutions can be challenging. Integrations between equipment, connectivity, applications and back-office systems require careful planning and consultancy services. The expected integration costs of M2M components can often scuttle M2M projects."
>
> Steve Hilton, Analysys Mason

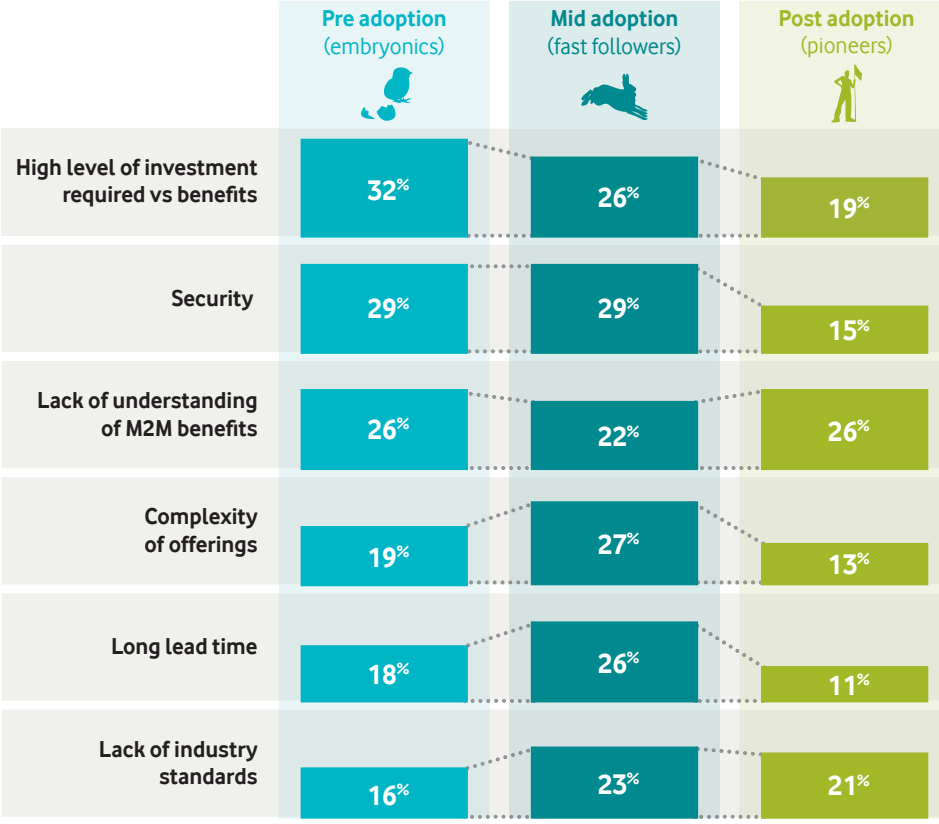


Figure 8: Barriers to adoption at each stage of implementation

Complexity makes rejectors "wait and see"

Rejectors — those who have considered M2M and decided not to pursue this strategy — state that there are four main justifications for the decision not to press ahead with it:

1. Lack of common industry standards.

2. High costs relative to potential benefits.

3. Lack of demand from customers or users.

4. Fragmented and complex marketplace.

Interestingly, most of these concerns — particularly the lack of standards — were not high on the agenda of our broader set of respondents. But we have seen these concerns before: these very same criticisms were levelled at revolutionary technologies such as ecommerce and the PC, and they suggest that the problem is not M2M's lack of suitability in the long-term.

Rejectors just don't think that the conditions are quite right today — as the technology and provider landscape matures, and as awareness of M2M grows, all of these concerns may well disappear.

It's enlightening to see that 96% of respondents feel that M2M will be relevant to their business in three years' time.

Why did you decide against M2M?

"It would be more efficient if we could decide on a connectivity solution and make it a long-term standard... Hardware is expensive and takes time to develop. Strict regulations in the automotive sector mean hardware is even more expensive to develop."

Managing Director, automotive, Europe

The analyst's view: ecosystem evolution

analysys mason

How will the M2M supplier marketplace change?

Today it can take 4-6 technology and communications suppliers to create and implement a single enterprise's M2M solution. This places a tremendous time, expense, risk and management burden on enterprise buyers. In order to facilitate implementation and improve the ROI of M2M solutions, technology vendors and service providers are rapidly forming partnerships focused on pre-integrated solutions to smooth implementations and lower costs.

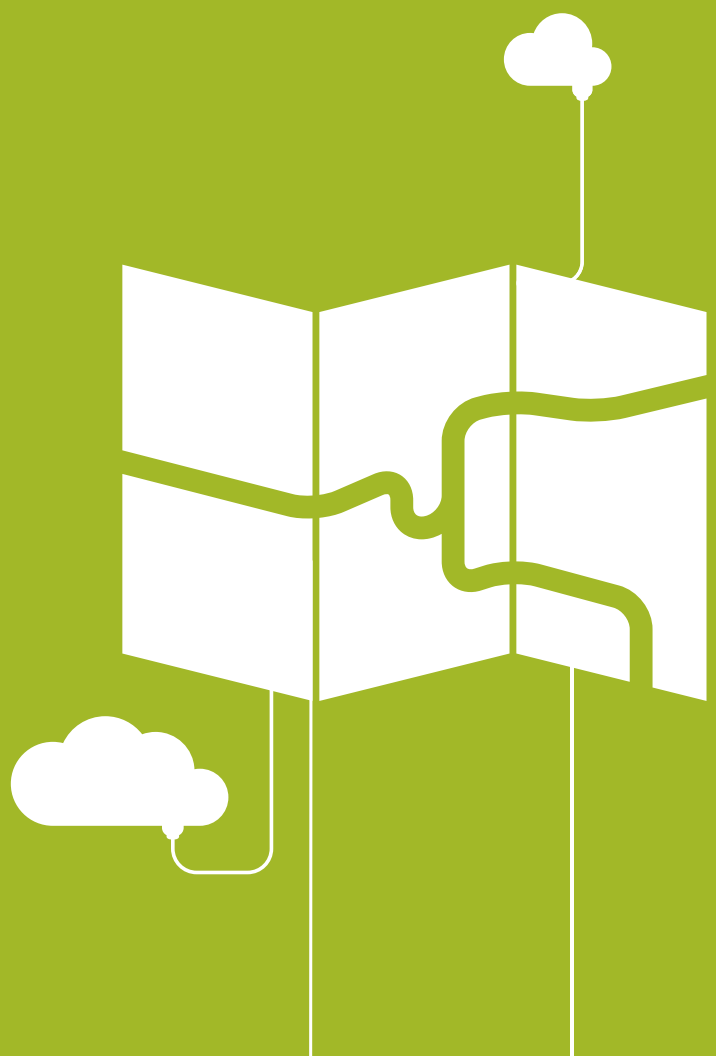
We also expect more mergers and acquisitions in the M2M ecosystem. We expect larger vendors and service providers to complement their existing solutions with applications and platforms that provide more complete horizontal or vertical offerings for automotive, industrial, connected home, energy/utility and security-related applications.

At a glance

- **Primary barriers** — cost and security are persistent barriers to entry, appearing both before and during adoption.
- **Rejectors** — those that investigate and reject M2M blame factors related to technological and market immaturity.

The **path** ahead

This section makes three predictions for the M2M market: how adoption rates will develop, whether large or small businesses will lead moving forward, and which industry we expect to get the most from M2M.



Three predictions for the future

Our research shows that perceptions and expectations of M2M are changing fast, so what's most important today may not even be on the radar five years from now.

Prediction 1. Falling costs will speed adoption

Like any major business decision, costs are at the heart of choosing whether to adopt M2M or not. As we've seen, expectations of cost savings through automation are one of the primary drivers of M2M investment in the early stages of decision-making. But we've also seen that the costs of M2M implementation (relative to the benefits) are one of the biggest barriers to adoption at every stage.

So it seems fair to say that falling costs — of connectivity, services and hardware — should tip the balance in favour of implementation. But is there any evidence of this? Possibly. Of the pioneer organisations that have already launched their M2M strategy, 21% said that falling costs were a key driver in their interest or investment in M2M. But none of them said that it was the main driver (Figure 9).

How important are falling M2M costs in driving your investment?

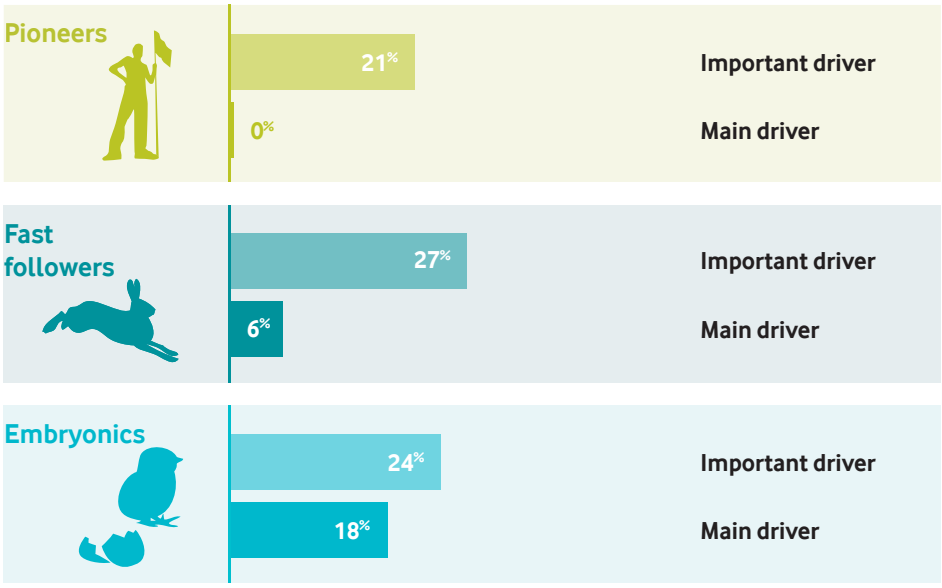


Figure 9: Are declining costs associated with M2M driving interest and investment?

By contrast, 27% of the 'fast follower' organisations said that declining costs would be an important driver, and 18% of organisations that have a strategy but no plan to launch said that declining costs would be the main driver of their investment.

As we've seen, cost is the main concern for organisations at the planning stage of adoption. But for organisations planning implementation, cost becomes one of many other concerns alongside timescales and technical complexity, and therefore cost lessens in relative importance.

As costs are a barrier to implementing M2M, it stands to reason that the rate of adoption will increase as hardware and connectivity becomes more affordable. We could reach the tipping point sooner than expected.

The analyst's view:
the cost and quality balance

Hardware, connectivity, platform, application and implementation costs will continue to decline. As the volumes of connections increase, it becomes more economically viable for vendors and operators to provide these solutions at lower per-unit prices.

However, equally important is the increase in the quality of these solutions. M2M solutions must be enterprise-grade. The devices, equipment, connectivity, platforms and applications must provide a high quality of service.

Suppliers that offer M2M solutions without enterprise-grade quality will quickly find themselves replaced in a market that values high quality. Remember, enterprises are relying on the timely and accurate delivery of new types of device data. If suppliers cannot deliver on those promises, enterprises will not realise the ROI initially estimated.

The analyst's view:
Why are so many large organisations falling behind?

While clearly some giant organisations are agile and forward-looking, in general big ships are slower to turn. These enterprises may have more legacy software, networks and processes that have to be considered when integrating M2M. They may have more layers of management to involve and more complex bid and approval processes. Some may even be complacent due to their size and see no reason to evaluate M2M.

Conversely, especially as packaged solutions become more widely available, smaller organisations can use their agility and relative infrastructure and process simplicity to make much more rapid progress through the adoption cycle.

Prediction 2. Smaller organisations will embrace M2M faster

Today, M2M appears to be a technology mainly for large enterprises. In our survey, 26% of large organisations (those with more than 10,000 employees) have already adopted M2M, compared to just 12% of small and midsized organisations (see Figure 10).

Perhaps organisations above the 10,000-employee "tipping point" have more budget to spend, or more in-house resources and expertise to assemble and manage a complete solution from multiple point hardware and software providers — after all, until recently, the M2M market lacked pre-configured packaged solutions that most smaller, less well-resourced organisations could buy and implement easily.

But looking ahead, the picture changes dramatically. As Figure 10 shows, over the next 12 months, 34% of smaller organisations will launch their M2M initiative, compared to just 18% of large organisations. By the end of our forecast window, in two years' time, 69% of smaller organisations will be using M2M, compared to 58% of large organisations — a significant difference.

Most surprisingly, 39% of large organisations say that today they are at the very earliest stage of adoption, 'considering their plans', compared to just 15% of the smaller organisations. These organisations have yet to develop a strategy — they have a long way to go.

The implications are clear: if you're part of a large organisation, watch out for smaller rivals gaining agility and competitive advantage through M2M. If you're in a smaller organisation, now is your chance to get ahead: the very largest players in your markets may be some years away from their own launches.

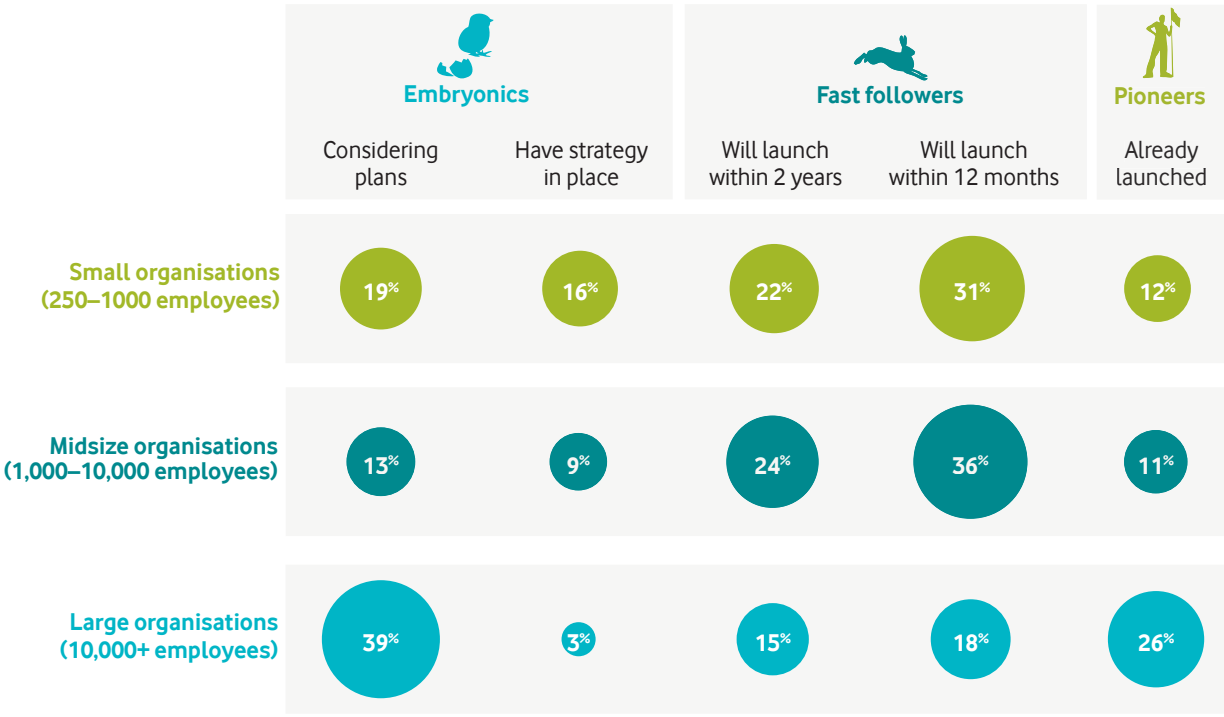


Figure 10: Smaller organisations lag in adoption today, but will quickly catch up

Prediction 3. The manufacturing and consumer electronics sector will lead growth

As we've discussed, the sectors currently leading the way in M2M implementation are automotive, followed by energy and utilities, and transport and logistics. The vast majority of respondents in these sectors are already focused on M2M now, while far fewer are still in the early planning and consideration stages. But of the top five industry sectors that we've examined, it's manufacturing and consumer goods that stands out the most.

Figure 11 shows that the manufacturing and consumer electronics sector has the most potential for growth. It has the lowest percentage of organisations that are currently developing or implementing an M2M strategy, making it the least 'advanced' of the five sectors that this report addresses.

It's also the sector that anticipates the greatest growth in the relevance of M2M. While only 28% of manufacturing and consumer electronics businesses see M2M as very relevant to their business now, twice as many (57%) think it will be very relevant in three years' time, as Figure 11 shows. Consumer demands for greater device connectivity and additional services certainly support this expectation.

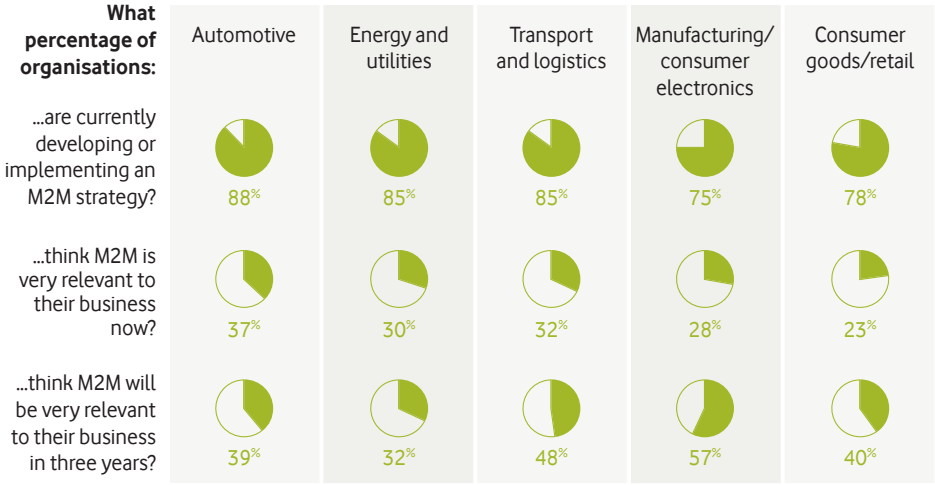


Figure 11: Sectors' likely growth prospects for next three years

The analyst's view: manufacturing and consumer electronics

The consumer electronics industry has already seen notable successes with M2M including e-readers, connected video gaming consoles and connected televisions. Gadgets sell. And adding connectivity – even to seemingly staid products like watches and radios – can lead to a renaissance for an entire consumer electronics category.

At a glance

- **Cost** — falling project costs will increase demand and accelerate adoption.
- **Organisational size** — by 2015, smaller organisations will have significantly outpaced larger companies in adoption.
- **Industry** — while manufacturing and consumer electronics organisations are behind in M2M adoption, they see the greatest relevance for M2M by 2015.

Conclusion

The importance of M2M is not in doubt. Our data shows that two-thirds of businesses that are currently considering M2M, or that are in the process of implementing M2M, consider it a key priority.

Adoption is accelerating

Since M2M is such a key priority, it's no wonder that the majority of our respondents plan to have a solution in place within two years.

So what are businesses hoping to achieve?

Respondents said that what they expected from their M2M initiatives often differ from the reality. Before implementation, the stated aim is to achieve cost savings and efficiency improvements and gain a competitive advantage.

Those who have already implemented the technology speak more about the improvements to business efficiency, agility and customer service — which are less tangible when predicting ROI.

Changing times

We've used our data to make predictions about how the use of M2M will evolve.

- The tipping point for M2M adoption could be nearer than some forecasts predict, as the costs of implementation continue to decrease.
- Smaller organisations will use their greataer agility take the lead in M2M adoption, leaving many of the largest organisations a year or more behind.
- The manufacturing and consumer electronics industry has the most potential to gain significant benefits from M2M.

It's clear that M2M is here to stay. Even those companies that have rejected M2M for now — due to cost, complexity and supplier immaturity — have stated that they would be open to reconsider their decision at a later date as the technology evolves.

Next steps

We've discussed the state of play for M2M adoption, reviewed the drivers and barriers to adoption, and made some predictions for what the future holds. Now it's over to you. What's your plan of action?

Step 1: Benchmark your progress.

Your response will depend on your organisation and it's strategy, but we believe that the first step is always to benchmark where you are against other companies in your industry and your region. If you're a laggard or a rejector while your peers are pioneers, is that a strategic decision, or have you simply been outpaced by the market? Does that matter to you?

Step 2: Look at the wider benefits of M2M.

If you're still in the process of considering M2M, dig deep into what your preconceptions are: what do you hope to achieve? Have you examined the full potential, particularly the "softer" benefits unrelated to cost savings? Building the business case for investment in M2M can be complex, just as for any broad transformational activity — but it's worth doing right.

Step 3: Choose the right provider.

Be realistic about the barriers ahead and how they'll change over time — every major IT and business-process initiative involves risks and costs. Choosing the right provider can help manage the costs of developing M2M and overcome many of the other challenges — such as technical integration, global delivery and building the right solution for your needs.

The last word

"With the right blend of business ambition, technology vision and expert support, M2M can deliver truly transformational results. And the possibilities are changing all the time, as new and creative M2M solutions emerge. It will be fascinating to see how different the state of adoption, and hopes for the future, will be next year."

Erik Brenneis, Director, M2M, Vodafone

To find out more about the wide range of M2M solutions available, and to read about the M2M experiences of companies in your industry, visit m2m.vodafone.com, or contact us on Twitter: @ Vodafone_M2M.

Further reading

Want to see more examples of M2M in use, and learn about the potential benefits? Find these whitepapers, case studies and much more in our resource centre at: m2m.vodafone.com/insight_news

M2M: Real-time data from remote machines

The potential of M2M communications is almost unlimited: applications include fleet and asset tracking; smart metering; building automation and improved security.

This paper explores the key business drivers behind M2M wireless communications, the different hardware, software and communications elements involved, and describes how to introduce M2M technology effectively on a global scale. With the needs of the global business in mind, we explain the benefits of M2M and why it's crucial to take an enterprise-wide view when implementing solutions.

Industrial remote asset monitoring: raise service levels and cut costs

This paper explores how M2M can change how companies manage and maintain widely distributed industrial equipment, resulting in better equipment uptime, dramatically lower servicing costs, and even the ability to offer entirely new commercial models This paper is intended for industrial equipment manufacturers that service the equipment they sell, but it's also relevant for any organisation that has an extensive estate of equipment to maintain.

M2M for business security: connect and extend your site and asset security

Security is an industry in flux — technology has evolved rapidly, creating new possibilities for securing businesses and their assets against theft, fire and other risks. Machine to machine (M2M) communications in particular has enabled a step change in functionality in three security applications: alarm systems, CCTV and asset tracking. This paper is specifically aimed at manufacturers and distributors of security equipment, but will also be relevant for enterprises with significant or specific in-house security needs.

Take control of your energy usage: M2M for Energy Data Management

The energy efficiency of offices, stores and other sites is becoming a key commercial priority for all organisations and a focus for government regulators, too. This paper explores how organisations can use machine to machine (M2M) communications to track and drive down their energy usage and costs through a solution known as Energy Data Management (EDM). It is relevant to companies in retail, manufacturing, the public sector and for any organisation that has many energy suppliers, different types of contracts and bills.

About the contributors

Vodafone

Vodafone is one of the world's largest mobile communications companies by revenue with approximately 404 million customers in its controlled and jointly controlled markets as of 31 March 2013. Vodafone currently has equity interests in 30 countries across five continents and around 50 partner networks worldwide. Our solutions span mobile, fixed line, machine-to-machine and more.

Regardless of whether you need an end-to-end solution or M2M managed connectivity, we can help you to harness the full potential of M2M technology and keep your organisation ahead of the game. We can bring together and manage all the elements of an M2M deployment, whether global or national, from consultancy and project management through to the supply of pre-configured connected terminals, systems integration and data collection and analysis.

We've been ranked as the number-one provider for overall M2M excellence by leading telecoms analysts, such as Current Analysis, Machina Research and Analysys Mason. Current Analysis recently positioned Vodafone M2M as a leader in the global M2M services market in its report "M2M Service Providers: How They Stack Up in 2012". You can trust us to know M2M better than anyone else.

Find out more at m2m.vodafone.com

Circle Research

Circle is the business-to-business market research agency. We create Eureka! moments — deep insights into our clients' brand, customers and market. Insights which will transform their view of the situation and provide a powerful competitive advantage.

What's the secret? Clients say we "get it". Our unique blend of experience and understanding allows us to see things that other agencies miss. We understand their market because we're the business-to-business research experts. We're methodology neutral – skilled in qualitative and quantitative techniques so that we can recommend the very best solution. And we're international: we've conducted studies in over 100 countries, all to the exacting ISO20252 standard.

Find out more at circle-research.com

Analysys Mason

Analysys Mason is a global specialist in telecoms, media and technology (TMT). Our consultants work with clients around the world to help shape their understanding of the future so they can thrive in these demanding conditions. Most importantly, we never forget that the point of consultancy is to make a tangible difference to our clients' businesses. To do that, we have developed rigorous methodologies that deliver real-world results.

Steve Hilton is the lead analyst for Analysys Mason's Enterprise and SME Strategies research programmes. His primary areas of specialisation, which focus on large and small enterprises, include M2M, Internet of Things, fixed and mobile communications services, cloud services, and sales channels. Steve has 20 years' experience in technology and communications marketing. Prior to joining Analysys Mason, he managed the Enterprise and SMB team at Yankee Group. He has also held senior positions at Lucent Technologies, TDS and Cambridge Strategic Management Group (CSMG). Steve is a frequent speaker at industry and client fora around the world. He holds a degree in economics from the University of Chicago and a Master's degree in marketing from Northwestern University's Kellogg School of Management.

Find out more at analysysmason.com

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