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CONSUMER ADOPTION OF DISRUPTIVE TECHNOLOGIES

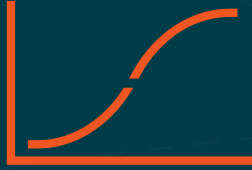
GLOBAL X

by Mirae Asset

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Beyond Ordinary ETFs™

2019



CONSUMER ADOPTION OF DISRUPTIVE TECHNOLOGIES

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New technologies and the companies that develop them have become deeply ingrained in popular culture. Product unveilings make front page news. Technology conferences are attended or live-streamed by thousands. Cryptic tweets and quotes from CEOs are dissected for days. Yet despite the intense interest in disruptive technologies, how commonplace are these game-changing products in our everyday lives?

In May 2019, we partnered with Engine, a leading market research provider, to survey 500 consumers about their adoption of new technologies ranging from electric vehicles to FinTech.



TECHNOLOGIES REVIEWED



Electric Vehicles



Genomics



Ride-Share Apps



Robotics



E-Commerce



FinTech



Internet of Things

Key Takeaways

- Overall adoption and comfort level with many disruptive technologies remains low across generations. This could be due to consumers waiting for the technology to become more established, for prices to fall, or because they are simply entrenched in their current habits.
- Despite low current adoption, consumer *interest* in new technologies is high, indicating that these products are likely to be considered for future purchases. We believe this indicates strong growth is ahead for many of these products and the companies that make them.
- Among cohorts, the Millennial generation is likely to be the major driver of adoption, due to a unique affinity for tech-focused products.

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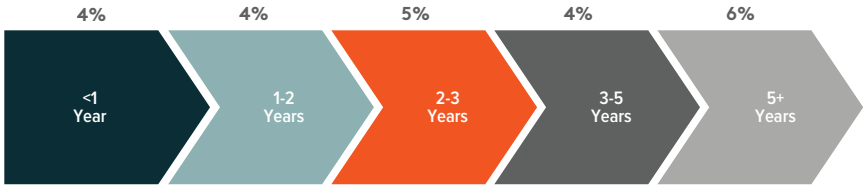


Electric Vehicles

While just 5% of consumers use an electric vehicle on a weekly or more frequent basis, 17% expect to purchase an EV in the next 5 years.

WHEN WOULD YOU PLAN TO PURCHASE AN ELECTRIC VEHICLE?

EXPECTED PURCHASE OF ELECTRIC VEHICLE (AMONG TOTAL)



Ride Sharing Apps

While 75% of consumers are users of ride sharing apps, less than 6% use them on a weekly or more frequent basis.

HOW FREQUENTLY DO YOU USE RIDE-SHARING APPS?

RIDE-SHARING APP (CURRENT USAGE FREQUENCY)



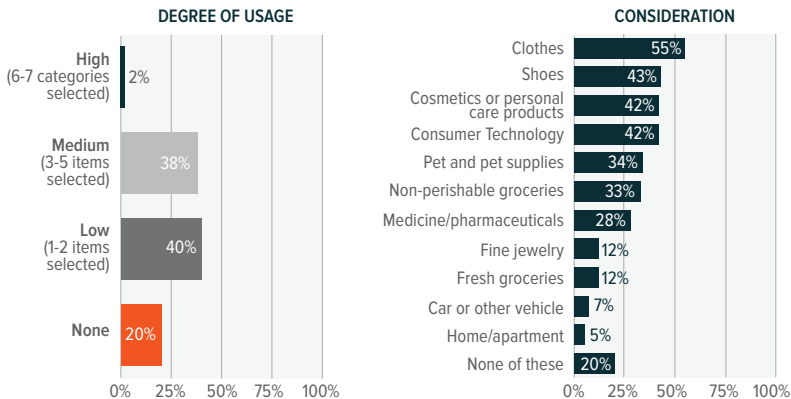
E-Commerce

While over 40% of the population is comfortable buying smaller-ticket items online, like clothes, shoes, and cosmetics, less than 15% of the population is comfortable buying big-ticket items like fine jewelry, cars or other vehicles, or a home/apartment.



WHICH OF THE FOLLOWING, IF ANY, WOULD YOU BE WILLING TO PURCHASE ON THE INTERNET WITHOUT FIRST HAVING SEEN IT IN PERSON?

ONLINE PURCHASE ADOPTION

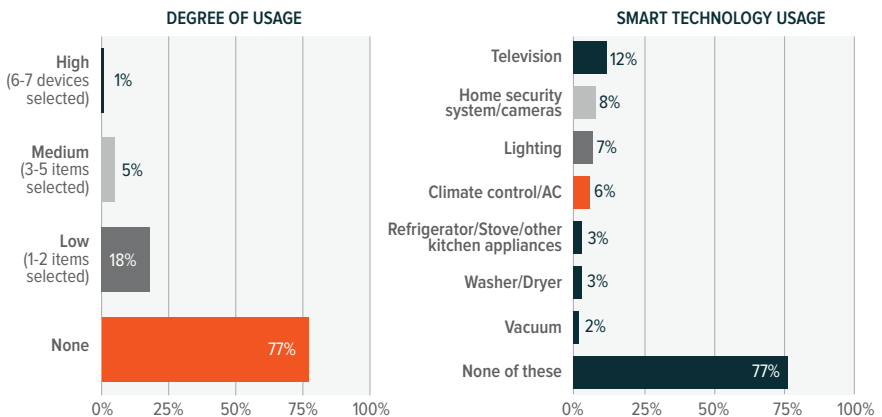


Internet of Things/Smart Devices

77% of consumers are not using smart home devices like smart TVs or smart appliances.

WHICH OF THE FOLLOWING HOME APPLIANCES, IF ANY, DO YOU OPERATE FROM A MOBILE DEVICE?

SMART HOME TECHNOLOGY ADOPTION



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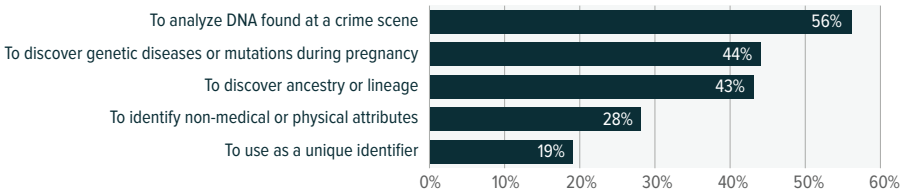


Genomics

Comfort level with using genomics or DNA technology across various use cases remains low.

HOW COMFORTABLE ARE YOU WITH GENE SEQUENCING OR DNA TECHNOLOGY BEING USED FOR THE FOLLOWING?

COMFORT WITH TECHNOLOGY: GENE SEQUENCING/DNA (EXTREMELY/VERY COMFORTABLE)

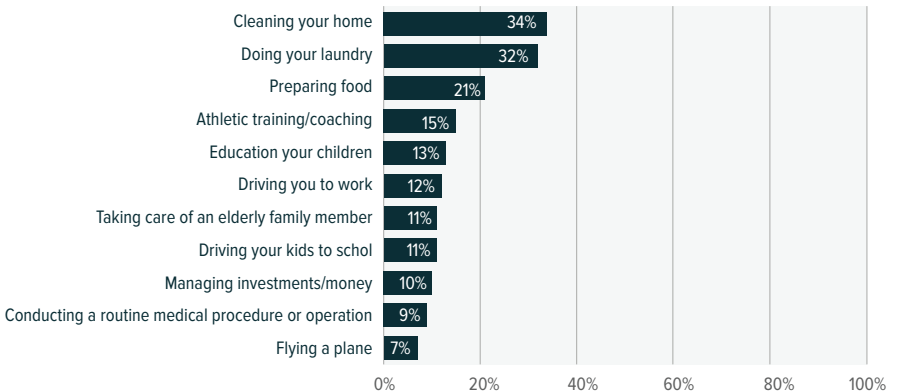


Robotics

Similarly, comfort level with incorporating robotics into everyday tasks remains low.

HOW COMFORTABLE WOULD YOU BE HAVING A ROBOT COMPLETE THE FOLLOWING TASKS?

COMFORT WITH TECHNOLOGY: ROBOTICS (EXTREMELY/VERY COMFORTABLE)



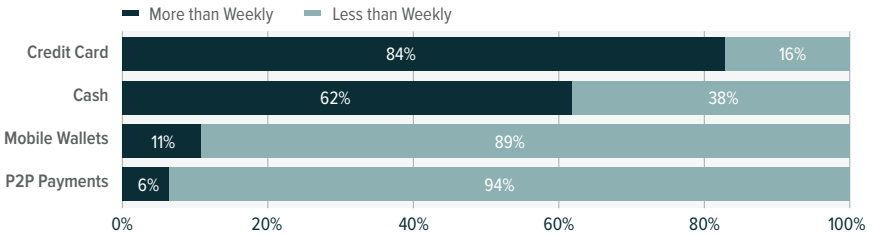


FinTech

Cash isn't king; credit cards are, with 84% usage on a weekly basis. Comparatively, only 11% of consumers use mobile wallets on a weekly basis, and just 6% use peer-to-peer (P2P) payments at the same frequency, demonstrating low penetration of the latest FinTech innovations.

HOW OFTEN DO YOU PAY FOR SOMETHING USING THE FOLLOWING?

FORM OF PAYMENT



Millennials will be the driving force of adoption

Much has been made about the different spending patterns of the Millennial generation versus older cohorts, particularly their affinity for technology. These unique preferences are apparent in our survey, as Millennials frequently indicated higher adoption, greater interest, and more comfort in new technologies than the next largest population group in the US, the Baby Boomers.

CONSUMER ADOPTION OF DISRUPTIVE TECH

MILLENNIALS WILL BE THE DRIVING FORCE OF ADOPTION



Ride-Sharing App

	INITIAL USAGE (AMONG TOTAL)			CURRENT USAGE			
	Early Adopters	Moderate Adopters	Late Adopters	Daily	Weekly	Less than weekly	Not familiar with it
Millennials	10%	38%	32%	3%	9%	68%	20%
Baby Boomers	8%	20%	49%	1%	1%	76%	23%



Electric Vehicles

	EXPECTED PURCHASE (AMONG TOTAL)			CURRENT USAGE			
	Early Adopters	Moderate Adopters	Late Adopters	Daily	Weekly	Less than weekly	Not familiar with it
Millennials	7%	18%	9%	4%	3%	60%	33%
Baby Boomers	2%	9%	6%	1%	1%	69%	29%

	ONLINE PURCHASE BEHAVIOR			
	None	Low	Medium	High
Millennials	15%	46%	37%	3%
Baby Boomers	22%	36%	40%	2%

COMFORT WITH TECHNOLOGY (EXTREMELY/VERY COMFORTABLE)

		Millennials	Baby Boomers
GENE SEQUENCING/ DNA	To analyze DNA found at a crime scene	46%	64%
	To discover genetic diseases or mutations during pregnancy	44%	43%
	To discover ancestry or lineage	44%	42%
	To identify non-medical or physical attributes	33%	22%
	To use as a unique identifier	18%	17%
ROBOTICS	Cleaning your home	49%	28%
	Doing your laundry	47%	25%
	Preparing food	37%	12%
	Educating your children	25%	6%
	Driving you to work	24%	4%
	Athletic training/coaching	24%	9%
	Taking care of an elderly family member	21%	5%
	Managing investments/money	19%	3%
	Driving your kids to school	18%	5%
	Conducting a routine medical procedure or operation	13%	4%
Flying a plane	11%	3%	

	MOBILE WALLETS		P2P PAYMENTS	
	More than Weekly	Less than Weekly	More than Weekly	Less than Weekly
Millennials	31%	69%	27%	73%
Baby Boomers	6%	95%	1%	99%



CONCLUSION

While we frequently discuss new technologies like electric vehicles, smart devices, and FinTech, we are still early in their adoption cycle. Consumers are fickle and habit-forming, making it difficult for new technologies to replace the old guard. Yet despite these challenges, many of these innovations are starting to gain a foothold, driven by the consumption habits of the Millennial generation. As technology continues to progress and Millennial spending power increases, we believe that many of these disruptions will achieve widespread adoption.

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