

Good Things Happen Podcast Season 3 Episode 5
TITLE: Speed, Tech & Trends: The Auto Industry Revolution
Guests: Itay Michaeli & Dan Fallow

Jorian (00:11):

Welcome to Good Things Happen, the podcast series that shows the human side of banking. And in today's case, we'll be talking pretty fast humans. Every business is either being challenged by or enabled with technological innovation. And while some industries experience instant disruption, others are taking more time. It's commonly understood that the automotive industry is unsustainable in its current form and is going to look fundamentally different in future. But change is taking time. Is it the high cost of motoring, the requirements for entirely new infrastructure, technology or behavioral change required from drivers?

Today on Good Things Happen, we have two automotive experts who look at the world of motoring from very different perspectives. Dan Fallow has one of the best jobs in the world as technical director of the Aston Martin Formula One team. Joining Dan is Itay Michelli. Itay is director at Citi Research covering the automotive sector and heads the global auto pod for Citi Research. An engineer and a market analyst, between them I'm sure they can shine some headlights on the futures of cars. As ever, we're going to start with personal stories. Dan, I ask everybody this, I think you might be the first person who says yes, but did you want to be in Formula One when you were a small boy at school? Tell us how you got to what you're doing now.

Dan (01:35):

Yes, well, I'm happy to answer yes to that question. I think I did from an early age have a fascination with cars particularly, but also racing cars. I was fortunate enough to live in the UK where we had a Formula One race in Brands Hatch and also in Silverstone. They used to alternate, and I saw some of the greats of Formula One. Formula One used to be very accessible in terms of cost of tickets and access to things like the paddock in those days. And I did have a fascination with that.

And then the other thing is that I was very interested in engineering and particularly in aerodynamics. One thing I hadn't really appreciated was that it was possible to combine the love of aerodynamics and cars. So, I thought that originally, I would go into aircraft. I think that was the most obvious thing to do, but particularly in Formula One, aerodynamics has become a very important engineering discipline through the years, ever since the 60s really. And when I got into university, I realized that you could dovetail those two things together. So, it became something that I really wanted to do from a fairly early age. But yes, in order to say, do I have the best job in the world? I think that's a very good introduction, I would certainly say that.

Jorian (02:43):

How about you, Itay? Were you into cars when you were a little boy, or do you want to be an analyst in Wall Street?

Itay (02:51):

Yeah, when I was a boy, although I did want to be a bus driver when I was five or six years old. So, some attachment to automotive then that kind of thing transferred to wanting to be a pilot. But I like numbers and numbers lent themselves well to accounting and finance and then of course getting into investments and stock market. And so eventually I guess those worlds collided. But I did even go back to college, sort of want to be in the business of stock research, like the idea of creativity of following

industries, companies and just talking to experts and really fascinating people to predict where industries and companies will go. And certainly automotive, particularly in the past five or 10 years, has become extremely interesting in terms of the rate of change. And so, it's an industry where you're constantly learning, which is also pretty exciting.

Jorian (03:48):

Cool. So, Dan was it this year that you arrived as technical director for Aston Martin? And tell us about how it's been in that role, what that role entails. We're just about halfway through the season, so I think this podcast is recorded about a month before it's going to be aired, but Aston Martin are doing rather well. You've got top three in the Drivers and top three in the Constructors League at the moment, just over halfway through the season. Tell us about your arrival at Aston Martin and I'm sure all this success is entirely down to you, is it?

Dan (04:26):

I certainly wouldn't claim responsibility for all of this. Except I know there's a huge number of people here who contribute to whether the car goes well or not. Fortunately, we're doing a great job this year, very proud of everybody that contributes to it. But I got to Aston Martin just over a year ago. This is a team that's been in one form or another around for quite a long time, as Jordan originally, and then as various sort of Midlands and other names that they've had along the way. It's traditionally been a team that's been relatively small, not necessarily one of the better funded teams in Formula One, but they've always traditionally punched above their weight. So, they've always done very well for the level of budget they had against some of the bigger teams, which is one of the things that attracted me to it.

The sort of makeup of the team is a bit different now. We have a huge amount of investment from Lawrence Stroll who's now the current owner of it, and he has a very clear vision that he wants to be a championship winning team. He wants it to be one of the big teams. And so, there's been an enormous amount of investment, which is one of the things that really attracted me to it. And I joined just over a year ago now and it's been an incredible journey ever since I started. I mean the team was already growing in size, recruiting a lot of people and really expanding into the sort of level or to be the sort of size that some of the big teams need to be.

But taking it from where it was and some of the processes and the behaviors that were coming from the smaller team and bringing my experience of what it's like to be at a team that's winning races and has the potential of winning championships, and trying to build some of those behaviors and processes and tools and techniques into this kind of environment has been an extraordinary journey.

And certainly, the things that I thought I would be doing or things that I thought I would be looking to change or to influence are not really what I was expecting at all. Well, I think what I saw when I arrived was so different. The passion, the way that the people want to... Are so driven that is exactly the same as in any other team I believe. And the huge amount of quality, depth of talent in the team that was here already was fantastic. So it was really nice to be able to come and just bring something of my experience. But really just to see my role as trying to combine the different elements of the team and try to bring in the new elements as well as the old and really try and find a way of working that suits everybody. We can own as a team as well.

I think that's really important for us that we do things in our way, that there is an Aston Martin process to this. So, we don't try and just copy the way that some of the other teams go about doing their racing. It's really important for us to do our own thing. And I think yes, it has shown a success in this year's car. We're in a substantially better place than we were this time last year, but we do view it as a journey, although it's absolutely fantastic to be in a much stronger position this season. We're looking to win and

that's what we want to do. So, we see this as a journey. We're in a much better place than we were a year or two ago, but we want to try and get as quickly as we possibly can, right to the front of the grid and stay there, preferably for some decades. That would be lovely.

Jorian (08:09):

It seems to be a lot of love for your team as well. I've read from other drivers, the leading drivers saying, if I can't win, I want Fernando Alonso to win. And is that about being a new team on the block or where does that come from?

Dan (08:24):

I think there has been a lot of love for this team over the years and it always has been a little bit the underdog and also, I think there's a huge amount of love for Fernando clearly. But I think Lance Stroll, our other driver is a tremendous chap as well, and there's a lot of love for him out there as well. And I think there's a simplicity to this team in many ways. There's some simplicity into the message we put out there. It's just a pure racing team. We're not looking to get involved in any political games with anybody else. We're trying to be very sort of straight in the way that we deal with our other teams and our partners and everything else and where we try to be honest and show our prowess on the track. And I think that does come across.

We feel that people are rooting for us. We feel that there's a kind of new energy about this team that people want to get on board with and there's a huge amount of enthusiasm everywhere you look, whether that's internally or with the fans that we've generated on the journey. I mean, we are, I think the fastest growing team in terms of fan base, which is... You go to races, and you can see that. We saw at some races this year, there's just been a sea of green in the grandstands. It's wonderful to be part of really, and it's great for the people who work here as well because they really feel like they're part of a journey as well.

Jorian (09:54):

So exciting. Itay, in my introduction, I was talking about the kind of future of motoring, which I'm sure you are thinking about all the time. And we have Dan talking about the speed and turnarounds and in the off seasons they're re-engineering cars, but from the domestic car point of view, obviously it's a far slower journey. And why do you think that is when you think about change? Talk to me about the changes that you would expect in the domestic motor market and how do you see them unfolding in the coming years or decades?

Itay (10:32):

Sure. Yeah, there's a lot of change in different aspects and a lot of different things have triggered it, whether it's cheaper batteries for electric vehicles and regulations associated with that. Compute and the rise of neural networks and AI that really brought software in sometimes unimaginable ways into the vehicle in terms of what they can do, automated driving systems that are increasing becoming more and more autonomous. And so, you're seeing this sort of intersection between electrification of the car, the connectivity of the vehicle that now can update software over the air and make the vehicle better throughout its life. And of course, autonomous driving as well, which is all happening in stages. This is an industry that tends to move pretty slow. You've got long development times for a vehicle. Once a vehicle is in production, it will be in production for several years. And so, the industry is moving rapidly to adopt these new technologies.

What you'll see is really more of electrification, more connectivity, more automated driving systems each at various degree and hopefully over time at lower costs. And so, there's a lot of benefits, whether it's emissions of course for electric vehicles, but also potentially less operating and maintenance costs. There's potential insurance savings as vehicles become safer. So, when you think of the vehicle as we've known it, it's been efficient in some ways. We pay a lot to ensure it. The vehicle itself hasn't really always updated itself throughout its life to make it better, to introduce new features and services, of course pollution. And so all of these issues are kind of intersecting together at the same time. It will take time. Nothing really happens overnight in an industry like this, but you're seeing that acceleration almost every day and it will happen in various stages. And already when you see some vehicles today and compare them to what we had five, 10 years ago, there's already measurable differences and we're able to buy today versus back then.

Jorian (12:50):

Dan, as I said earlier, we're kind of just about halfway through the season when we're recording this. How do you approach the second half as it were, or the next race? Are you constantly changing or is it, you're doing well to the method that's got you this far? Just keep going. How does change happen within a season?

Dan (13:12):

So, we are essentially racing prototype cars. It's very different from, as Itay is describing, the sort of normal automotive industries. These really are prototypes and they change race to race. They change because we have different circuits that we race at and different types of circuits, they have different requirements in terms of top speed versus cornering speed. That's one of the big things that we change. But also, we are just constantly trying to update the car to make it faster. We have the ability, particularly with our sort of new campus facility that we're in at the moment to incredibly agile about manufacturing. So, we can go from designing a part to having it on the race car in an incredibly short space of time, I mean a matter of days. And that allows us to have this continual update philosophy of the car through the season, which is good in one sense.

The only thing is that it means the entire thing is absolutely relentless because we can make a car for the start of the season and sadly none of us can just sit back and relax and wait until the end of the season before we make a new one. We build a new car at the start of the season, at the beginning of the year, and then it's our job to see how that's performing, address weaknesses if it has any, and then not even if it doesn't, then look at how quickly we can update it. And it's something we as a team are constantly evaluating our ability to add those updates to the car. Something we've seen this year where we came out particularly strong compared to our competitors and now through the season it's started to get a lot tighter towards the top end of the grid.

Now we are seeing some other of our competitors getting a lot closer and that's a huge challenge for us and it's something we have to react to as a team. And I always say that there's a big difference to making a quick call at the start of the season and then how you then develop it through the season. It's in many ways a very different discipline, but you have to be good at both. And as I say, it's part of our journey towards becoming a front running team that we do both of those at the same time, but it is absolutely relentless. The one advantage of in-season development is that you have that continual feedback loop. You have the drivers telling you week after week, particularly if your car's not good, then you'll definitely hear about that. So, we get to hear about that, we get to go through all of the data and then we can get on with trying to fix any issues that there are in short order as possible.

Jorian (15:36):

Fascinating. So Itay, you said you've got a fascination for numbers. We're not here to mention brand names or stock picks or anything like that, but I would love some insight from you as to what parts of the market you are looking at? It must be so widespread. I mean, for example, do you even look at Formula One progress? What is it you look at when you come in on a Monday morning and throughout the week and you are looking at data to project forward?

Itay (16:07):

Sure. Yeah, no, that's a great question. There's so much technology as we talked about entering the vehicle and you are always trying to assess what the industry is doing, and you look for different clues as a certain technology now being applied in a new region that may start to accelerate the adoption of that technology in that particular region. We're seeing signs of the cost of the technology coming down is something that typically is currently reserved for the sort of premium market. More expensive car is now suddenly making its way to mass market for the first time. So, you try to look for different signs of inflection points around technology adoption and then run the numbers around it. If this particular vehicle suddenly is showing or particular companies talking about technology on this sort of new vehicle, what does that mean for the industry? What does it mean for how we've thought about technology adoption?

So, we do a lot of interesting pattern recognition as best we can to try to identify these trends as early as we can. And in the auto industry because the industry develops vehicles years before producing them, before we were able to buy them. You can see things kind of coming to some extent. So, it's really exciting to observe newer vehicles, newer designs, newer platforms to see what decisions are being made and then run the numbers to assess the implications of those decisions.

Jorian (17:45):

So, you are looking at the different end of the telescope from Dan, you are seeing into the future and trying to imagine what trends are happening rather than reacting to the last race and having a couple of weeks turnaround?

Itay (17:58):

Exactly. Well yeah, we're trying to assess that from that different angle and it's interesting, you do see a lot of different decisions, different approaches. So, we get to talk to different companies and get their assessment of philosophy strategies. You watch those strategies evolve; do they succeed? Do they fail? Do companies pivot? Yeah, so it's really interesting just to see... Talk to different players in the industry all thinking about the same mega trends and how they're approaching strategic decisions around where to take their companies and just observing and analyzing the differences sometimes that arise and how people looking at the same information come to different conclusions and different strategies around what to do with that information. So, it definitely keeps the job really interesting.

Jorian (18:49)

Dan, you mentioned at the beginning that Formula One was so much more accessible and it reminds me of... It was always my petrol head friends that would go on about Formula One and they'd watch the testing days, and they'd want to listen to engines. And now it seems like the world and his wife are into Formula One, it seems to have exploded and seems like there's more interest now than there ever has been there. Talk to me why you think that is.

Dan (19:20):

It's definitely true that there's a huge increase in the interest in Formula One and the audience figures. I mean it's one of the reasons it used to be so accessible is because not many people watched it really. I think it's just exploded in popularity over the last few years. I mean I would like to think it's just because it's just generally the best sport there is, but I think there's probably something else going on. I mean Formula One has very consciously tried to broaden its appeal over the years, it's tried to become more global, more relevant to more people. We actively as a team tried to encourage diversity not only in our team itself but also in our fan base as well.

And Formula One as a whole has really pushed that over the years in many different ways, which I think is extremely good. And now we are a truly global sport, but there's no doubt in the last few years there's been a Netflix series which has exploded the popularity and now we have a situation where we have three races in the United States as well, which has made an enormous difference to that fan base, which is wonderful to see. We have record attendance at the Silverstone Grand Prix that we had just earlier in the year, and we've seen that quite a few racetracks now. And I think one of the things that the Netflix series did is really sort of open a different area of Formula One to the rest of the world. It showed the behind the scenes, but it also showed some of the personalities.

I think it's one of the things that we've always felt that was missing. I don't think necessarily talking, although it's very nice for you to talk to me, I don't think necessarily the engineers, the best people to speak to, but the drivers are incredible personalities and there are some fantastic personalities in the Formula One paddock, some of them particularly interesting and flamboyant and perhaps a little bit free with their language sometimes. But we have team principles and owners and drivers that are incredible personalities and people want to see that, they want to have access to that.

And now I think we've seen that in other sports as well. We've seen now a series that allowing access to golf and some of the high levels and it adds an entirely different dimension to the sport, which appeals to a totally different fan base. And then when they come into seeing it from that aspect, maybe they're a Lewis Hamilton fan or Fernando Alonso fan and they sort of see racing as a sideline, that's just something they do as a job and then they get into that and realize that it actually is incredibly exciting, and we grow the fans from that. But really wherever has happened, it's fantastic to see and it does mean that we're exposed to more criticism when we do badly and greater celebration when we do well. But I absolutely bring it on. I mean I think it's fantastic for everybody involved really.

Jorian (22:12):

I was interested when you talked about your growing fan base, you sounded like a football club actually, and I think of motor racing in the past and Formula One in the past it seemed to be more down apart from one obvious red brand, but it seemed to be more down national lines. From a Brit, you would support the British driver, or the Brazilian would support the Brazilian driver, but it seems to cross that now, it seems like there are different cultures within teams that people are identifying with. Do you think that's true?

Dan (22:44):

I do. I do agree. I think people do identify with the drivers, so I think there's still a big element of that. I think we definitely see an increase in the interest in the team as a whole, but inevitably people will see the driver that they like, whether that's because they're the same nationality or whether they just think they're a good personality or whatever, then they will tend to follow them and you see that when they move teams, sometimes the fan base will follow them. What I think has been interesting recently is this increase in people who just follow us as a team. That's a very interesting phenomenon and great to see

and I think it does indicate that we are perhaps getting the message out that we are a bit different and that the fans that are supporting us are identify something in us that they like.

And I think that's been a very clear thing for us is to have an identity, to have something that we put out to the world and all of these things. I mean even talking to you today which is great, allows us to be able to project that image to the world. We want to have an identity; we don't just want to be a sort of iodine company that doesn't really... Just happens to put racing cars together. It's really important to us that we have a team identity.

Jorian (23:55):

Itay, are you a Formula One fan or a racing fan? Is this something that you've got engaged with?

Itay (24:02):

I don't know if I call myself a fan. We've done as analysts sometimes on the racetrack, companies invite us and go around and so I've had the experience, it's pretty wild. It's definitely a lot of fun and so it's definitely an exciting part of the industry, but as part of our day-to-day, not an area we track very, very closely, but obviously there's certainly relevance to it as new technologies come in and certainly the work a lot of companies are doing within that is certainly relevant.

Jorian (24:31):

So, if someone is listening and thinking about, hey, maybe there's a job as an analyst, I'm not just looking at data and screens, I'm going out there and living the dream, getting in cars as well.

Itay (24:42)

Yeah, absolutely. Yes. So as part of what we do, certainly we get to visit companies, and meet with management teams, we also do test the technologies and that could be certainly a fun part of the job, particularly in the last few years or several years now with electric vehicles, more performance vehicles. It's important because demand is still critical to drive all this, that you are adding incremental costs, going back to the numbers' discussion in the vehicle and there's a lot of course societal good that these technologies can do, but is a commercial business to a competitive business and so the features, the performance of an electric vehicle can still be important to drive demand, the convenience features in automated driving, the safety features of course important to drive demand.

And so, we do get those opportunities a couple times a year for sure to go out and actually test and experience the technology. And sometimes we have been on the racetrack a few times, my advice is don't eat too much before. It can definitely be pretty exciting. But it's certainly part of what we do as well to kind of experience all the technology that's coming out.

Jorian (25:57):

How about you Dan? Are you a driving fan or are you always there with your headpiece looking at the technical side, from as a technical director or do you like to get behind the wheel and do you like to drive fast?

Dan (26:10):

I'm definitely a massive petrol head. Fortunately, I'm on the other side of the fence because I'm absolutely hopeless fast driver so I'll be ridiculously bad in a racing car. We do have occasions where we go out as a group and people go go-karting or we do sort of driving experiences and things like that. And

I think it's something that... It's most of the people that work in the businesses that we do have a sort of interest in fast cars, but I think quite a few of us were sort of frustrated racing drivers, but in my case it didn't take very long to find out that wasn't really a viable career path for me if I ever wanted to make any money out of anything.

It's a very sort of interesting path to get to that to be a sort of Formula One driver. They not only have to have talent, but they also have to have a lot of luck and a source of finance as well. So, it's a very tough thing to get into. I mean it's difficult to get into the engineering side, but it's much, much harder to become a driver, I think.

Jorian (27:08)

What makes the talent? What do they need? I mean it might be an obvious answer that they just need to take risks and be really brave, but I'm sure it's a lot more than that. What would you look for in a driver and what do you admire in a driver?

Dan (27:21):

I think modern Formula One drivers have to have a huge number of skills. They have to be naturally very talented at driving a car, that obviously helps a huge amount. As I said, they have to have a certain amount of luck to get to the position where they can be spotted, and they have to have some good support along the way. They have to be incredibly athletic; I mean the rigors that it puts on the body during a race are incredible. So they're all very, very fit. They're very dedicated to what they do. But the thing that we really look for that really makes our drivers stand out is their ability to analyze the car and the behavior of the car in a way that means that we can understand it, because there's only so much that we can learn from the sort of systems and sensors on the car that can tell us about the way it's behaving and how we're going to improve it.

But we do rely very heavily on the drivers to tell us which areas of the car are not performing as they should do or which areas of the circuit are ones that are particularly a problem. So, the ones that have that sort of analytical ability are the ones that really stand out. What absolutely frightens me... I mean if you ever see the inside of a car, one of the cameras of the inside of the car while the driver's going round, the forces on them and the shaking and it's just visceral, the experience of being in one of those cars, I would imagine... I mean very few people in history have ever had the chance to do that.

But not only that, but they can be processing other bits of information like race strategy and one of the things that always gets me is sometimes is when the drivers then say, oh I see that so-and-so had a slow pit stop and they're telling you this while they're going around and you think, well how on earth did you know that? And they were watching one of the big screens as they were going, and you think well, how? I mean it absolutely baffles me that they can have that spare mental capacity while they're doing that. But I think once they've been doing it for long enough and the ones that have that ability, they're the ones that really get towards the top end of F1.

Jorian (29:16):

Itay, we've recently seen so much changing technologies in the auto space. It started with hybrid, you've got all electric now, and we have some auto-driver capabilities. Could you look into your crystal ball and tell us what changes might you predict in the next 10 or 20 years?

Itay (29:36):

Sure. Yeah, I think you'll see of course a lot more electrification, more EV, electric vehicle adoption around the world. This is not a revelation at this point, but we think maybe the most disruptive trend in the next 10 plus years or even sooner will be autonomous driving. You know really of course, there's societal benefits and safety, which is absolutely crucial to use sensors, software, mapping to vastly improve safety from where we are today. We've had this vision of getting to zero emissions and we've written a lot in our work that the vision to go into zero crashes is going to be there as well. There will be a lot of thrust and already there's a lot of thrust behind that from the industry, from regulators. And autonomous driving, of course it uses and leverages a lot of that same technology, the sensors, the software, the mapping to enable not only today's convenience features, the car can sort of keep you in the lane, you know with hands off, eye still on. You kind of drive in a highway in certain parameters.

But once you get to a full autonomous and insufficient road, sufficient domains where you can begin to, you get some scale around that, you can introduce new businesses. So, think of things like, you order something at night before you go to bed, the car goes to pick it up, and has it in the morning. Think of peer-to-peer car sharing as well to make the fleet more efficient. That has implications. Where could the car one day make you money when you're not using it when you're at work, et cetera. And so many other types of things like that. Maybe if you want to rent a particular vehicle for the weekend, you could do that and a vehicle will roll up to you or to your house autonomously, maybe at two in the morning when it's the safest to drive from wherever the vehicle's coming to your home. And so you can open up a lot of models, new business models that create a lot of new industries and features and networks.

And so, we think the future really will evolve into this sort of network mobility where if you're buying a vehicle, you're buying a vehicle and all the things that you look for today are still going to be important. A vehicle is still an object of desire, but increasingly becomes more of a part of maybe a broader network revolving around autonomous driving as well. And the high-level math is the cost per mile over time declines and the revenue per mile of a vehicle goes up. And so there's a lot of really interesting things happening and will happen around autonomous.

Jorian (32:20):

Dan, autonomous vehicles must be just your worst nightmare really. I bet you were someone who used to tinker with engines when you were young and the thought of not driving them must be crazy. What future do you see in Formula One? Is it going to accelerate even more, the technologies changing, and do you expect more regulation, more dictates from the race organizers? How do you imagine that's going to unfold?

Dan (32:49):

It's very difficult to have a crystal ball about what's going to happen with Formula One. I mean we can see that there are trends in the broader motoring industry and also about the changes in attitudes towards the types of technology that we use in Formula One. And there's a huge move towards improving the show for everybody, but also to keeping pace with these technologies and remaining relevant. Obviously, it's very important for the partners and the people who are involved, the companies that are involved in Formula One, that happens. But it's also incredibly important to the sport that it does stay relevant and that it stays exciting and something that people want to watch. So, there is sort of always going to be a tension between those things to some extent.

The great thing I think now is that there is a very open dialogue amongst the teams. That wasn't always the case and that's really the way that we'll get rounded it is to make sure that we keep talking about it. There're people who are investing, huge sums of money or their careers like me and my colleagues in

this. And it's right that we do have a say in this. It's right that we are heard. And I think it would be wrong to just sort of follow every single automotive trend in the sort of wider industry because that's not being true to the sport either. So, we have to make sure that we are still entertainment, but that we show that we are moving forward with the times as well. I mean I think autonomous vehicles, maybe that's a step too far really. I still think there's a sort of gladiator aspect to it, isn't there? That you want to see sort of human beings pitted against each other.

Yeah, I'm not sure I'll be around in the day where its robot cars racing against each other, but I know there's maybe an interest for that, but for different reason that there's sort of unique selling point I think of not only Formula One but other high levels of Motorsport is that there's these two aspects to it. There's the driver and also the engineering behind it as well. And I think that does what keep people interested. They like to know that there are these sorts of clever cars with interesting things going on underneath them as well as it just being a driver thing as well. So long may that continue as far as I can see.

Jorian (34:57):

Hear hear. Well, we've come to the top of our time. Thank you so much. I've really enjoyed this conversation. I've loved looking at it from different lenses. It's been a joy to meet you both and I wish you all the best and thank you again for joining Good Things Happen.

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