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Why is Lego more than just a toy?

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Why is Lego more than just a toy?

Traditional Lego is simply a block. Whether it be a simple two by four brick or a more complex sloped piece, it all started with interlocking cuboids. Over the following decades, the brick has evolved as far as integrated computer systems that can solve a Rubik's Cube. There are few brands more recognisable and diverse in the toy industry and across the globe.

Mere mortals can enjoy buying and building models off the shelf and experience the creativity and extensive knowledge of the design team based in Denmark from the comfort of their own homes. But there is much more to the brand than small plastic pieces that can cause excruciating amounts of pain when stepped on. They are a stepping stone into the world of engineering, investing and inclusivity / diversity.

Educational

There are few toys that stimulate the mind like Lego does. Not only are there building techniques to become familiar with, but one must understand what certain parts do. For example, it is not uncommon for Technic models to include complex gearboxes and mechanical differentials – integral engineering pieces of real cars. There are a very limited number of ways to be exposed to these types of engineering feats at a young age safely. But these types of interactions instigate interest and knowledge in a subject area and ‘the use of something as familiar as LEGO can help draw children into the world of engineering’ (Chandler, 2020). It becomes a case of understanding the function of a part and where is appropriate to use it. In the case of a differential, it enables a vehicle to turn by allowing the outside driven wheel to rotate faster as it travels a greater distance than the inside one. Furthermore, there are applications whereby a locking differential will be needed to improve traction off road and a central differential might be required also. This information is gained subconsciously yet is used by so many people every day who would not know what a differential is let alone its purpose.

Like differentials, suspension features a lot in Lego sets - particularly Technic. Depending on the type of vehicle, the suspension type and geometry is replicated to keep true to vehicle being modelled. This can range from live axle multi-link to independent arms.

The rate of damping can be altered using different spring rates and there are larger options for bigger scale vehicles. Being able to interact with parts that are fundamentally similar to that of real vehicles unlocks hands on experience from a very young age. It inspires interest and desire to learn more and the technical terms that go with it. There are very few ‘toys’ that rival the diversity that Lego has and new ‘project is a pathway into engineering’ (Jensen 2012).

While the chassis components are integral to every set, the body work sat on top covers them and is therefore of arguably more importance. The aesthetics of a vehicle - particularly licensed products - must have the correct proportions and include intricate details of the design. In some respects, building up a body work with Lego is an early form of 3D sketching / modelling. Parts are built and rebuilt in order to attempt the perfect look for the intended purpose and audience. There is certainly an art to translating a form into Lego that resembles the process of modern car design. Packaging must also be considered as bodywork that doesn't fit over the chassis and its features would be rendered useless.

Further complexity can be added with portal axels which improve ground clearance. Moreover, making the axel driven or non-driven as well steered or non-steered has to be factored in. These complexities are typically addressed using Technic parts - the art of building with 'normal' Lego bricks is completely different. The structure must first be strong and then the details are added after. The most complex type of Lego modelling is combining a Technic chassis with a brick-built bodywork. On the whole, bricks allow more detail to be put into a build due to the vary large catalogue of parts. Unlike Technic, brick builds are much easier to seal so that there aren't big gaps and joins. Talented builders are able to use the same pieces in multiple scenarios to aid the detail of their model. For example, a regular fence panel piece can be used as a grille mesh on a car provided that the scale is roughly correct. Going to this level of detail does come at the penalty of weight and particularly on remote control cars, this is a major hinderance of the performance.

Cars that feature in the Lego creator range such as the 10295 Porsche 911 Turbo and 10248 Ferrari F40 use Technic parts to create the chassis and then build a detailed body work and interior around it. These models are primarily for display therefore the design team can take liberties in details that are slightly more flimsy given the target audience of the car. However, the 8156 Ferrari FXX in 1:17 scale from 2008 went one step further as the creator integrated the original cars built in jacks. This

extra feature wasn't needed but added extra authenticity to an already good looking interpretation of the full scale vehicle.



Lego 8169 Ferrari FXX

A lot of scale details put into a 1:17 model.

Community and Competitions

Lego competitions take place all over the world held within schools, regions, nationally as well as internationally. They inspire designs to be pushed and new ideas to be had. Amongst Children, competitions teach them ‘real-life lessons about winning and losing’ (Gordon, 2020). There is so much more to Lego than their pre-defined sets. Competitions see parts traditionally used for one purpose reused in a different way that had not been thought of before.

A notable example of a national Lego competition takes place in Poland. They hold ‘truck trial’ competitions whereby custom-built Lego vehicles are subject to tough off road stages. Usually, entrants are required to build a truck based upon an existing model from the likes of Tatra, replicating their unique suspension design in a Lego form. The process of designing and building these vehicles can take months with hundreds of iterations which are rigorously tested to get to a ‘competitive’ standard. Standards are raised at each event with the introduction of new pieces allowing different building techniques enhancing performance as well as strength. Moreover, like with any subject, gained knowledge and experience pays dividends when trying to produce a model of competition winning standard.

Some entrants have established themselves as highly regarded model builders within the Lego community. For example, Paweł “Sariel” Kmiec began within the polish truck trial community. He then began building other vehicles and posting them online on his website and YouTube channel. At the time, he had no affiliation to Lego or any part of the brand. However, he became quickly recognised as a talented and somewhat influencer within the Lego world. From this, Lego now provide him the latest sets before they release so that he can produce a video and write up review of the set giving his honest opinions. He begins with an overview of the box and then shows the density of its contents with a look at the instruction booklet too. The videos then detail any new

pieces to the Lego brand and their functions (if applicable) followed by new parts in new colours.

The next chapter of the video is a Timelapse of the build concluding with the overall playability of the model and its functions as well as final thoughts and conclusions. Lego provide the set to be reviewed but Sariel is able to monetise the video on YouTube and take any earnings off advertisements. Currently, Sariel has 266,000 subscribers showing the interest in not only the reviews but also his creations too. His niche is featuring his hamsters in his videos which he has done from the start, differentiating him from other YouTubers in the same category.

Another example of a well renowned building within the community is Nico71 from France. A majority of his recent work has been building alternatives (B models) from existing sets. Every other year, Lego release a flagship set in the Technic line up. In 2018, it was the 42083 Bugatti Chiron. As is normal with this type of set, Lego did not release an official secondary model, but Nico71 has created his own. The task is to build as detailed a model as is possible using the exact pieces from the original kit. In the case of the 42083 set, Nico71 has built a racing truck with a fully functioning fake engine, 8 speed gearbox as well as functioning suspension. This is similar in functionality to the Chiron model and utilises the two tone blue pieces to create an authentic looking vehicle such that Lego could have released it themselves.



Nico71's alternate model to the 42083 Bugatti Chiron

A demonstration of what is possible using the same pieces from an existing model.

He has also given the 2020 42115 Lamborghini Sian Fkp37 model the same treatment - creating a similar scale model of a Ford F-150 (albeit with the striking paint job from the Lamborghini) similar in functionality to that of the Lamborghini. For both of these alternative ideas, Nico71 has created full high resolution instructions available to the public for a relatively small fee. There are also a lot of his personal models that he has released instructions for too allowing the community to build models beyond the releases from Lego directly.

Similarly, Sarel also releases building instructions for some of his models. In 2012, he published his first book: the unofficial Lego technic builder's guide. The book contains an in depth investigate real world engineering and solutions to them in a Lego form. As part of the Technic range, Lego have created their own universal joint for use in drivetrains and other solutions where the direction of motion is required to change direction. These are particularly useful in live axel builds where the

whole axle can move under the travel of the suspension. The positives of the Lego piece is its compact size making it ideal for most applications within a model. However, given the complexity of it, the amount of load that the part can tolerate is relatively low. Within the book, Sarel addresses this by building a reinforced universal joint - the only sacrifice being size. It is constructed by non-specialist parts meaning that a majority of people could build it too. The book also gives an insight into steering and suspension geometry with drive and non-drive options as well as instructions with and without differential locks. Pulley systems, pneumatics and motors are also discussed and explored. Insights into the methods of a semi-professional modeller allow average people to better understand and improve their own knowledge in building as well as the engineering principals behind it. A second iteration of the book followed in 2016 expanding on the topics of the first book with updated parts and new techniques.

Every amateur Lego builder within the community has wanted to have their own creation reworked and published as an official Lego set. Fortunately, Lego have made this possible through their 'Lego Ideas' site. Anyone with an account can upload a model that they've created which is viewable to everyone. The model can be anything from cars to buildings with or without a brand or licensing deal in mind. The aim is to get 10,000 'supporters' on the site within a certain amount of time where if achieved, the model will be put forward for review by a team at Lego themselves. Several factors are then considered to determine the feasibility of the set as an official Lego product. These are the playability, costings, any licensing deals as well as potential for sales etc. Due to these factors, there are a lot of models that are discarded, but it is a nice way for Lego to appreciate the work of people outside of their own design team and give back. There is great variation in previous successful entries: they have ranged from a scale model of the International Space Station with a matching scale space shuttle included to a grand piano, typewriter and a tree house. These sets have so far only been brick based - a Technic model is yet to be approved but there are no reasons for this to not change in the future.

The Lego ideas website has been around for a decade now and was at the start only based in Japan. Originally, submitted ideas only needed 1000 supporters to be considered for production. However, with the move to international as well a major increase in people able to access the internet is what has driven up the popularity and the reason for needing 10000 supporters.

2011 saw the release of the first Lego Ideas set: the 21100 Shinkai 6500 Submarine. As the site at the time was only open to users in Japan, the country saw this set as an exclusive release with only 10,000 units being produced. With only 413 pieces, the model is reasonably small but being the first of its kind has meant that the demand has rocketed, and the values reflect this. At launch, the recommended retail price was the equivalent of £44.99. However, current market value for factory sealed sets is north of £700 plus shipping / import costs from Japan. It is likely that this value will continue to rise due to the limited and exclusive nature of the model. Current eBay listings for opened box and built models are also asking for very high prices which is unusual but highlights the desirability.



Lego 21100 Shinkai 6500 Submarine

Since the Shinkai submarine, Lego ideas sets have seen collaborations and licensing deals with Ghost Busters, DMC and Back to the future, Caterham, NASA, Disney Pixar's Wall-E as well as Fender guitars amongst others. These ideas come from people who have a passion for these brands and their products which they translate into a Lego model. It is likely that a proportion of Lego enthusiasts will share a common interest hence the success – these sets provide 'mutual value to both the company and the community' (Neufeld, 2019).

Values and investments

Sentimental value and market value have their similarities. Children are more likely to be attached on a sentimental level before understanding money and its purpose in life. There was only one intention when opening a new Lego set on Christmas morning as a child - build it as quickly as possible and only stop when there was food available. While this destroyed the investment, the memories made were priceless. 'Sentimentality is such an evocative feeling and yet, [it is not] truly experience it until we grow older' (Pattison, 2021). With age, the inner child wanting to build a new model never goes away, it is just overshadowed by the potential of tripling the money within a relatively short period of time. The simple answer to combat this is buy more than one: build one and sell the other effectively covering the cost of both.

Every six months, the new range of models are announced. Across each range, there is typically one or two flagship models that get the collectors excited. These will usually involve a licensing deal with another brand which immediately boosts the retail price of the set. However, the collectors will still pay, regardless of the cost which for some of the latest models can be north of £300. It's on the second-hand market where the values become less predictable. As with anything, the values are determined by the amount that people are willing to pay for them which is determined by 'the forces of supply and demand' (Mitchell, 2020).

For example, Lego released a Technic Porsche 911 (991) GT3 RS (set 42056) in 2016. At the time of launch, the designers at Lego had managed to squeeze a fully functional 'paddle' operated seven speed plus reverse gearbox into the model making it the most advanced ever released. The recommended retail price reflected this, as it was £259.99. Two years later, once the model was retired, it was possible to buy the same set but heavily discounted for £120. While there weren't many around at that price, those who managed to find one have since made a relatively small fortune. During the summer of 2020, the sold eBay listings for the product suggested that buyers

were willing to pay roughly £330 to £350. At the time of writing, eBay sold listings indicate that people are paying close to £500 - a 417% increase of the discounted retail price.

It is possible that the coronavirus pandemic had something to do with the rapid influx in value. The summer of 2020 saw people sat at home with more money in their pocket. As a result of this, 'disposable income diverted from other types of entertainment to toys' (Garcia, 2021) as everyone was advised to stay at home. Lego could have been a form of therapy for some at the time also.

It is by no means not a new thing for Lego sets to increase in value; but there is a big difference in values of the same model that have been built with and without box present as well as unbuilt in a sealed box. For the top collectors though, only a pristine box will do, and they are willing to fork out a large premium to obtain them.

Such is the market size for collectors and enthusiasts, websites have been set up to allow buyers and owners to identify the current value and see the market trend for every Lego set ever produced. For example, Brick Economy (brickeconomy.com) has a data base of all Lego products dating back to the earliest sets from the 1970s. They monitor sales of factory sealed models across all major Lego marketplaces and shopping sites and give the retail value, current predicted values with overall percentage growth as well as the average percentage growth per calendar year. Values vary by set but a quick look through shows that almost every model has a positive annual growth suggesting that Lego is a safe place to put money if it can be held for a long time. In other words, it is 'the toy of smart investors' (Lieber, 2019).

Recent years have seen the demand for Lego explode such that more and more marketplaces are allowing users to buy and sell Lego products. Throughout 2020, 'the company is reaping the benefits of investments in its e-commerce business and new markets' (Whitten, 2021). StockX is a well

renowned buying and selling platform for designer and hyped items such as Supreme, Off White and Nike Jordan's. Their platform works by allowing buyers to place bids on items and sellers to list at their desired price. If a buyer is willing to pay the price of a sellers' buyout price the transaction will complete, and the item will be shipped. Where StockX make their money is by taking a hefty processing and transaction fee as they act as the middleman to verify that the garments / shoes are authentic. With the recent increased demand for Lego, the platform has opened up for listings or factory sealed sets. Selling through StockX allows a quick cash out as there is almost a guaranteed seller but the hefty fees have to be accounted for as they eat heavily into any profits. While it is a good money maker for the company, the likes of eBay are much cheaper in terms of fees and a buyer can usually be found. With demand seemingly not slowing down, the number of ways to buy and sell will only increase.

Diversifying the brand

'Traditionally, Lego has been accessed by more boys' (Russell, 2021). Their products in the past have had labels on them marketing them as suitable for one gender or the other. In an attempt to expand the user base, Lego friends was launched in January 2012. The segment entailed 5 'friends' and 14 sets released were about their lifestyle which would signify a bias towards a female oriented market. While the sets did not specifically say 'for girls' on them, the pink and purple branding and dolled up mini figure characters would suggest otherwise. Until recently before all people were open about genders and identity, it was more often the girls were encouraged to engage with 'boys' toys rather than the other way round. Recent research suggests that boys fear of being made fun of for playing with a 'girls' toy' and Lego are now striving to eliminate that within their product range. Part of the solution is to remove and gender labels from packaging and include features that are not stereotyped or biased towards one gender. Children need a mix of activities and experiences when growing up that they can carry the skills learnt through to adulthood. Gender stereotypes have become more prevalent in recent times and all brands are having to move away from them to not seem outdated and non-inclusive. However, it is difficult to phase out such associations as the Lego Friends brand has been very widely commercialised. There have been dedicated magazines, television series as well as films made surrounding the franchise. The plots and contents would suggest that they are still biased towards the female market making them unwatchable in the eyes of boys. By contrast, even as the gap between genders becomes more of a grey area, the fan base will always remain for stereotypical 'girly' girls and the equivalent of boys therefore brands will have to keep this in mind due to the possibility of reducing diversity of individual personalities. At the time of the brands creation, the separation between boys and girls and their interests was defined by the era and stigma surrounding genders. This history cannot be ignored but brands are aware that action is required to eradicate these preconceptions.



Lego Friends Characters

The Technic franchise is that the opposite end of the spectrum to Lego friends. The range is predominantly made up of vehicles with real world engineering solutions packed into a playable form which once upon a time have been a predominantly male audience. In the past, it was typical for 'girls [to not be] as interested as boys in STEM subjects (Gender Equality Law Centre, 2015). However, it is more likely now for girls to engage in this more engineering biased toy as recently Science, Technology, Engineering and Maths (STEM) is being pushed more and more within schools and colleges with girls being targeted. Using a toy that promotes females to engage subconsciously with engineering at an early age is good for the diversity of the next generation. The difference in numbers between males and females will gradually see a decrease and toys like Lego technic will play a fundamental role in this change.

Previous to the television series, Lego began releasing their own magazine in 1987. It had different names for different regions, but the UK version was called Bricks 'n' Pieces. It was released quarterly containing information about the latest products as well as interactive pages such as puzzles and comic strips etc. It later became known as just the Lego magazine in 2002 and in 2008 the popularity was great enough to split the magazine into several editions based on what the reader wanted and

how much they were willing to pay. Since 2017, physical copies of the magazine have been phased out and replaced by Lego Life - an interactive online platform for members to read and share content about the brand and their own creations. The idea is to create an interactive community accessible to anyone in the world with internet access. While it keeps with the times, physical copies of magazines contain much more sentimental value due to having a copy in hand. 'People still read magazines in 2020. But research shows a decline in readership for the first time since 2012 (Olivares, (2020)). The digital era moves so fast that people consume so much information in such a short space of time to the extent that very little of it is consumed and stored in the brain. The anticipation of waiting for the next magazine to arrive will not be replicated in the current world.

Lego mini figures first appeared in 1978 within set number 600 - a police car. Since then, the anatomy has remained almost unchanged. Adaptations and ones to the mini figure have been brought out for characters such as Indiana Jones and Spider-Man amongst others. In 2013, the mini figures became animated for the first time as The Lego Movie was released in the cinemas. The film was a big success due to a good plot and featuring characters from some of the biggest Lego ranges such as Batman. The exposure for the brand was huge and as a result 'net profits rose 12% to 2.7bn Danish Kroner (£290m) after Lego Movie kits "exceeded expectations"' (BBC News, 2014). A second version debuted in February 2019 and saw similar results. Currently, there are plans to release a third movie within the next few years. Given that Lego is the largest toy manufacturer in the world, it is surprising that the sales increased by such a large amount. But it is proof that any form of exposure and advertising is worthwhile.

So, is Lego more than just a toy?

Yes. Lego is more than just a toy. There is a loyal fanbase that is ever growing due to expansive marketing strategies and a diverse catalogue of product ranges. However, a person can do so much more with a box of Lego than just 'play'. It brings a whole new meaning to the word toy whereby one can experience a good hands on way of learning about a multitude of real world problems within engineering as well as design, all while simultaneously having the potential to make a reasonable profit margin if kept untouched.

It could be argued that Lego has become more than just a toy due to how society has changed in the last few years. There are more people looking for ways of making large sums of money. Reselling in demand items has become a reliable source of income in the past couple of years (and for some a full time job). Using new online selling platforms to dictate the markets as well as bots to hoover up supplies has only forced prices to rise making special release models harder than ever to obtain.

However, a person of any demographic can buy Lego and as a result, the intentions will differ. The most important part of owning anything is the experience that it gives in return; there does not need to be a predefined reason or justification for buying and owning it. Perhaps people should treat Lego as a toy as it was always intended to be. That way, it isn't possible to put a price on it.

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