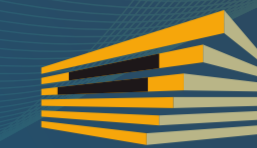


CUVIC | Three-dimensional puzzle



TYPE OF R+D RESULT

- New technology
- New product**
- New service
- New knowledge or skill



COMMERCIAL MATURITY LEVEL

- Model or conceptual idea
- Proof of concept (design)
- Validated in a controlled environment**
- Validated in a real environment
- Successfully implanted



PROTECTION LEVEL

- Non- applicable
- Patent
- Software
- Know - how
- Utility model**

Invention title THREE-DIMENSIONAL PUZZLE
File number EP21382963.3
Priority date 06/08/2022
Status Requested
Country Spain

Description of the solution. Problem solved

What would happen if we combine volumetric cubic shapes and Tetris game?

CUVIC is a three-dimensional puzzle that combines both the best of both games and becomes in an engaging puzzle for all ages. This is a game made by flat pieces formed by articulated squares joint together ("polyomino") that once are placed in exactly order without overlapping or gaps, the volumetric shape that has been made up by the cubic shapes is totally wrapped.

The game consists of two parts:

- A base structured by assembled cubes that build a wide range of 3D shapes.
- A set of flat pieces made of squares (polyomino) articulated between them, and that can have different number of squares (tetromino, pentomino, hexomino...).



As other puzzles, CUVIC is a pastime that trains and reinforces mental skills such as concentration, analysis, discrimination and logics.

Although CUVIC is a logic game, its applicability may arise interest on those sectors that can take advantage of its simplicity and versatility, since it allows to adapt its functionality to those applications where cubic volumes use is widely used.

Currently, the CUVIC articulated polyomino set design has been filed as a European patent in the European Patent Office

Fields of commercial application

Commercialisation of magnetic cubic pieces puzzles for children is very common in the toy industry, and there are many manufacturers offering similar products.

In this case, CUVIC's flat articulated pieces could be an extra that would add difficulty levels to the game, which would extend the range of users to any age, turning it into a logic game or a physical therapy element.



But, apart from toy industry, CUVIC can be used in other areas by adhering different and flat pieces to cubic ones in different ways, such as using adhesives (as in post-it), or Velcro or fitting volumetric shapes. For instance, different polyomino can be used in publicity as new communication elements by wrapping three-dimensional static cubic volume stands.

Also, interior design and decoration industry can benefit from designing elements in tetromino or pentomino shapes that can adapt to any kind of furnishing.

Merchandising industry can create different range of products in which the distinguishing element would be the chosen polyomino or even how such element has been set on the cubic base.

Market opportunity

From a market opportunity point of view, since CUVIC is a novel product with uncertain demand; we simply consider that this product would represent a significant opportunity if introduced in toy industry. Through 2011-2022 period turnover of this sector in Spain has kept more or less stable levels.

According to an **article published in Cinco Días on February 2021**, toy industry behaviour in Spain during 2020 (in a pandemic scenery) was considered acceptable although selling decreased slightly. However, this situation has had an impact on consumer habits since puzzles (+30%), board games (+6%) or building games (+5%) were on the top during the Covid, according to the Spanish Association of Toy Makers (AEFJ).

In addition to this, an increase in toy sales is foreseen in the next years, although it is estimated that toys and puzzles sales shall maintain or even slightly decrease once some changes observed during the pandemics seem to have lose some its effect.

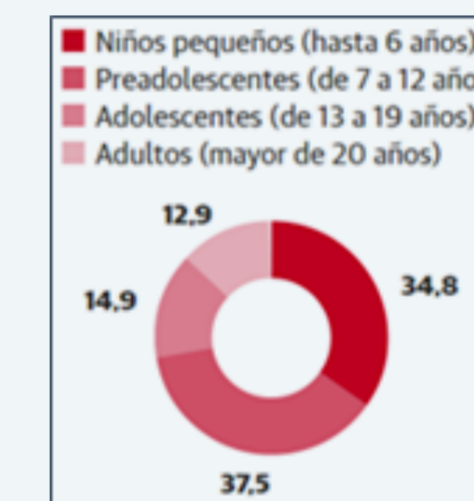
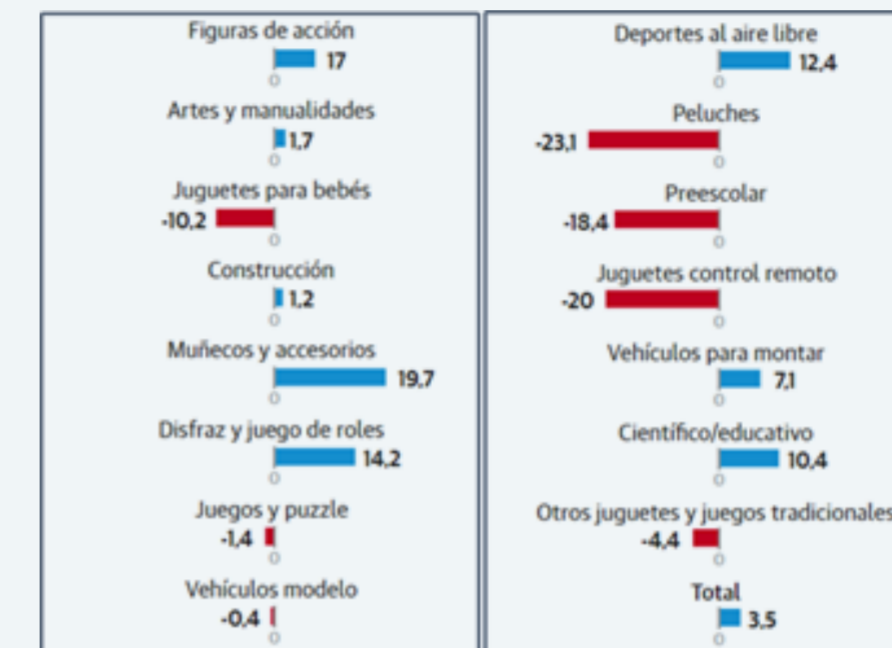


Figure 1.- Toy sales evolution in growth % 2019-2024, (Source: *Article about Spanish Toy Industry Prospect* published in Las Provincias, 19 December 2021, according to the AEFJ, Euromonitor and EAE data).

Finally, according to the percentage of overall toy sales, adults are foreseen as a significant niche market for an intellectual toy such as CUVIC.

Figure 2.- Toy sales by age (% over prospects 2021) (Source: *Article about Spanish Toy Industry Prospect* published in Las Provincias, 19 December 2021 according to the AEFJ, Euromonitor and EAE data).

Competitive advantage

CUVIC, as a toy, is a type of puzzle similar to other products such as Rubik Cube, among many other. However, its competitive advantage and what makes it different lies in its simplicity and versatility to play with it. Also, from the gamer's

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point of view, CUVIC is a major intellectual challenge because it does not have one only solution for the polyominos setting, since cubic structures where these pieces are set have multiple configurations.