



# 3Boyutlu Yazıcılar ve Ambalaj Sektöründeki Yenilikçi Uygulamaları

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# Terminoloji ve Konsept

Genel: 3D Printing = 3Boyutlu Baskı

Teknik: **Additive Manufacturing** = **Eklemeli İmalat**



Eklemeli İmalat



Talaşlı İmalat



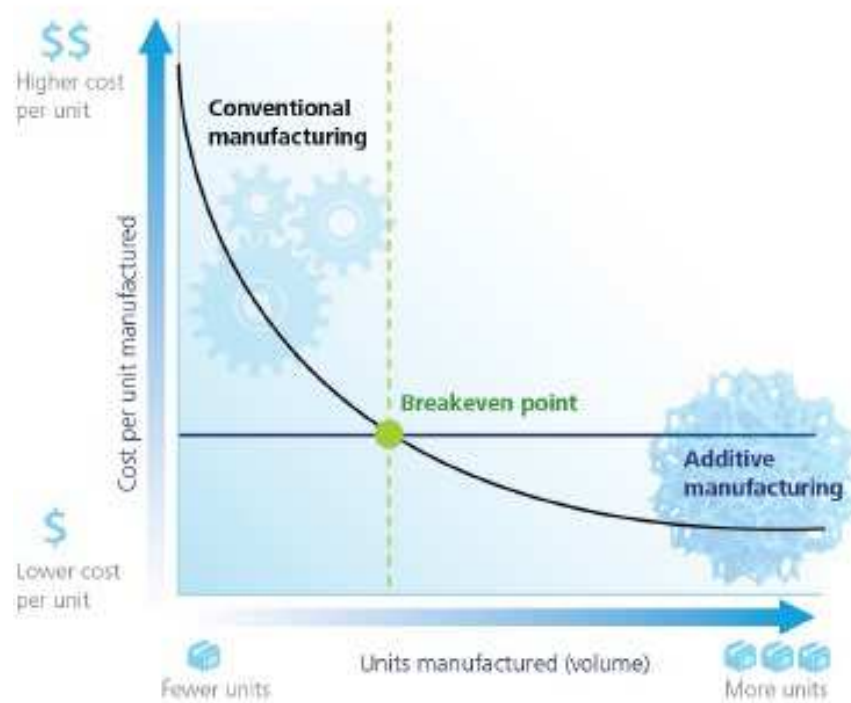
# Eklemeli İmalatların Tipik Süreci

Figure 1. Additive manufacturing (AM) process flow



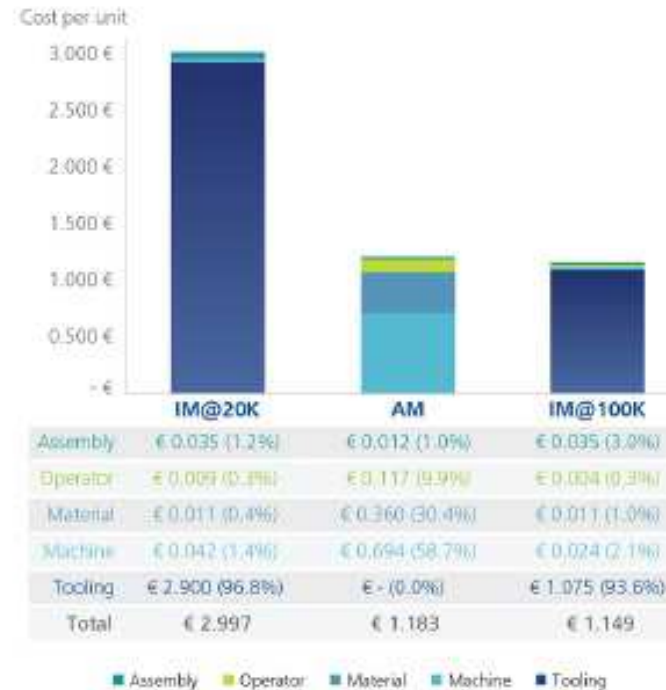
# Maliyet Mukayesesi: Talaşlı ve Eklemeli

Figure 1. Breakeven analysis comparing conventional and additive manufacturing processes



Graphic: Deloitte University Press | DUPress.com

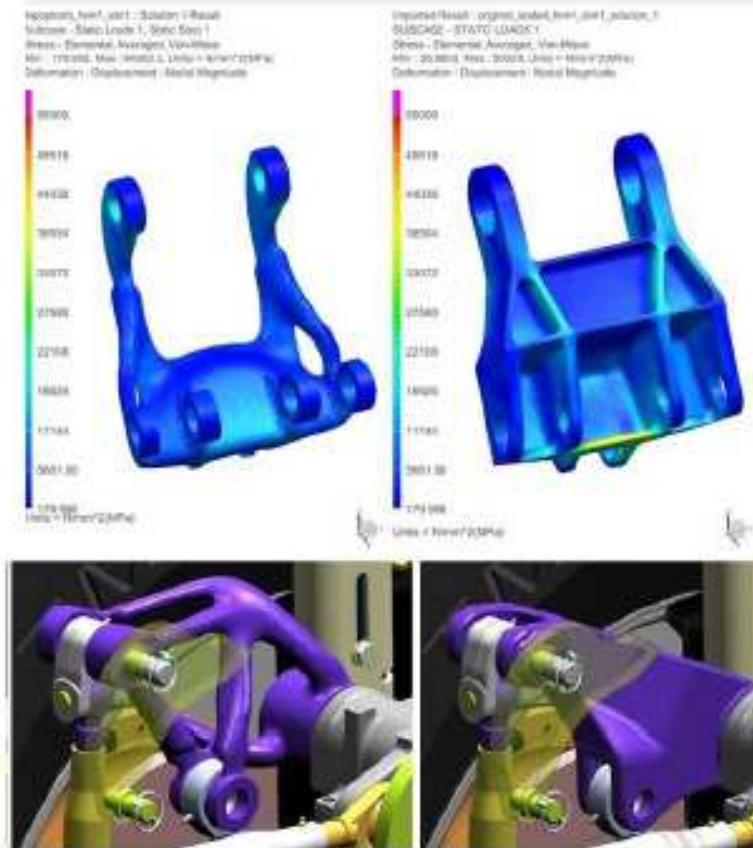
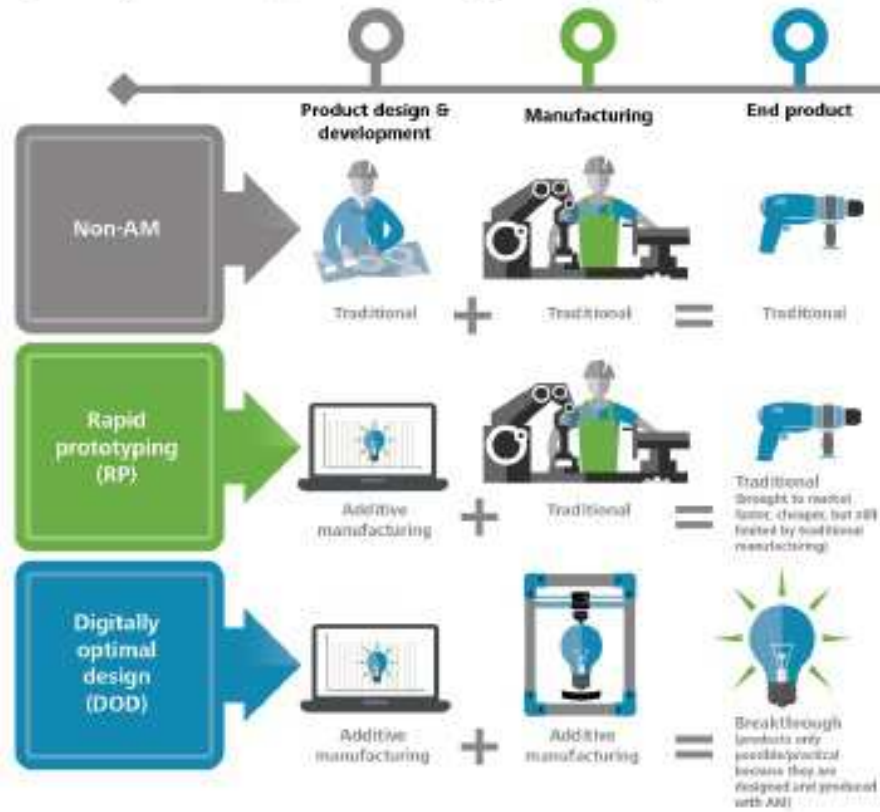
Figure 2. Direct-cost breakdown for a small, nonflammable, plastic electric component using IM and AM<sup>25</sup>



Graphic: Deloitte University Press | DUPress.com

# Tasarım Mukayesesi: Talaşlı ve Eklemeli

Figure 2. Comparison of non-AM, RP, and DOD product design and development processes



Graphic: Deloitte University Press | DUPress.com

# Sektörel Uygulamalar (1)

Kuyumculuk ve Mücevherat



Sinema & Animasyon



Moda Tasarımı



## Sektörel Uygulamalar (2)

Otomotiv



Savunma ve Havacılık



Nihai Tüketici



Genel İmalat



# Sektörel Uygulamalar (Medikal)

## İşitme Cihazları



## Dijital Dental



## Ortopedi



## Beyin Cerrahisi



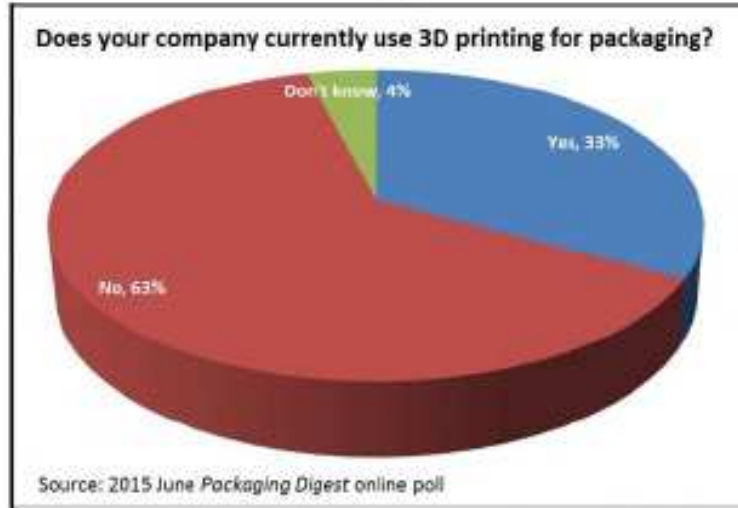




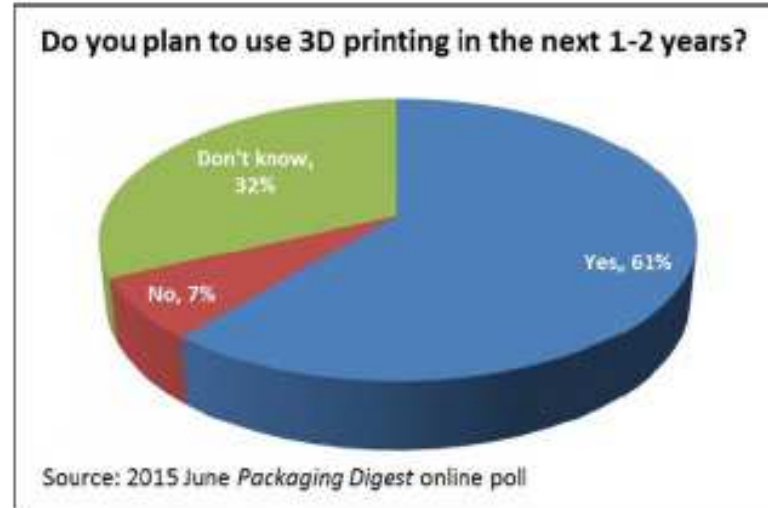
## 3 Boyutlu Yazıcıların Ambalaj Sektöründeki Kullanımları

# Sektörel Anket

Bugün..

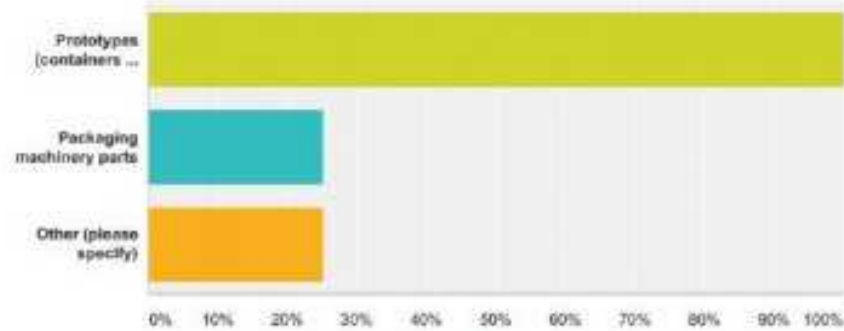


Yarın..

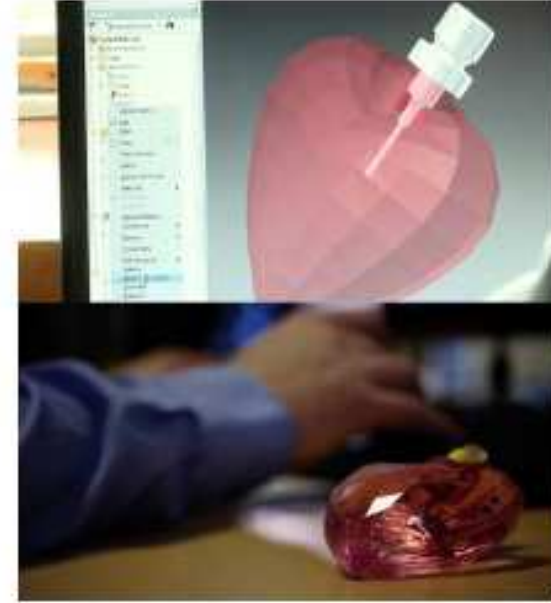
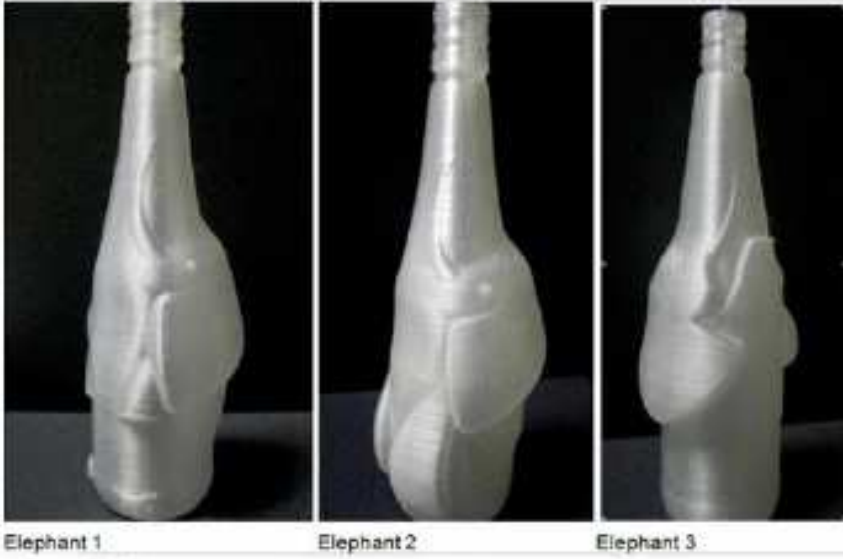


Why did you invest in 3D printing for your packaging operation?

Amaç..



## Konsept ve Tasarım Süreci



Volume: 750ml  
Weight: 46g

**SIPA**  
**DESIGN**



# Prototip Kalıp(lama) Süreci

Viol Kalıbı



Plastik Şişirme Kalıbı



# Ürüne Göre Anında 3D Baskı Ambalaj



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3Boyutlu Yazıcıların  
Kozmetik Ambalajı Sektöründeki  
Yenilikçi Kullanımları



# FUTURE-TOUCH

AMSTERDAM



## Trendi Yakalama Amaçlı...

### 3D PRINTABLE COSMETIC APPLICATIONS FOR 2015+



Focus on 3D print design by Future-Touch



"Multi-Colors is the most innovative theme for 2015" points out A. van der Berg. "It is an answer to all the colors we've seen recently on the market. The colors were as bright as possible, but we will get tired of them. We'll want something different but with the same intensity, this is found in multi-colors effects. Inspired by rainbows, soap bubbles are a kaleidoscope of colors".  
Faux Nature means in fact False Nature, the answer of Future Touch to the natural color cosmetic look: less brown, more green and addition of shimmer.

And men cosmetics, the huge new market! "If you look around, we see a lot of signs that men are ready for decoration". Future Touch developed 4 impact colors: Jagger Black, David Copper, Bubble Blue and Conrad Black. For each theme, Future Touch designed 3D printable cosmetic products that give inspiration for the future.

Doğada Çözünür Mazleme Kullanımı Amaçlı (1)...

## Natural skin balm uses 3D printing for biodegradable jar

By Kari Embree in Sustainable Packaging on September 06, 2014



### 3D-printed package styles proliferate at Anita's Balm

Since introducing a 3D-printed, PLA balm jar in 2014, Anita's Balm has developed a number of new 3D-printed packaging designs for its own use and for sale to other brands. PACK WORLD ARTICLE | JANUARY 8, 2016



## Doğada Çözünür Mazleme Kullanımı Amaçlı (2)...



100% bio-based PET container for cosmetic packaging

07.10.2016

*Decoupling plastic packaging from fossil feedstocks and adopting renewably sourced feedstocks is one of the main challenges the packaging industry is facing today.*

PET is a plastic that is widely used for packaging purposes. A consortium of Dutch SMEs and universities has developed a unique new way to produce a high-performance PET from biomass, resulting in a 100% biobased product. This BioPET100 can be used for high-performance applications, including 3D printing and cosmetic packaging. The consortium presented a number of cosmetic containers with lids made of the new 100% bio-PET at the 2nd Biobased Business Event at the Emmtec Industry & Businesspark in Emmen on September 22nd 2016.

Teşekkür ederim!



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