



# *Skin analysis and personalised/ customised cosmetics*

*“an overview of past and future  
developments”*

*Walter Arkesteijn*

*Technologist and managing director  
at InnoFaith beauty sciences B.V.*

*15-10-2015 @ C360*



# Today's talk

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## Examples, history, challenges & considerations

- Personalised & Customised *makeup*
- Personalised & Customised *hair care*
- Personalised & Customised *skin care*

## Innovation in the cosmetics industry

- Lessons learned
- Success criteria
- Considerations for your own innovation challenge



## Personalised make-up



*“A delicate challenge of  
skin tone and preferences”*

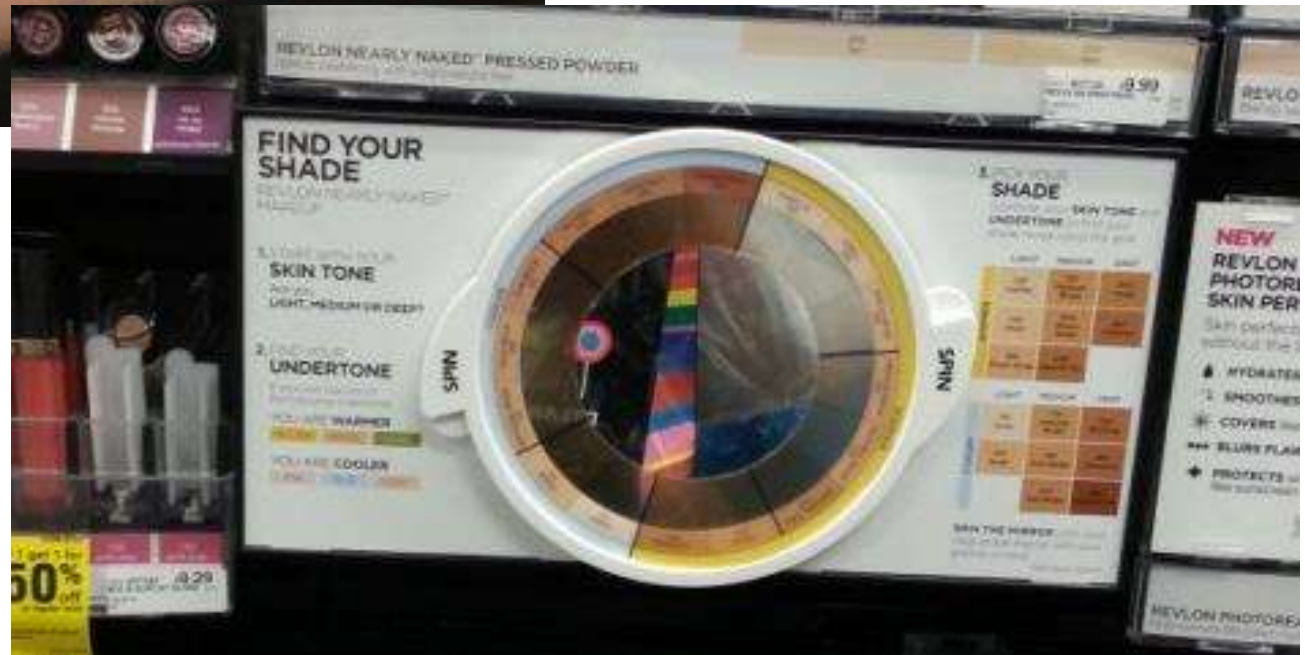
# Tools to help select and use make-up

## *Conventional methods*



*Experimental via testers*

*Via shade swatches*





# Tools to help select and use make-up

## *Hewlett Packard 2007*



*News video with demo (2007)*



*HP demo video (2007)*



*Stanford university talk (2009)*

Nina Bhatti, Scientist at HP Labs  
*Color Match: An Imaging Based Mobile Cosmetics Advisory*



*Scientific publication*



# Tools to help select and use make-up

## *HP Cosmetic advisor kiosk (2008)*

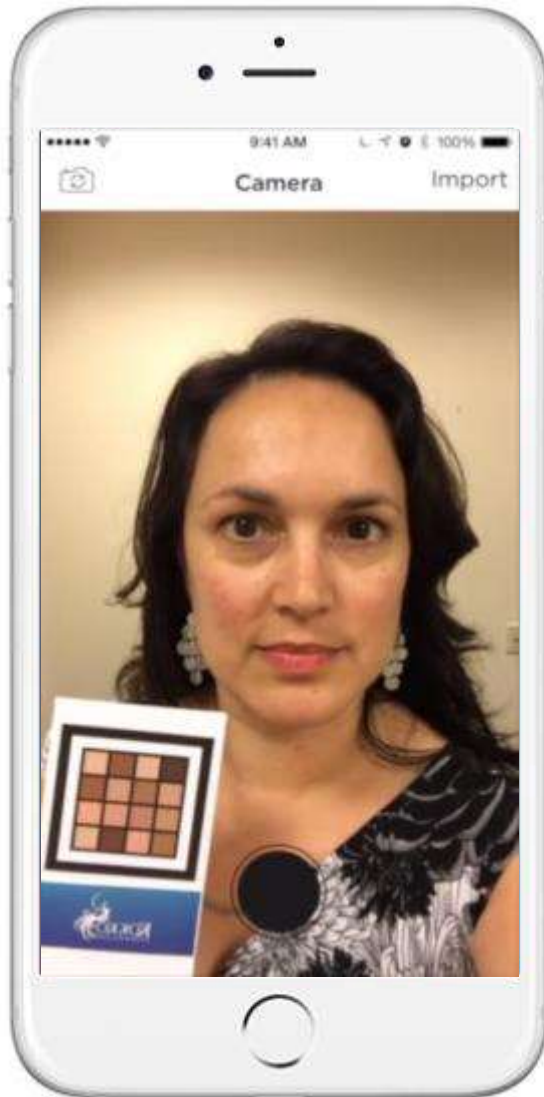


*Hewlett and Packard Cosmetic advisor kiosk*



# Tools to help select and use make-up

## *Kokko beauty 2015*



*App Demo video  
(2015)*



*Demo video (2015)*



*Introduction video  
(2015)*



*Company website*





# Skin colour evaluation

## *X-rite 2015*

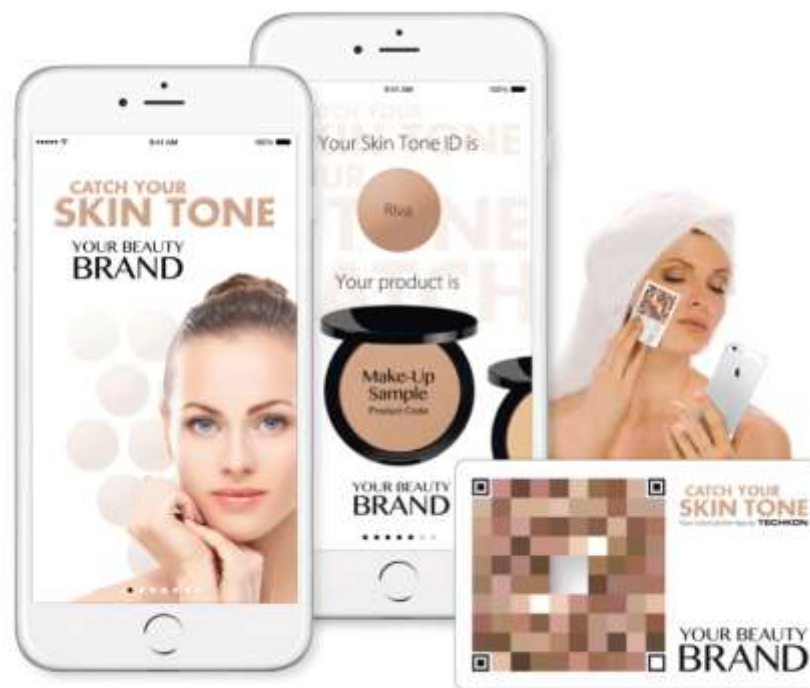






# Skin colour evaluation

## Techcon 2015

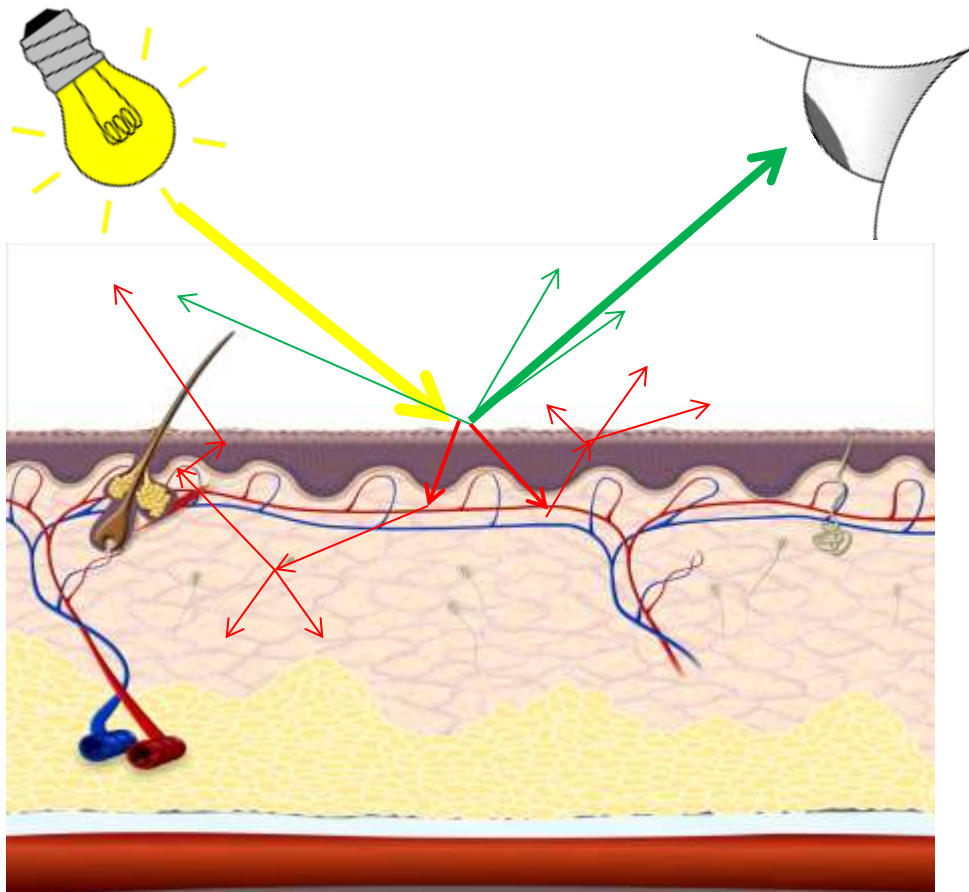


*Catch your skin tone*



# Technical challenges of capture skin tone

## *Appearance of skin*



### ➤ Surface reflections

- a) Diffuse reflections (matt)
- b) Specular reflections (shine)

### ➤ Dermal refraction

- a) Scattering
- b) Optical propagation
- c) Chromophore absorption



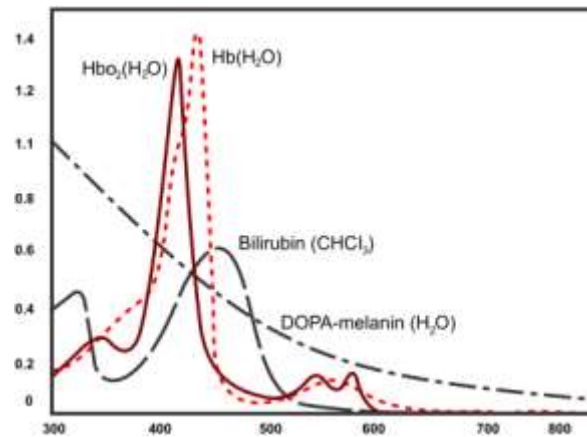


# Technical challenges smartphone skin tone reading

- The appearance of the colour target and skin don't behave the same in different types of illuminations:
  - ✓ Difusse vs. angled illumination
  - ✓ Colour temperature
  - ✓ Spectral completeness
  - ✓ Different rendering behaviour spectral absorption pigments
- Undertones are very subtle but determining elements
- Shading effects (photogoniometric effects)



# Technical challenges smartphone skin tone reading

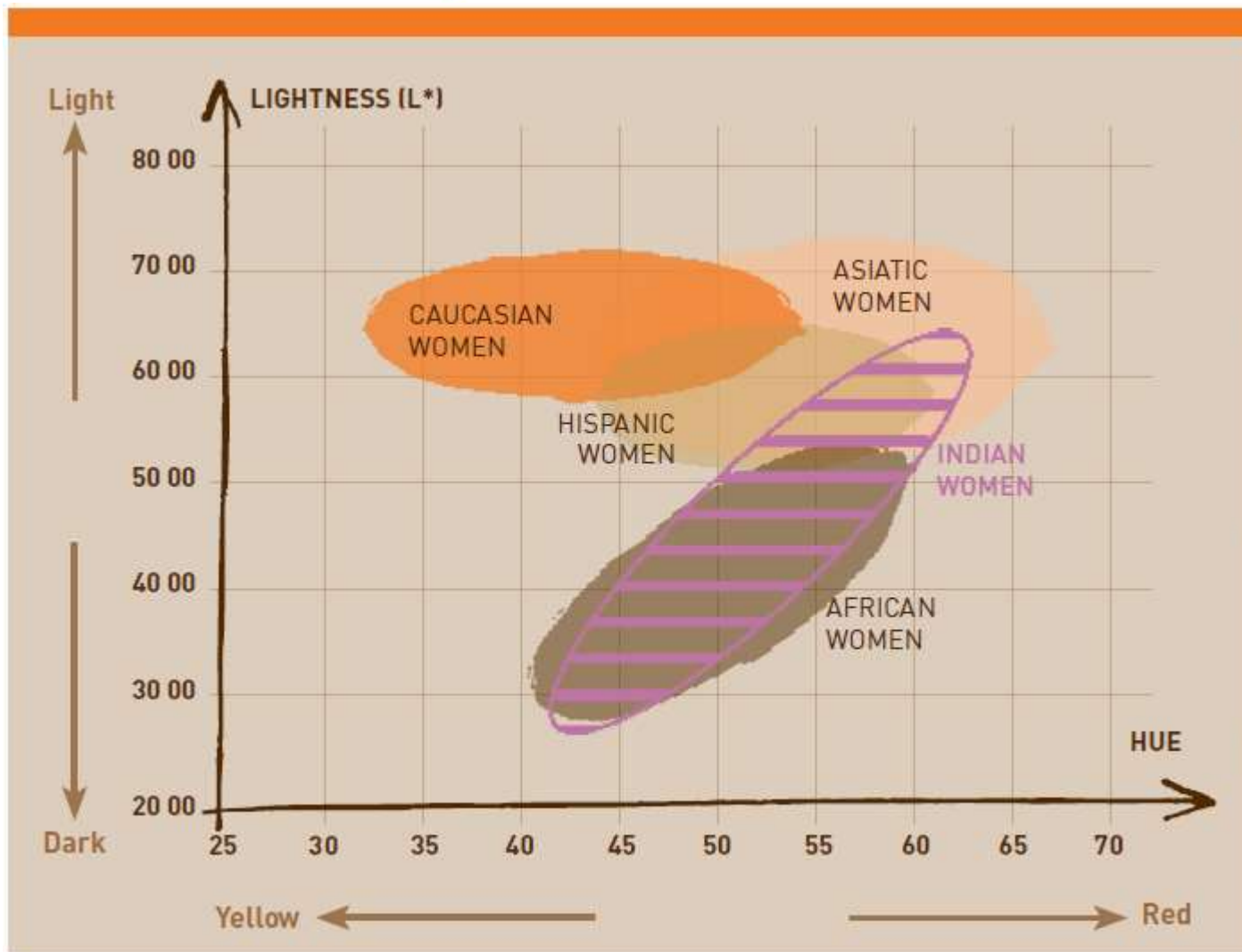






# Skin Colour continuum

## *A delicate element of appearance*





# Virtual make-over

## *L'Oréal's Makeup genius (2014)*

**L'ORÉAL**  
MAKEUP DESIGNER/PARIS  
巴黎欧莱雅 彩妆设计师

**MAKEUP GENIUS**

*The making of Makeup genius (2014)*





# Virtual make-over *Modiface (2010)*

e.g., to search for a blue eyeshadow, type "I want a blue eyeshadow"

HAIR EYES LIPS FACE ANTI AGING SKIN CARE LOOKS NEW PHOTO

FOUNDATION BLUSH CONCEALER

BLUSH @ remove

AMOUNT

SPARKLE GLOSS

Upload from Desktop

Upload from FACEBOOK

Choose a Model:

PRODUCTS

stila eye shadow pans  
in azure  
\$18

SHARE

SAVE

EMAIL

FACEBOOK

TWITTER

PINTEREST

g+

g+

UNDO COMPARE ZOOM ADJUST DOTS CLEAR



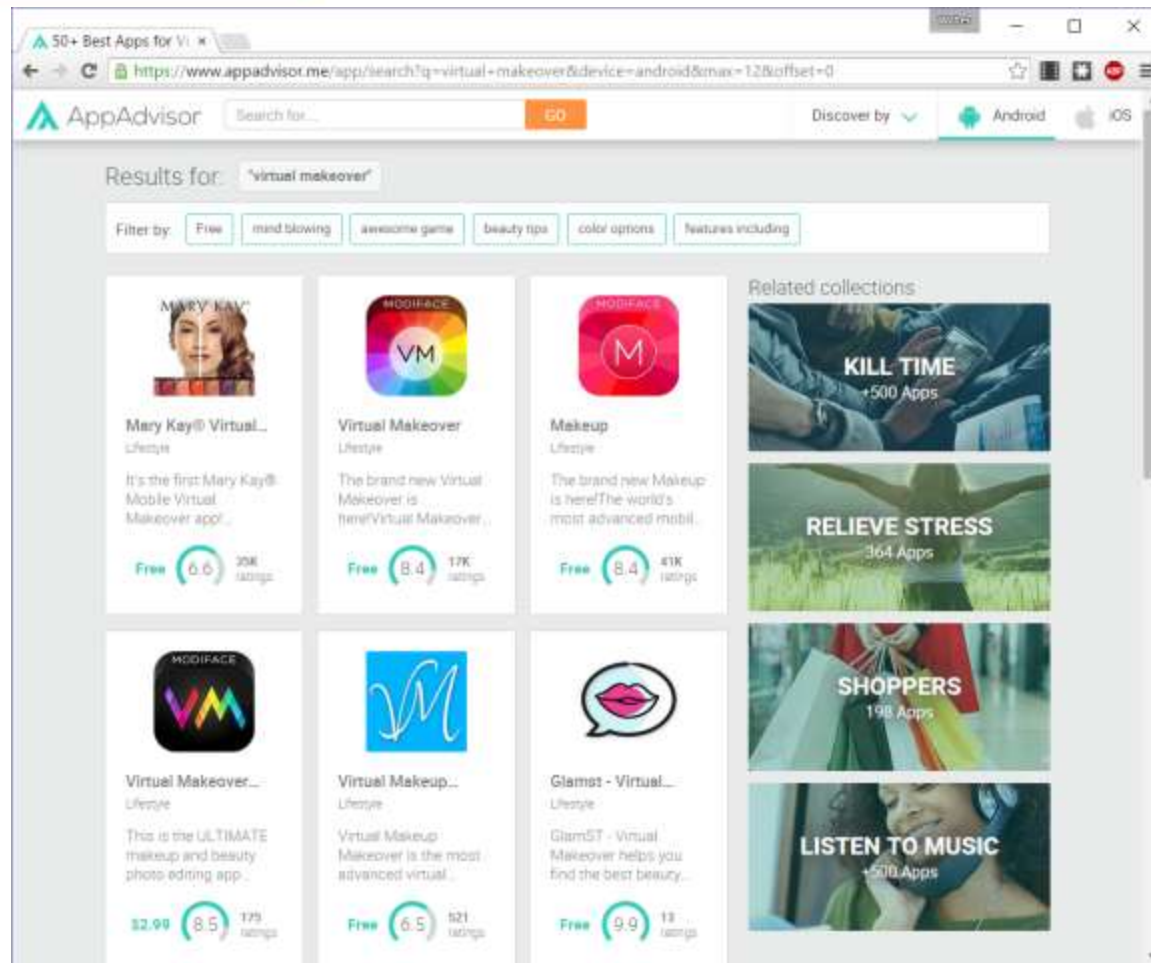
# Virtual make-over

## *Many to follow (2015)*



*YouCam Makeup (Google PlayStore)*





*AppAdvisor 50+ virtual makeover Apps*



# Virtual make-over *Tool, gadget or toy?*

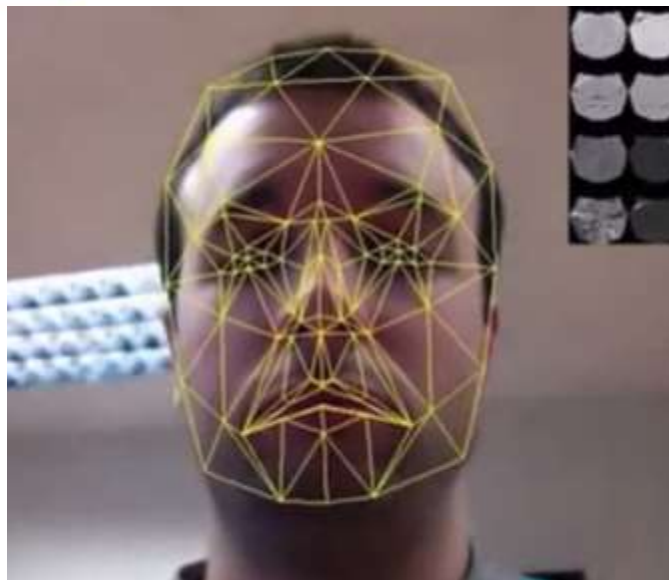
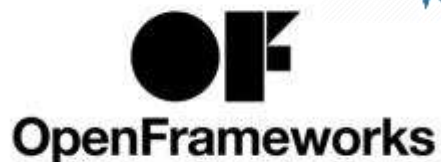


*Barbie digital makeover by Mattel*



# Virtual make-over

*The open source world – a free and busy world*



*Real-Time Adaptive 3D  
Face Tracking and Eye  
Gaze Estimation*



*jKiwi opensource VM application (2007)*





ANDROID APP ON

Google play



Available on the  
App Store





# Considerations of consumer Apps

## *Tool, gadget or toy?*



2 Billion smartphones	1,7 million Apps, just 42 App per phone
True selling tool	online engagement / moment of attention
Strategic tool	Add-on instrument
Cheap	Unique
Credible result	“you are doing it wrong”
Sustainable innovation	Disruptive innovation
Market leader	Adapter

# Tools to help select and use make-up

## *X-rite (2013)*



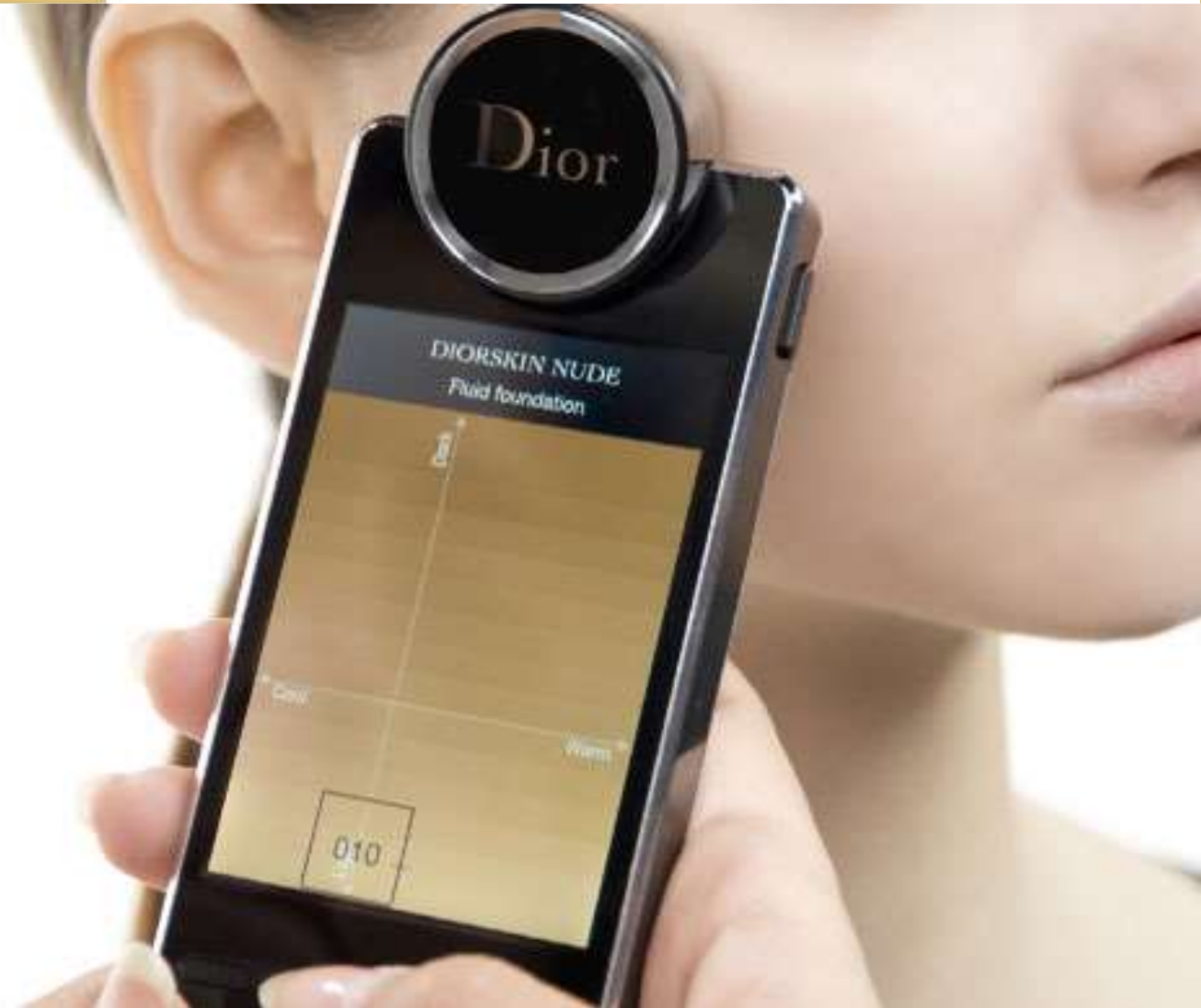
 *Sephora + Pantone Color IQ*



 *No7 Match made service*

# Tools to help select and use make-up

## *Dior Shade Analyser (2013)*

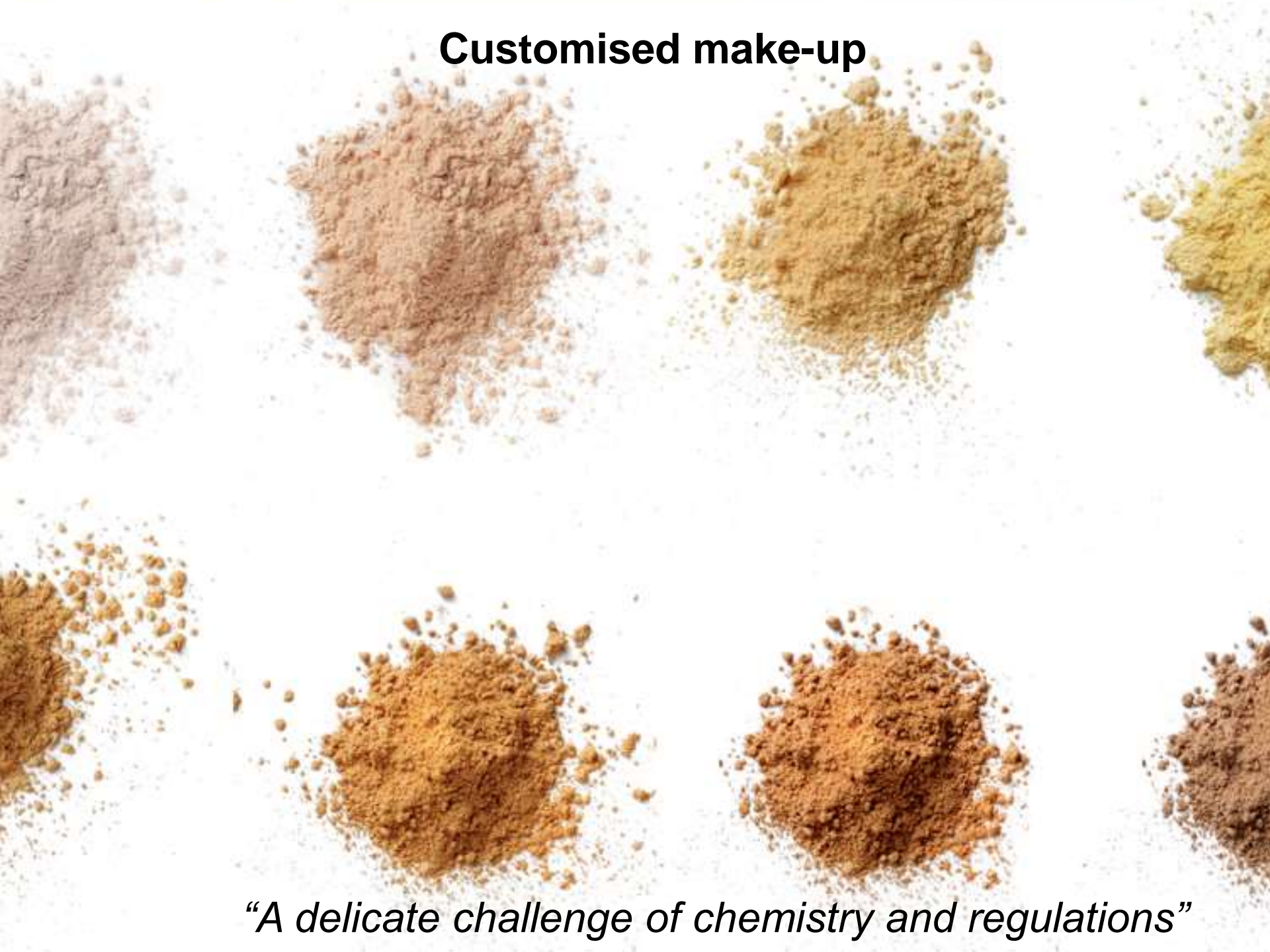


*Dior back stage*

[www://](http://www://)



## Customised make-up



*“A delicate challenge of chemistry and regulations”*





# Customised make-up

## *Mink makeup printer(2014)*



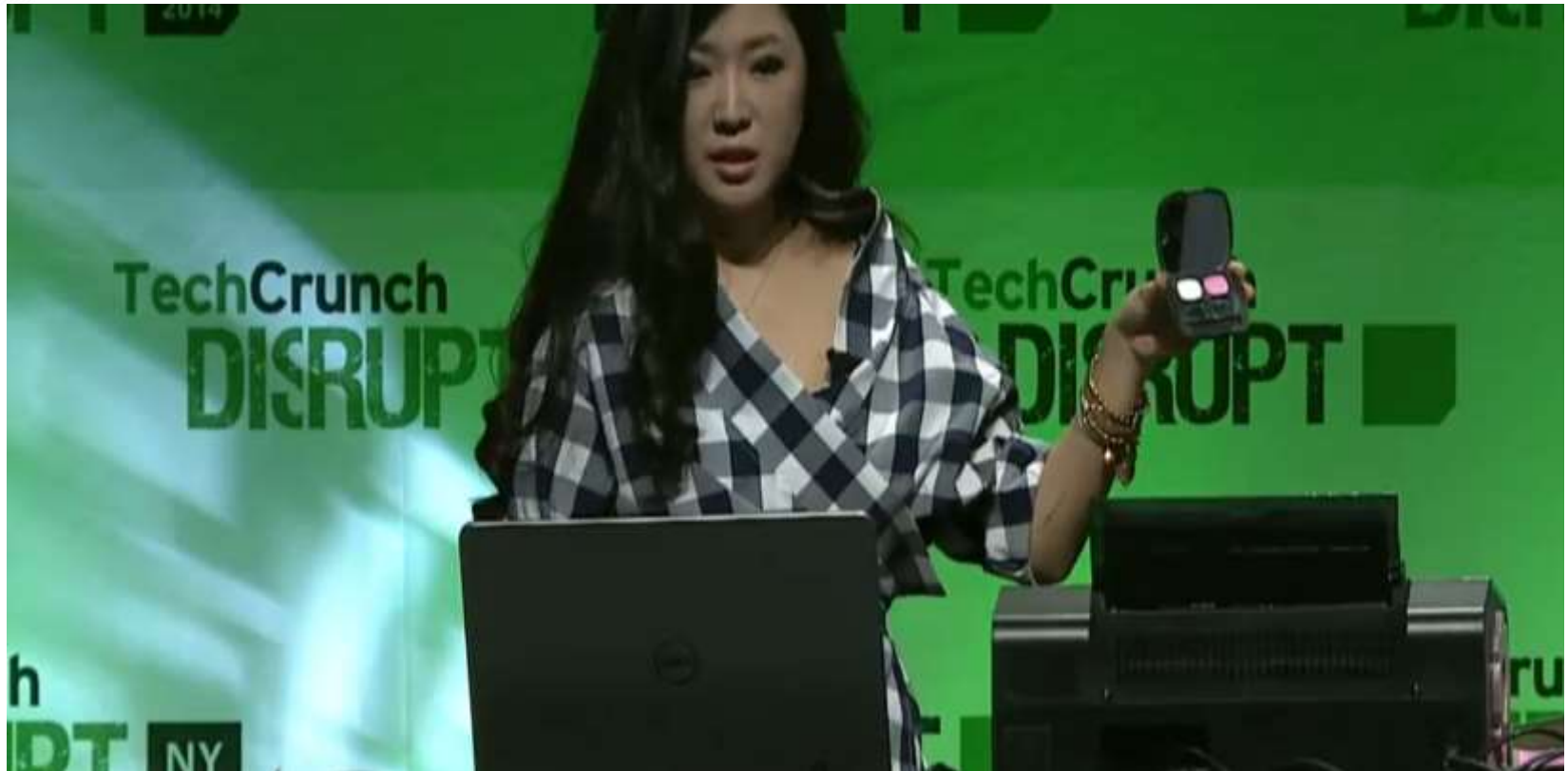
*TechCrunch Disrupt 2014*



*Demo video*



*A Harvard Woman Is Blowing Up  
The \$55 Billion Beauty Industry*



*Hack your HP printer*



*Why you can't print quality  
cosmetics*



# Customised make-up

## *Mink makeup pen (2015)*



Digital Makeup Pen Starter Kit  
\$295.00



Matte Powder Medium  
\$12.00



*Mink digital makeup pen*



# Customised make-up

## *Sayuki custom cosmetics*

27

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# Customised make-up

## *Sayuki custom cosmetics (2011)*



*Patent filings Larry Igarashi*  
*Purchased by L'Oréal in 2014*



# Customised make-up

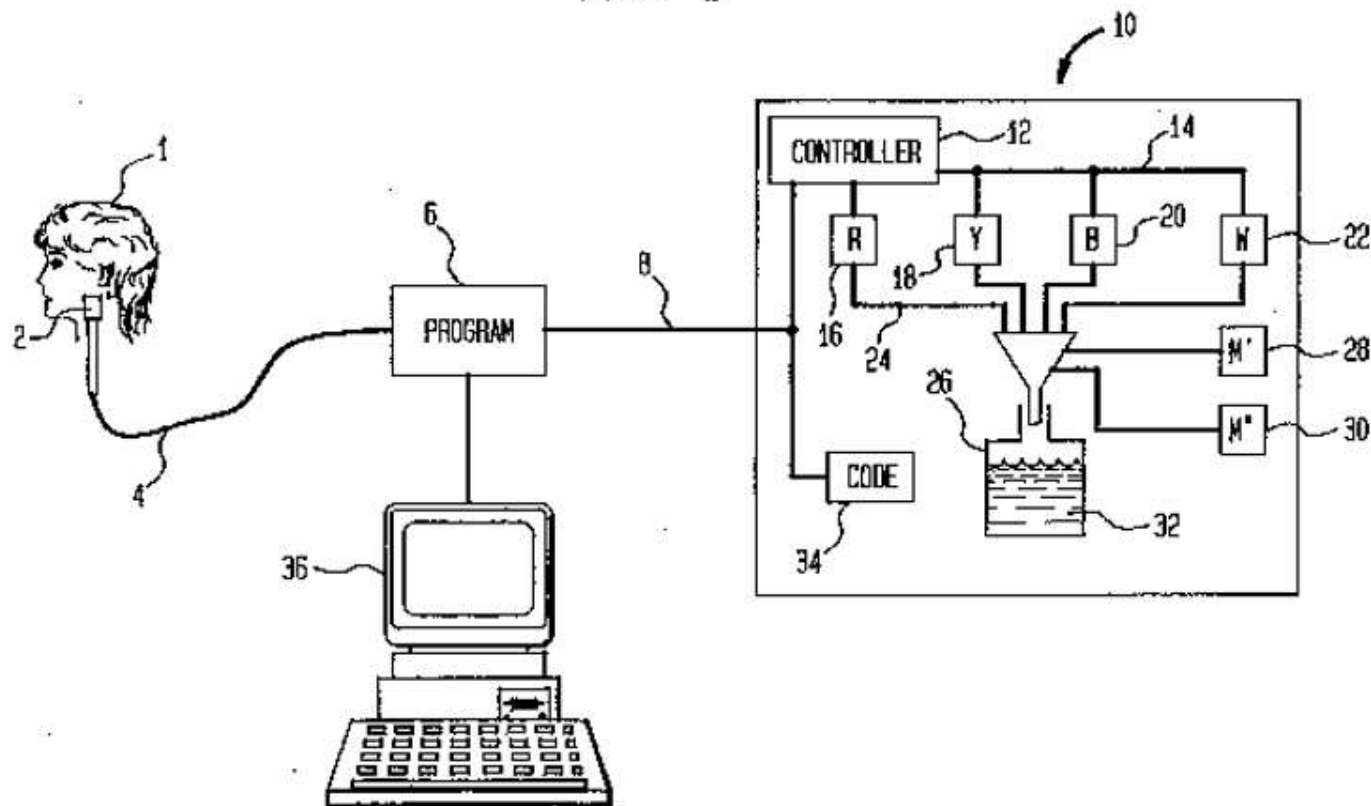
## *Elisabeth Arden patent filing (1997)*

U.S. Patent

Apr. 22, 1997

5,622,692

FIG. 1



*Elisabeth Arden patent filing (1997)*



# Customised make-up *Hydrocosmetics (1989)*

30

© 2014



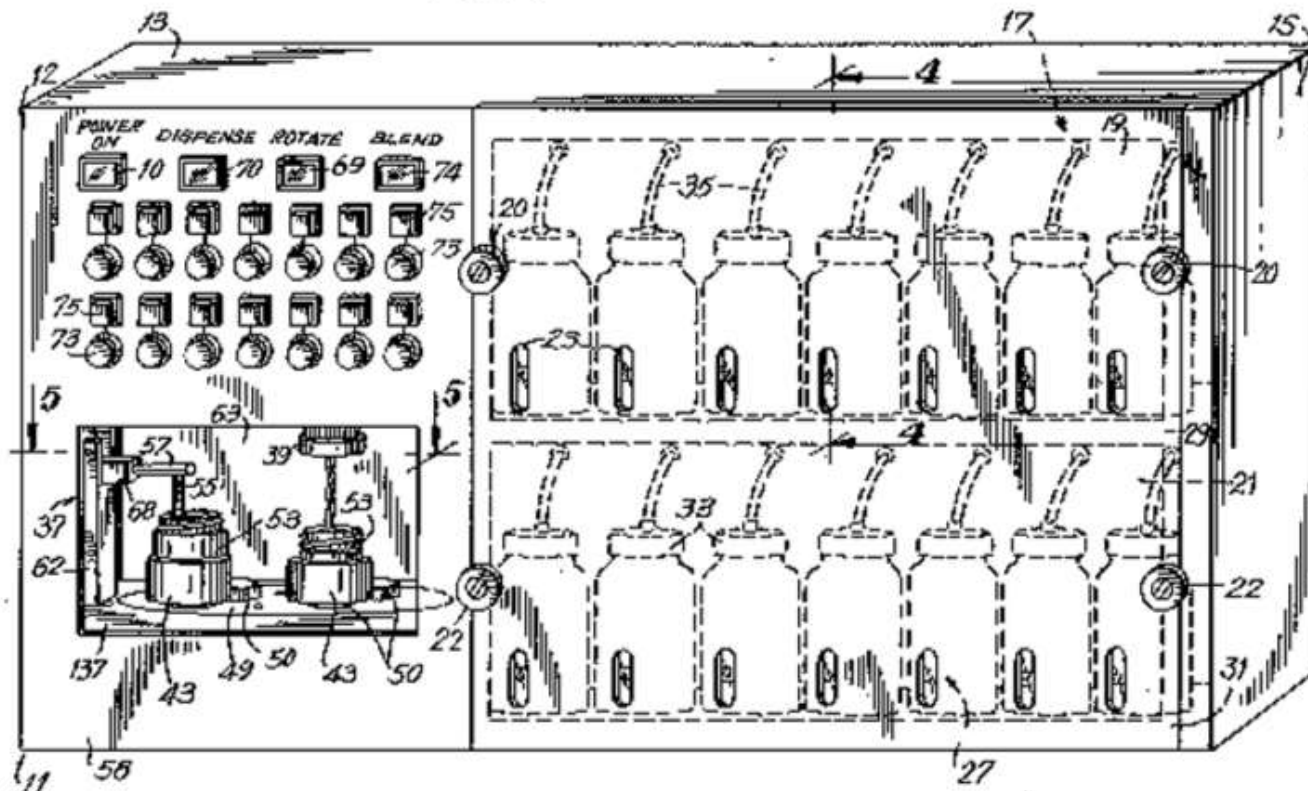
U.S. Patent

Oct. 3, 1989

Sheet 1 of 8

4,871,262

FIG. 1

[www://](http://www.innofaith.com/c360.pdf)*Hydrocosmetics Inc. patent filing (1997)*



# L'Oréal Paris Intelligent Color Experience 2013

31

© 2014



*News video*



# Forea Moda digital makeup artist 2015 – real or fake?



*“demo” video*



*Moda website*

*Visia knock off  
on alibaba.com*



*April Fool day?*

*Indeed!*



A woman with long, dark, straight hair is shown from the chest up, looking down with her eyes closed. To her left, a glass bottle is tilted, pouring a stream of golden-yellow olive oil. The background is a plain, light color.

**Personalised  
& customised  
hair care**

*“A challenge of  
understanding consumer  
expectations”*

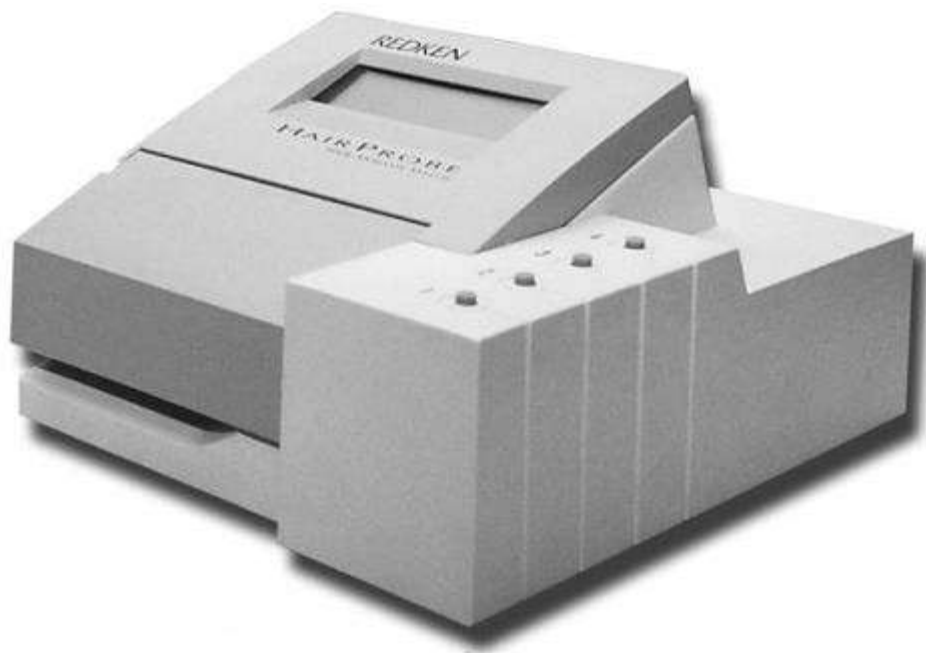




# Personalised Perm treatment

## *Redken (1970s)*

*Permanent wave*



*Redken Hair probe demos  
(filmed with old Nokia in 2008)*



# Personalised Perm treatment

## Redken (1970s)

U.S. Patent Nov. 25, 1975 Sheet 1 of 3 3,921,443

Fig. 1

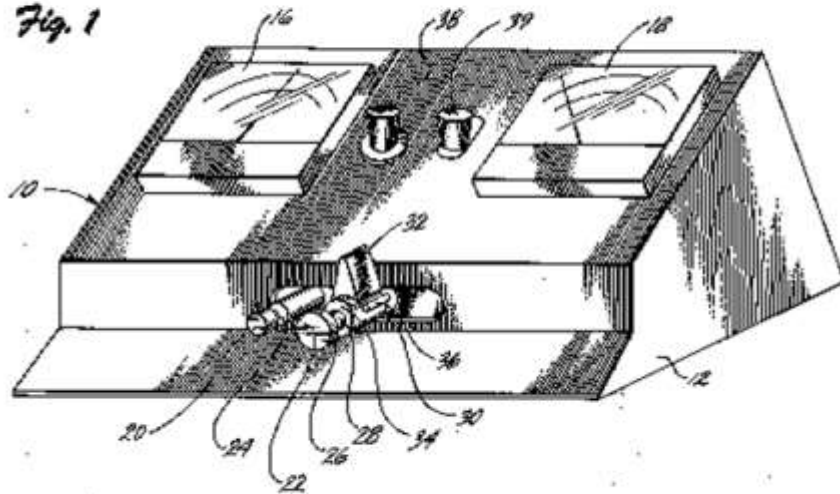
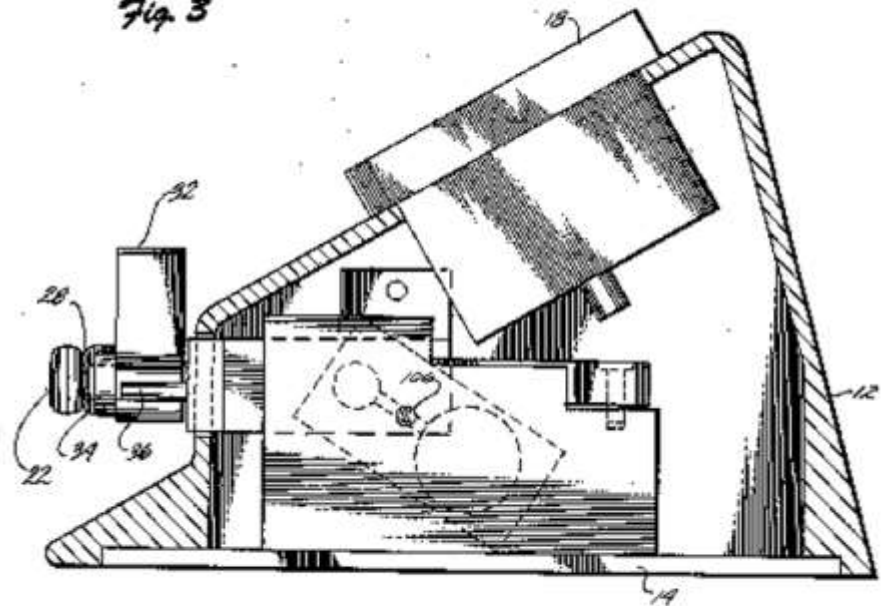


Fig. 3



Patent filings Robert Yates (Redken laboratories)



# Custom hair care *Concoction* (2013)



*“demo” video*





# Personalised hair dye preparation system

## *Coloright (2002)*



*Company website via  
[www.archive.org](http://www.archive.org)*



*Coloright PRO*



*Coloright POS*





# L'Oréal acquires Coloright

## *Coloright (2014)*

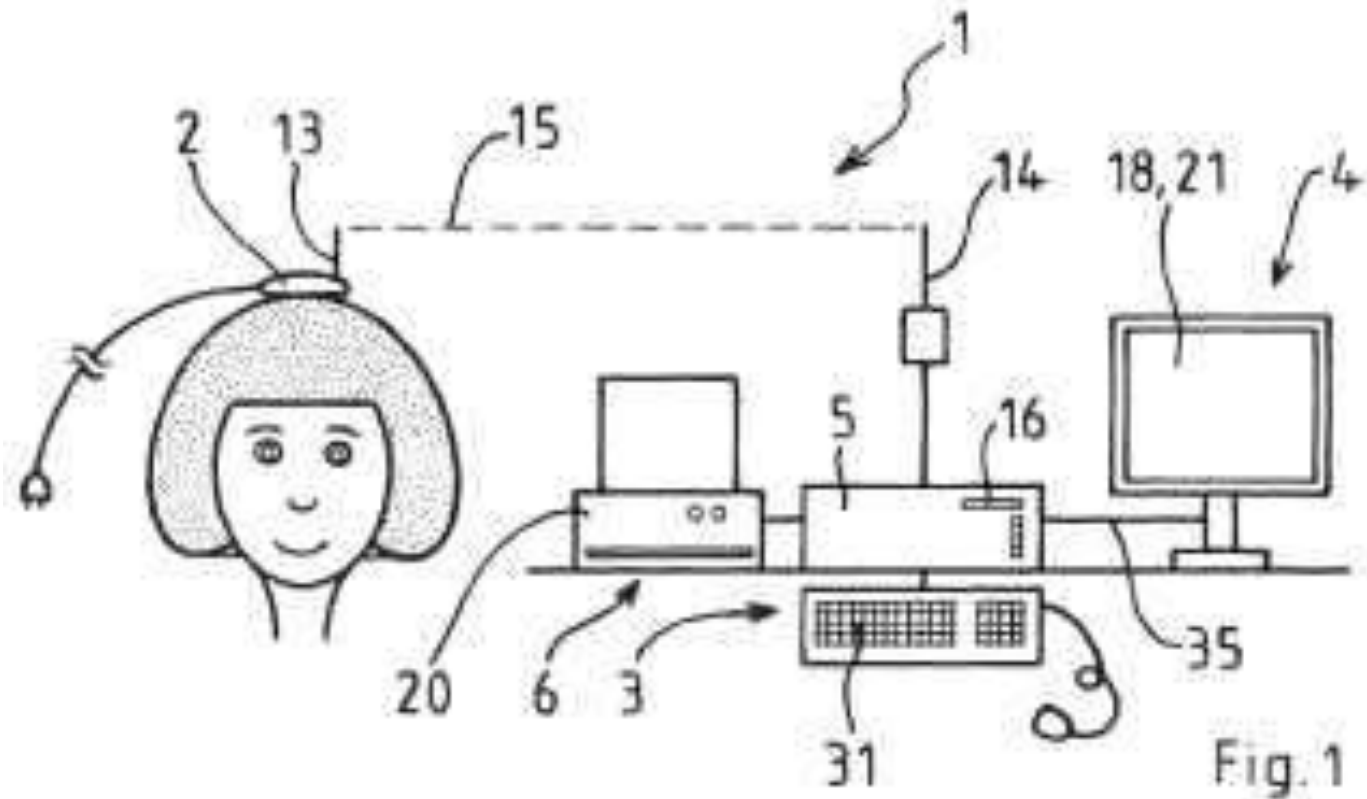


*Cosmetics design news article*



# Color Consultation System for a Hair Salon

## Wella (2008)

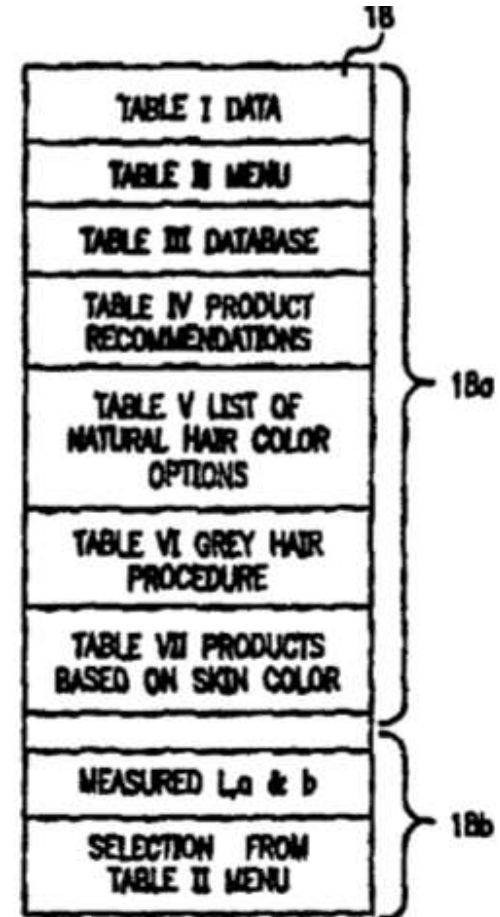
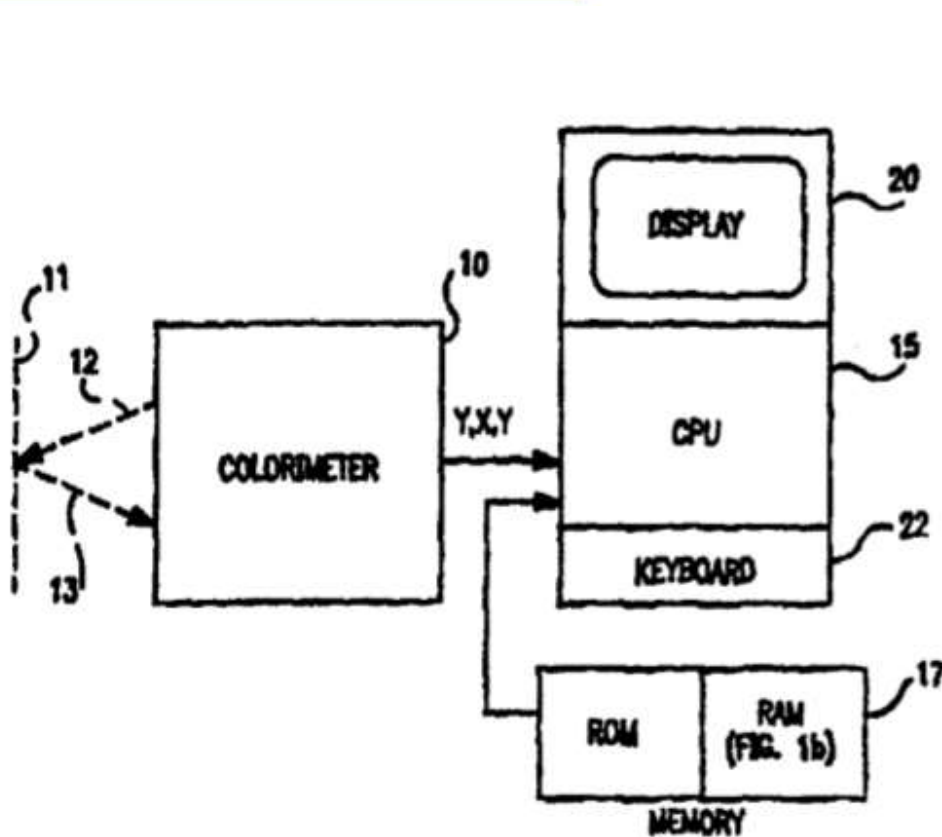


Wella Patent filing Color Consultation System for a Hair Salon





# Method and apparatus for hair color characterization and treatment (1995)



*Early patent filing for determining hair color*

# Personalised skin care

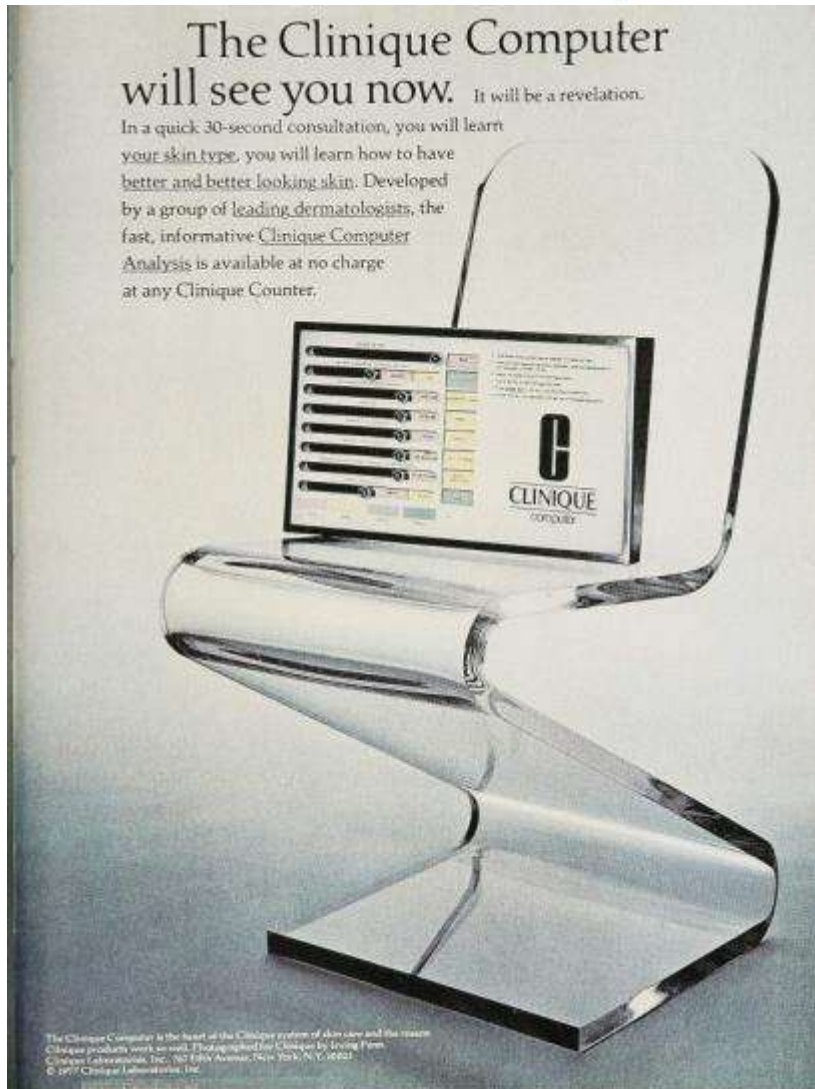
*“A complex challenge of understanding skin biology and personal needs”*





# Clinique

## *The Clinique Computer(1977)*







# Clinique Experience bar (2012)



*2011 Clinique iPad  
advisor*





# Ioma cosmetics

## *Ioma skin analysis (2010)*



*Interview with Ioma  
founder Jean Michel Karam*



*Unilever acquires majority  
stake in Ioma*

*demo 'video*





# La-roche Posay / Vichy DermoAnalyser (2010)



*Demo video*







# Vichy SkinConsult (2010)



*demo'video*





# Eucerin

## Skin code reader (2012)



*Beiersdorf news*



*Eucerin Hautinstitut*



# Lancome

## *Diagnô Expert/Express/Advanced biometric system*



*Express*



*Expert*



*Advanced biometric system*





# Sylton

## *Aveal skin care consultation system (2012)*



*Demo video*





# SkinCeuticals

## SkinSope LED (2013)



*Introducing The SkinCeuticals  
SkinSope LED*

*Demo video*





# At home skin analysis *Canfield / Olay (2012)*

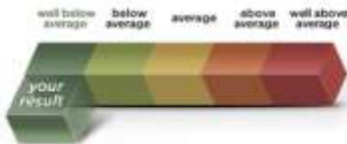


## YOUR RESULT



### Wrinkle Analysis

Compared to others of your age and skin type, your results show that you have **well below average** number of wrinkles.



Add a New Photo

### How Pro-X Can Help



Advance Cleansing System  
(at least one time a day)

[Buy Now](#) [Learn More](#)



Age Repair Lotion  
with SPF 30  
(morning and evening)

[Buy Now](#) [Learn More](#)



## See what the skin experts see. For FREE.

Watch the video and see how this headband can get you a FREE personalized skin analysis online — using just your digital camera and home computer.



*Instruction video*



*Promotion video*



*Results video*







# At home skin analysis *Way via Indiegogo (2015)*



*Crowdfunding page*



*Promotion video*





# At home skin analysis *Oku(2015)*



“Based on the triple sciences of  
dermoscopy, nanotechnology  
and spectroscopy”

*Promotion video*



*Skepticism!?*



# Considerations

2 Billion smartphones v.s. 1,7 million Apps, 42 App per phone  
Online engagement & selling tool vs. Moment of attention

Promotion tool vs. sales vehicle?

Strategic tool vs. Add-on instrument

Cheap vs Unique?

Result 100% reliable vs. “you are doing it wrong”

Sustainable innovation vs. Disruptive innovation vs. Media moment

Innovate vs. adapt





# Purpose at home or POS

## *Gadget or sales tool*



<b>At Home</b>	<b>Point-of-Sale</b>
Device is the expert	Beauty advisor is the expert
Technical interest	Tool adds professionalism/credability
No sales moment	Consultation creates sales opportunities
Initiator of web sales	Tool to differentiate
Impulse interest	Strategic communication tool
Payed by consumer?	Tool owned by retailer or cosmetics brand
Obvious purposes	Aid for the BA to communicate 'scientific rationales' of innovative cosmetics.

## Customised skin care

*“A complex challenge of  
formulating to personal needs”*





# Custom cosmetics *Prescriptives (1979)*



*“Mother” of custom cosmetics:  
“Sylvie Chantecaille”*

*History customised skincare  
and makeup brand*







# My Blend

## Dr. Olivier Courtin-Clarins (2010)



*My Blend concept explained*



*Demo of skin diagnosis*



# Keraskin esthetics

## Serum blending (2012)





# GENEU

## *DNA personalised skin care (2014)*



*Promotion video*





# SK-II

## DNA personalised skin care (2015)



Brand philosophy



Promotion video



IFA 2015 Press release

[www://](http://www://)

Philips SkinProfile

[www://](http://www://)



# *Technical brands disrupting the cosmetics market?*

# SONY







# Philips Crystalize 2009



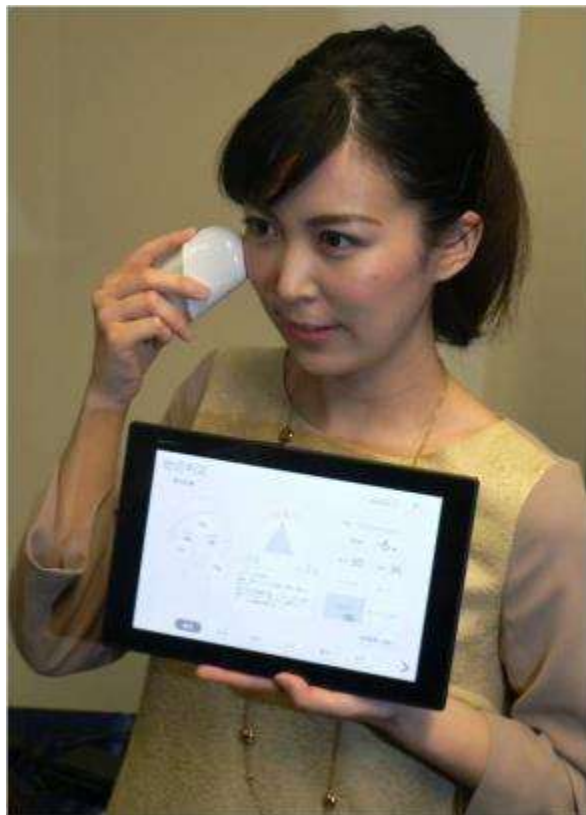
*NY Times article*



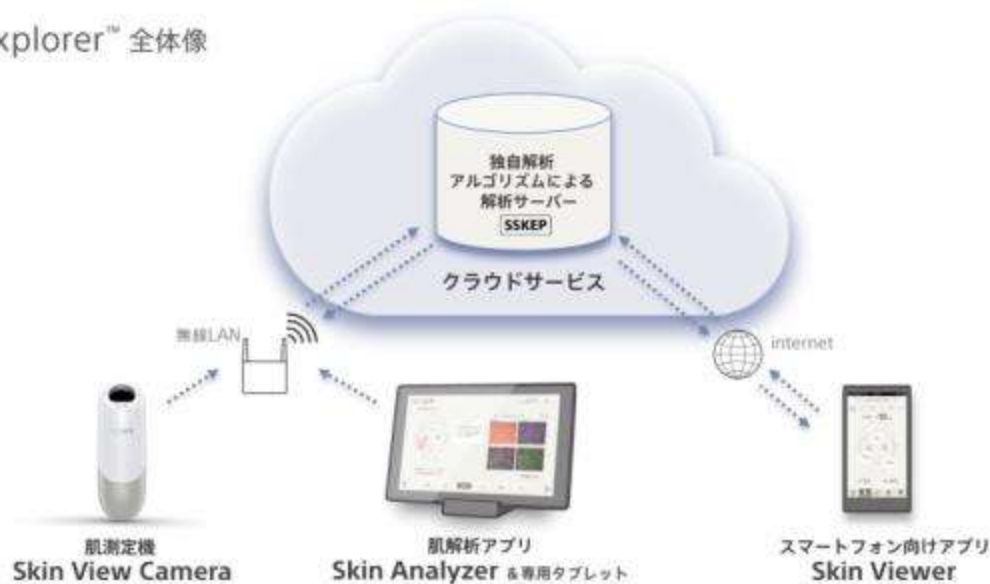
*Promotion video*



# Sony Beauty Explorer 2015



BeautyExplorer™ 全体像



BeautyExplorer™

肌測定～解析～データ管理 SSKEP技術を核とした肌解析システム



*Cosmetics Design article*



# Skin care health tracking

## Fujitsu 2013



*News video with demo (2013)*



*Fujitsu press conference (2013)*





# ***Added value of a technical brand in cosmetics?***

Value or conflict of brand?

Service for the consumer?

or

Service for the retailer?

or

Service for the beauty advisor?

or

Service for the cosmetics brands?

Is the technical brand “more of skin expert?”

What is the added value for the consumer?

What is the added value for the cosmetic brands?



# Innovation mania!?

Disruptive innovation or “Disruptive” innovation

Usual mix of “sensor, cloud, online community”

Multi-billion euro cosmetic market an investors bait

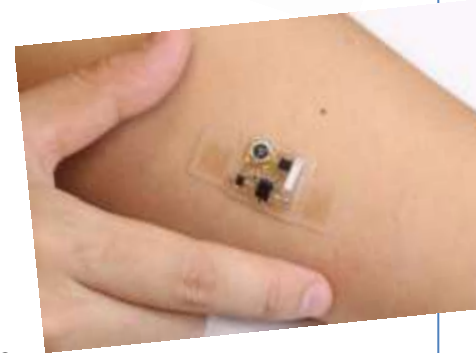
Start-ups are big business; a start-up is not a business.

Inflation of innovation, inflation of expectation, inflation of value


Beauty industry is a personal and emotional world

Technology itself should not be the interesting part

**TechCrunch**  
**DISRUPT**



**KICKSTARTER**



# Considerations of a successful innovation

## Consider that:

- 1) Your brand and brand vision are the most valuable (=why)
- 2) *What* do you want to achieve with innovation
- 3) What are the challenges you are encountering? (non technical)
- 4) *How can you achieve this (without considering particular technologies)*

Do NOT consider that the value is within a technology  
....because it is not....not within the cosmetics industry

## Invest in:

- A true aid to deal with the challenge
- Simplicity and intuitive use
- Concept flexibility
- Credibility of the result
- A swift consultation routine
- Scalability!
- Training!
- Communication!



# Types and applications of skin evaluation at the P.o.S.

## Visual “convincing” tools



## Consultation frameworks



## “Promotion” tools (Crowd stopper)



### Pros

- “Convince by confrontation”
- Endorsment of the BA's expertise
- Dialog opportunity

### Cons

- Requires training and experience

### Pros

- Credability
- Advice result driven
- Cross selling opportunity

### Cons

- Training required
- Can become time consuming

### Pros

- Simple sales training
- Dialog opportunity to talk about new product

### Cons

- One way communication



# ***Benefits for of skin care consultation system***



- ✓ Increase of sell out
  - Daily use **+80% to 90%**
  - Promotion events **+240%**
  - 30-35%** of consumers who have an analysis buy one or multiple products
- ✓ Increase brand awareness
- ✓ Recruitment of new customers & build brand loyalty
- ✓ Cross selling / fuller basket
- ✓ Contribution to brand professional values
- ✓ Turns *selling* into *education, consultation, buying*
- ✓ Increases professionalism of beauty advisor
- ✓ A true assistant for your Beauty Advisor
- ✓ Adaptable to your sales situation
- ✓ Enhance your in-store presence



# ***Example of costs of full custom point of sale device***

## **Typical Device costs**

Simple concern tool	100-200 €	@ 1000 units
Handheld touchscreen tool	350-700 €	@ 1000 units
Advanced tool/ Kiosk system	2500-5000 €	@ 100-500 units

## **Development costs**

100k€ - 750k€

Biometric sensor & algorithmic design, data analysis, product design & engineering, injection moulding tooling, regulatory tests

## **Typical client effort**

Clinical studies (30-300 volunteers)

Marketing (concept, content, communication development) 1000-5000 hrs

## **Other costs:**

- Deployment logistics
- Training
- Globalisation (product adaptation/translation)
- Returns/on-site servicing
- Product catalogue updates at product launches
- Yearly software/feature updates





# Typical development process



1 to 2  
years



## ***Take home message***

“Technology is just a tool and not  
the means for innovation”



***Thank you for your attention!***



***Walter Arkesteijn, Bsc.***

*Technologist and managing director  
at InnoFaith beauty sciences B.V*

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**BOOTH E30**



*Company video presentation*



[www.innofaith.com/c360.pdf](http://www.innofaith.com/c360.pdf)

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