KTP LASER and Skin care

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Objective

- Perform a landscape search in the area of KTP LASER with application in skin care and cosmetics
- Use PCS to derive insights and gain competitive perspective
- Understand the value chain and recent M&A activities

Introduction

- The potassium titanyl phosphate (KTP) vascular laser has generally been used for the treatment of telangiectases and rosacea but has also recently been shown to be effective for the treatment of acne and wrinkles [Ming H.Jih]
- Superficial pigmented lesions have also been reported to be treated with KTP laser- 532 nm [Seok Hyun Yun]
- Irregular pigmentation and telangiectasia can be treated with intense pulsed light sources (IPL) and 532 nm potassium-titanyl-phosphate lasers (KTP). It has also been used to reverse the dermal and epidermal signs of photo- and chronological aging [Pinar Avci]



[KTP VIRIDIS DERMA Multipulse (Quantel Médical)]



[KTP 532 nm for Rosacea]



[KTP Laser Beauty- ROYAL-QL330]

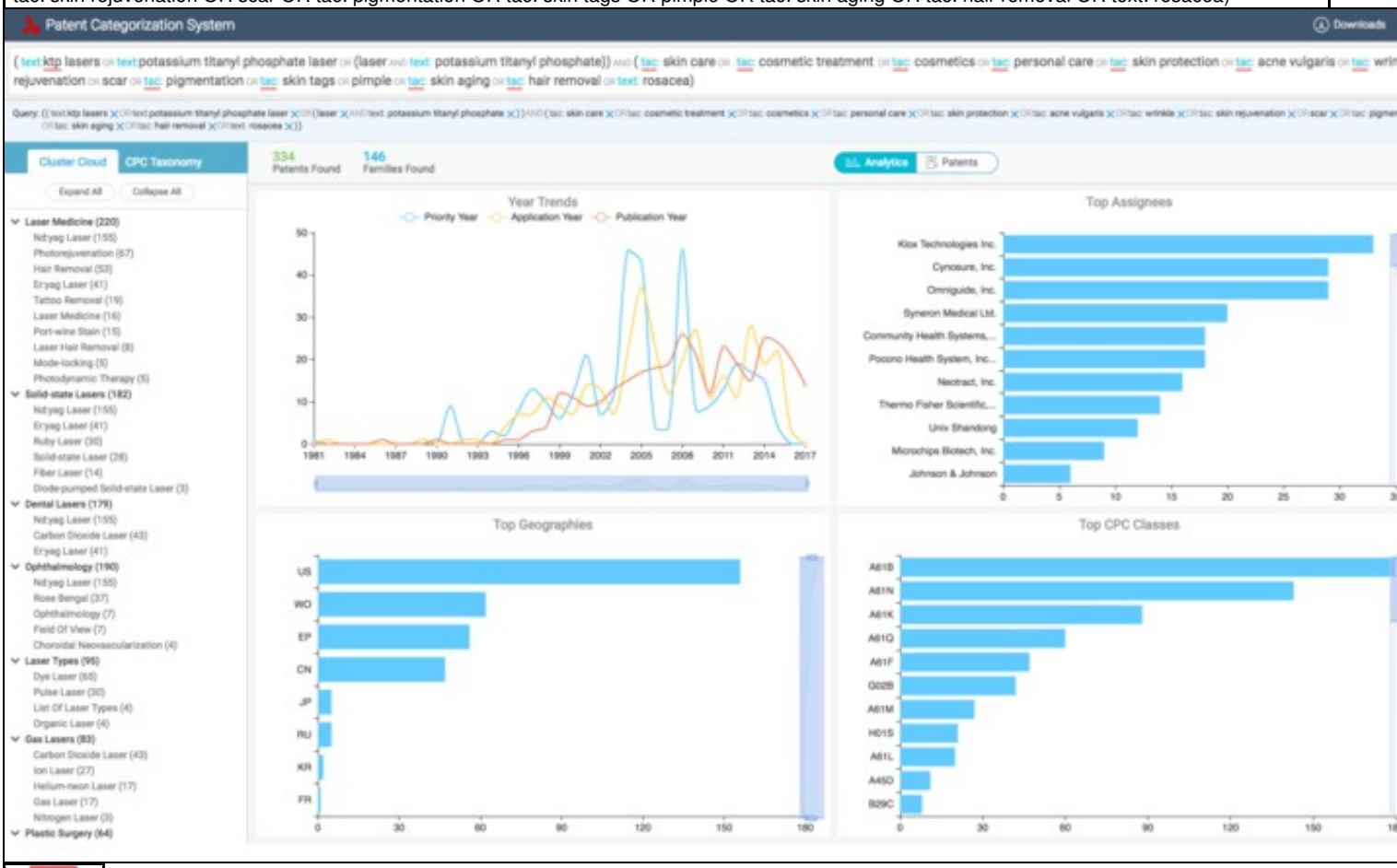
Search in PCS

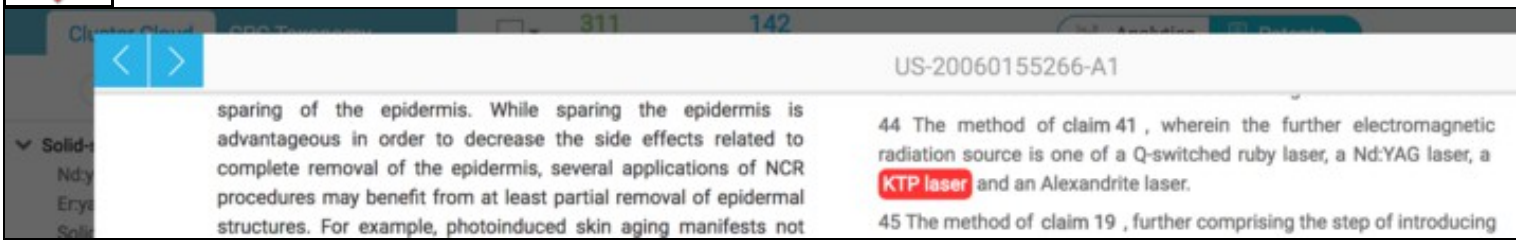
A search on PCS applications of KTP LASER in skin care was performed with the following search strategy:

(text:ktp lasers OR text:potassium titanyl phosphate laser OR (laser AND text: potassium titanyl phosphate))

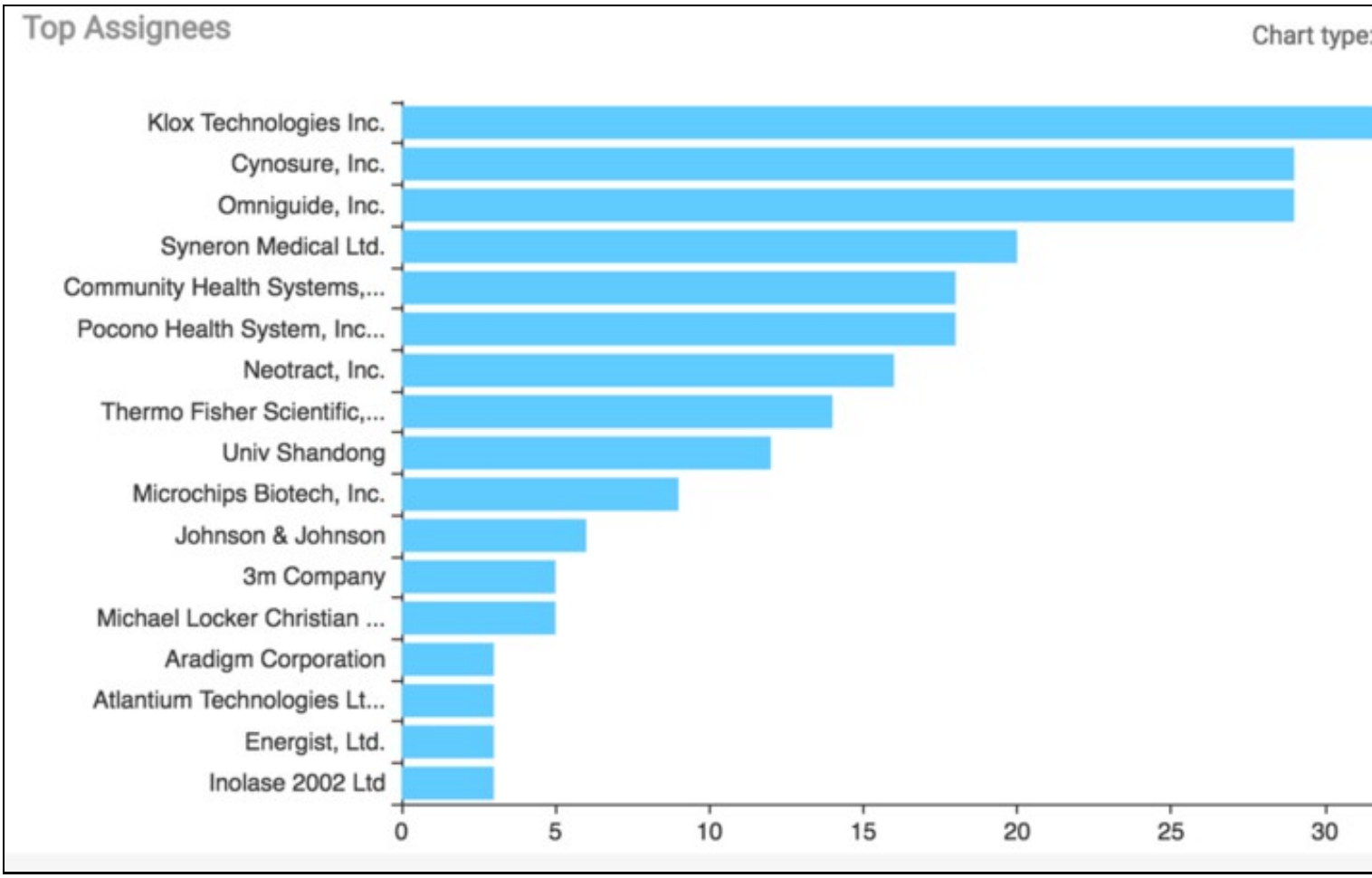
AND

(tac: skin care OR tac: cosmetic treatment OR tac: cosmetics OR tac: personal care OR tac: skin protection OR tac: acne vulgaris OR tac: wrinkle OR tac: skin rejuvenation OR scar OR tac: pigmentation OR tac: skin tags OR pimple OR tac: skin aging OR tac: hair removal OR text: rosacea)





Top Assignee

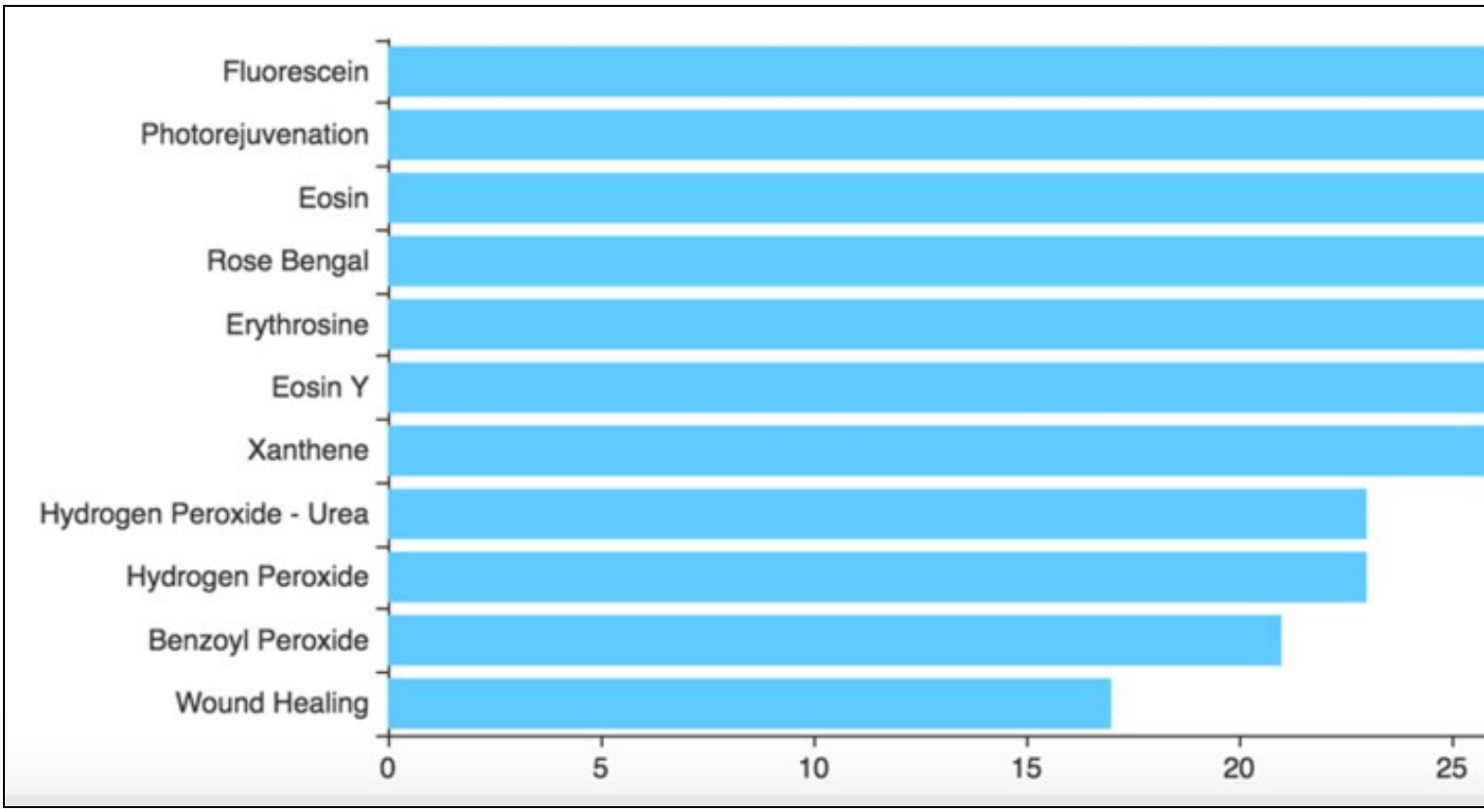


- The top companies are big players in cosmetics and aesthetic devices from North America
  - ♦ Klox Tech- Quebec
  - ♦ Cynosure & OmniGuide - Massachusetts
  - ♦ Syneron & Neotract- California
- Two major hospitals in US, that have also patented technologies in this space:
  - ♦ Community Health Systems
  - ♦ Pocono Health Systems
- ThermoFischer Scientific patents come from its acquisition of ThermoLase Company

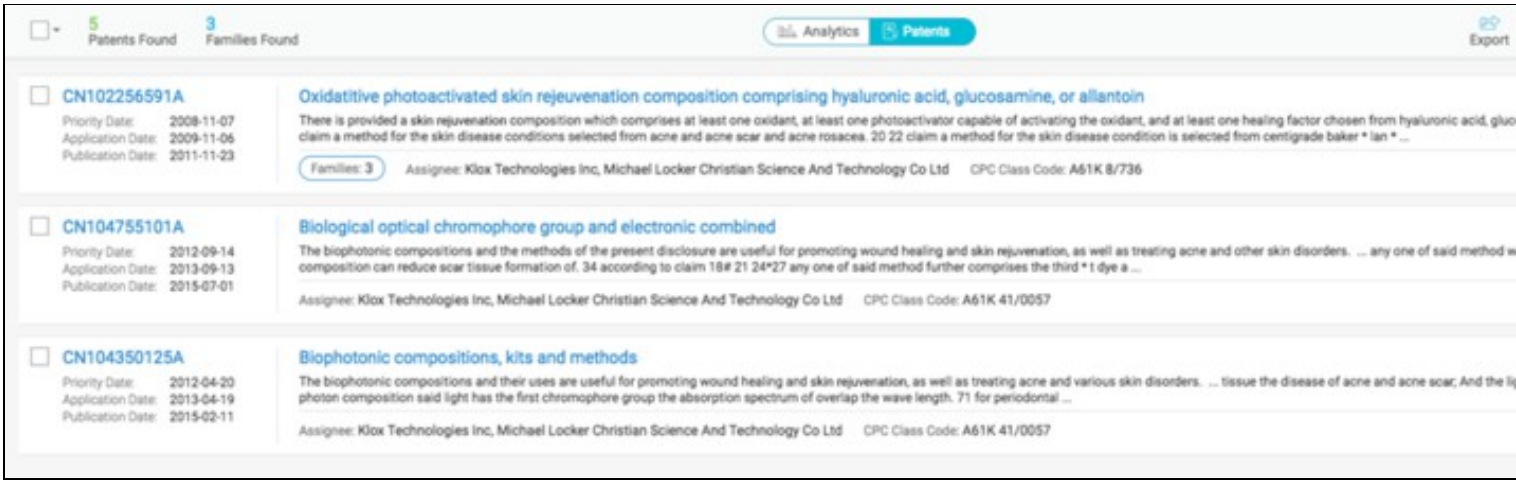
Top Assignee Insights



- **Johnson & Johnson** has patents related to the treatment for acne , pigmentations, scars, and wrinkles
- These patents are mainly using LASER therapy and don?t use any chemical agent alongside



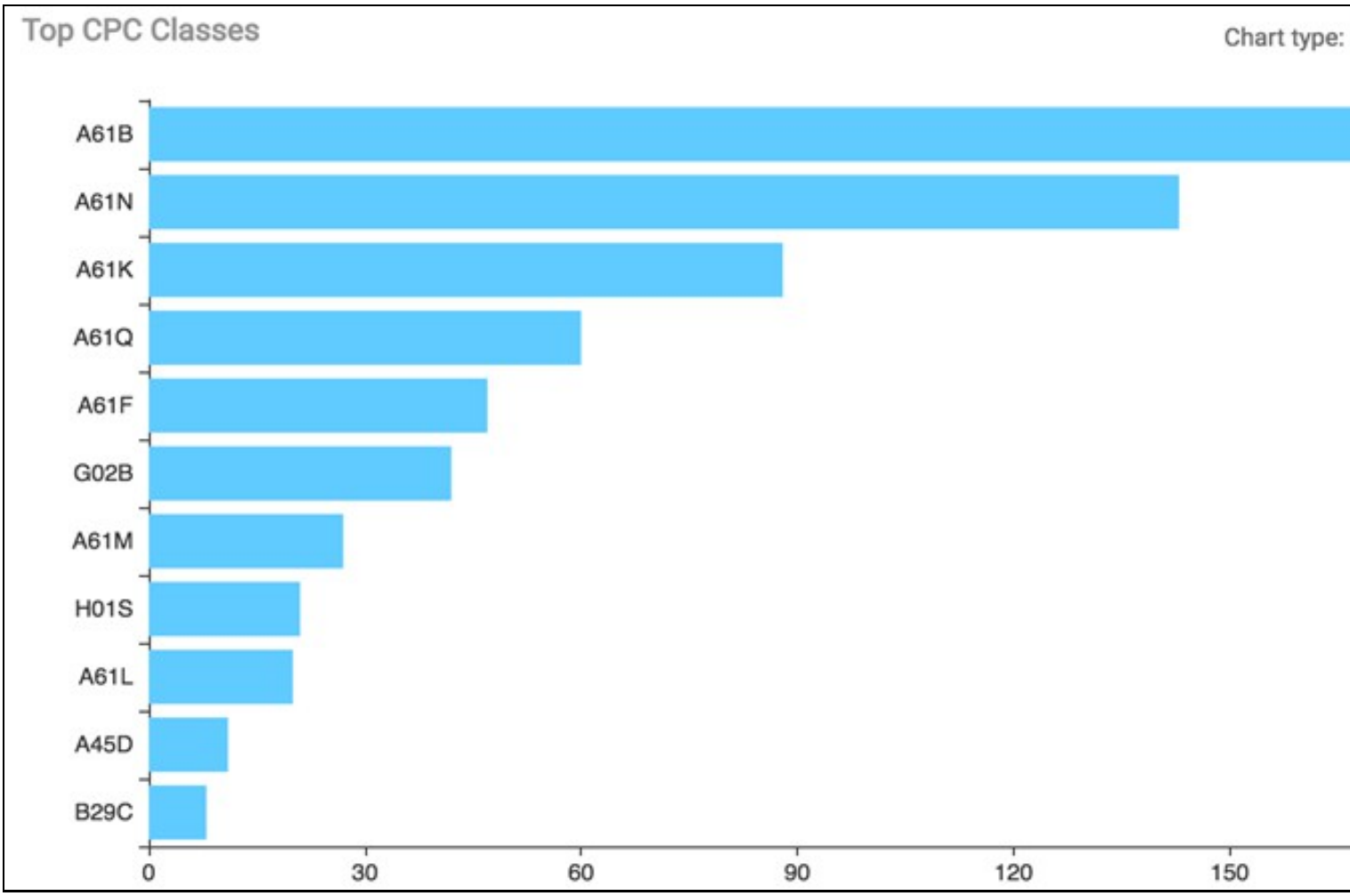
- Patents from **Klox Technologies** mentions various Biophotonic compositions and their use as therapy for photo-rejuvenation and wound healing



- All the **Michael Locker Christian** patents are co-assigned to **Klox Technologies**

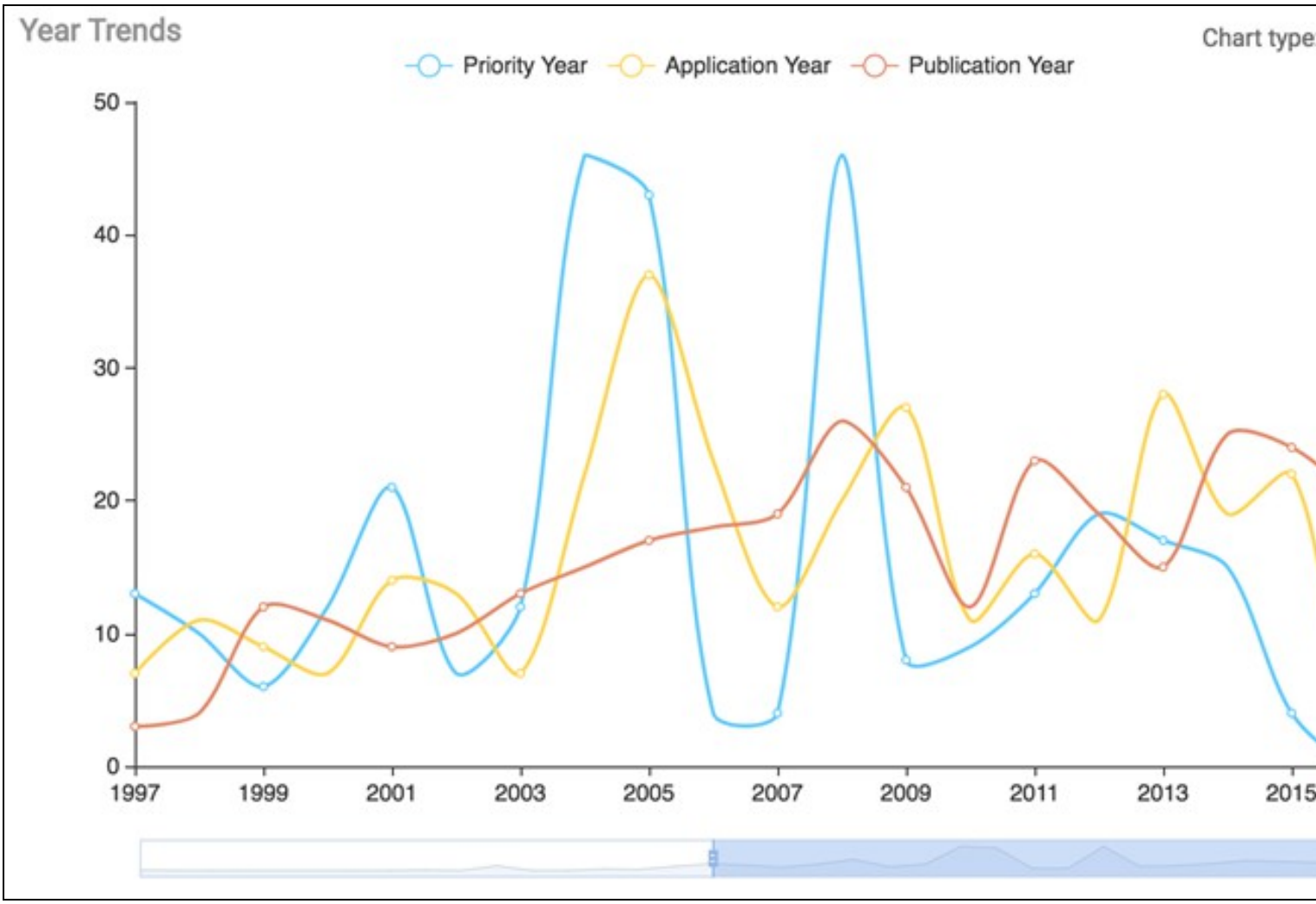
Bibliographic Analytics

Main CPC?s:



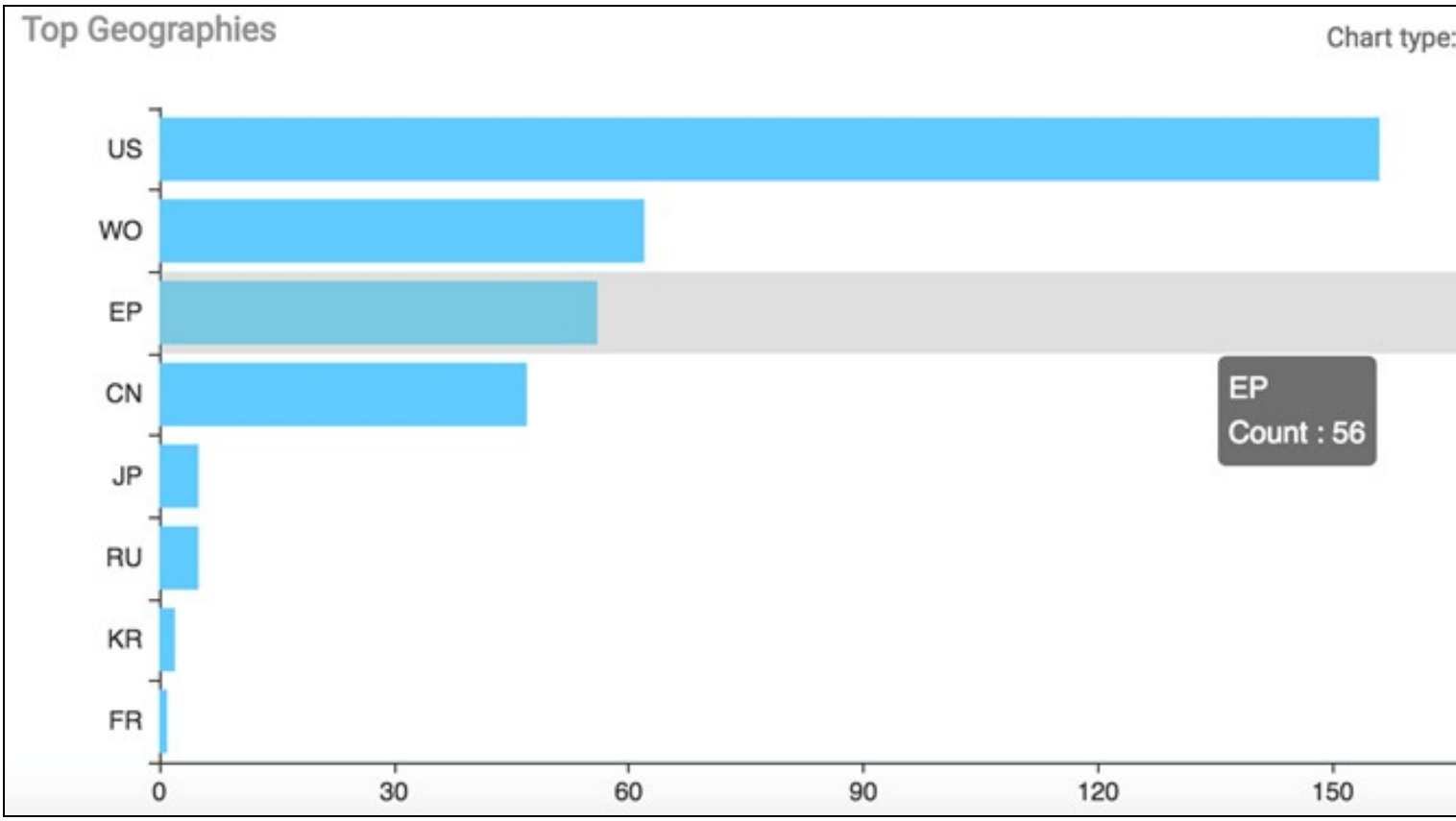
- A61B-treatment/diagnosis with cosmetic procedures
- A61N- Use of electrotherapy, magneto therapy, radiotherapy

IP Activity:



- IP activity started 20 years and saw a peak 10 years later
- Very recently there is a decrease in the IP activity

Geographical Distribution



- Most of the patents in this technology are from US, Europe or China. There is hardly any activity from other geographies

Technical Insights: CPC Distribution in Top Assignees:

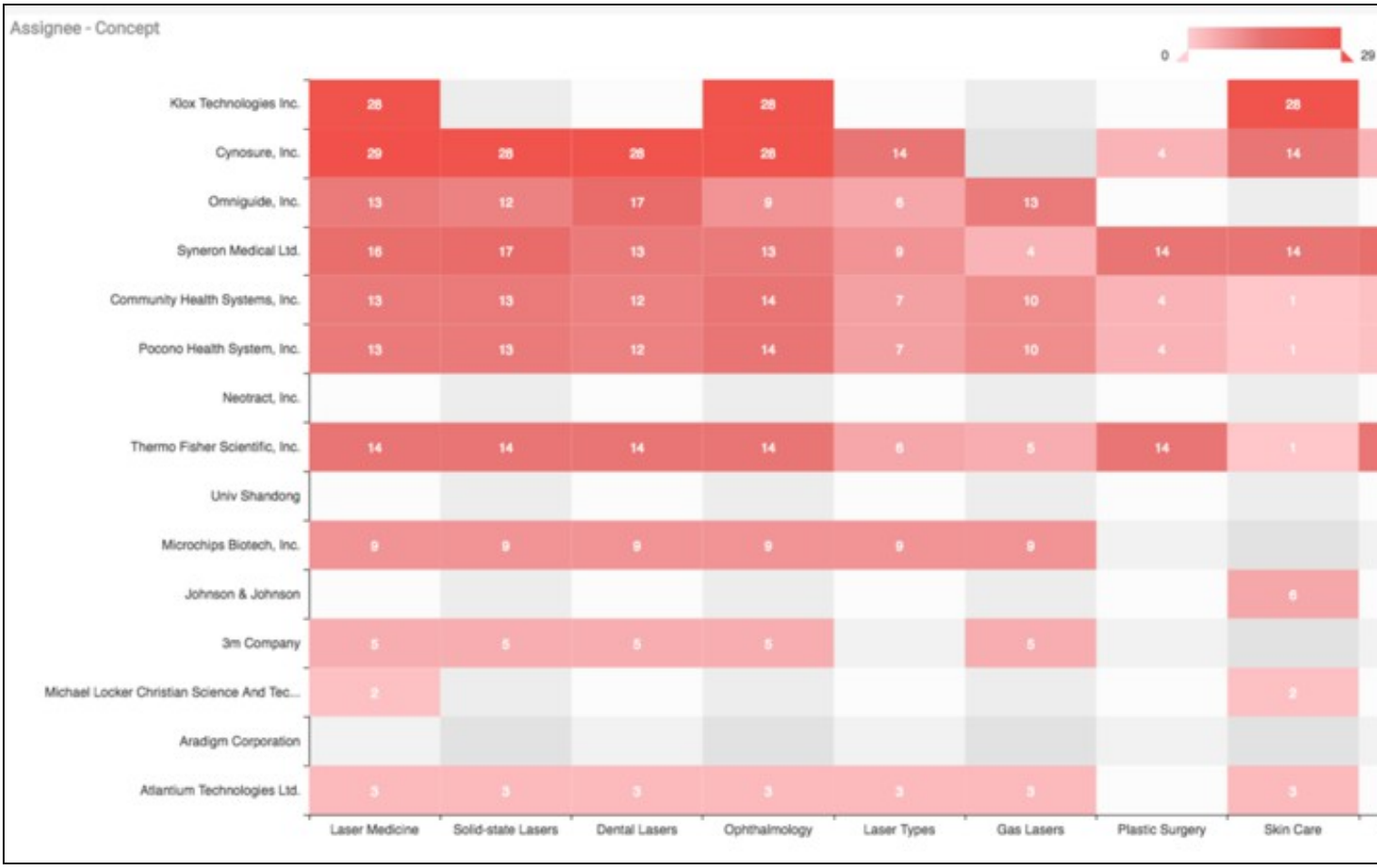
CPC Distribution:



- All the product based companies- Klox, Cynosure, OmniGuide, Syneron have heavy presence on the therapy based classes- A61B, A61N, A61K, A61Q and A61F
- Community Health Systems and Pocono Health Systems have patents in therapy based classes of A61B, A61N, A61K and A61F
- Technology development companies, e.g. 3M, have patented in upstream research like development of physical phenomena- G02, B23, B29 etc.

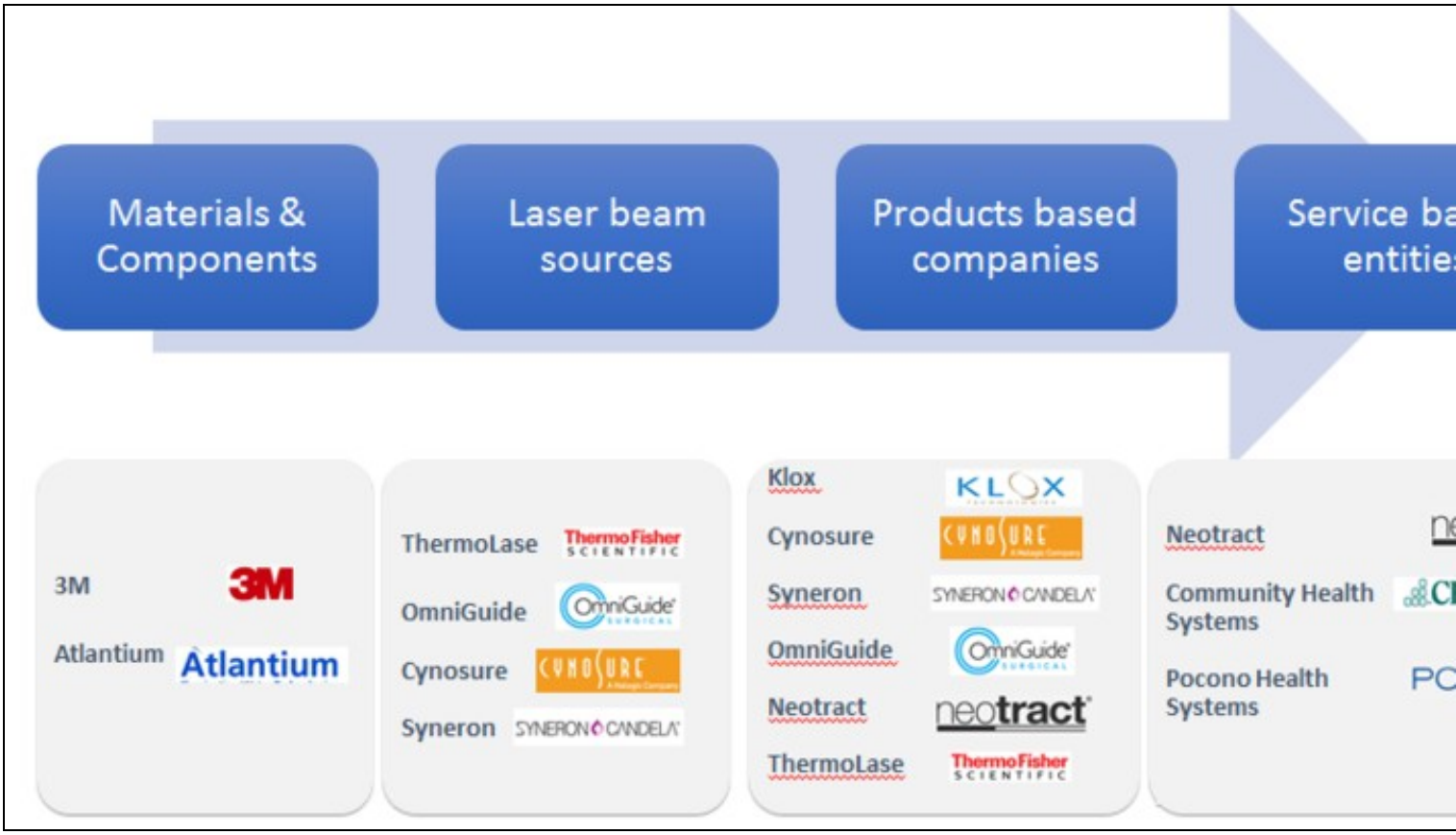
Technical Insights: Concepts vs Top Assignees

Technology Concepts:



- Cynosure patents disclose technologies related to Laser medicine, laser types and application in skin care, plastic surgery and ophthalmology
- Klox has rather focused patent disclosures- Laser medicine in ophthalmology and skin care.
- J&J patents are focused on skin care application and little disclosure on Laser technology itself.
- Syneron, Thermo Fischer(ThermoLase), Community Health Systems and Pocono Health Systems patents have varied claims

Value Chain Analysis



Latest M&A Activity in the Space

- Klox Technologies and LEO Pharma establish a jointly owned company to further develop and commercialize Klox?s Bio-Photonic technology in dermatology including Kleresca® for acne and Kleresca® for skin rejuvenation [Leo-Pharma]
- Hologic, a developer and manufacturer of medical and diagnostic products, has recently purchased Cynosure. The acquisition is to address the demand for medical aesthetics market and more specifically non-surgical products that Cynosure makes [Reuters]
- Botox maker Allergan Plc agreed to buy Cynosure?s rival Zeltiq Aesthetics Inc for about $2.48 billion
- Apax Partners has acquired Syneron Candela in a deal valued at $400 Mn. Syneron Candela products include multi-wavelength picosecond laser systems for pigmented lesions, for female health and for removing tattoos, and alexandrite lasers for hair removal [Optics]