



Aalto University  
School of Electrical  
Engineering

# Value Network Design for Internet

Case: Nokia OZO VR Camera

[Anastasia Kiviniemi-Ghonim # 291563]

[Sunny Vijay # 548135]

[Dragos Voda # 548177]

[Taneli Myllykangas # 588344]

# Case: Nokia Ozo

- First professional 3D 360 degree VR camera on the market
- 45 000 USD
- Includes Remote, Creator, Preview, and Live applications
- Sold directly by Nokia
- Available for rental from official partners



## Our research topic:

How to create winning services, use cases and business models using OZO?

# Scope, timeframe, assumptions and constraints

- Scope: 3D 360 video services in relation to existing video applications
- Time Frame: 3 years
- Sole provider of high quality 3D-360 camera service
- Limited but expandable target market
- Major stakeholders:
  - Camera hardware manufacturers
  - 360 video editing software developers
  - Content creators
  - Ozo customers
  - Content consumers
  - VR headset manufacturers

# Key Trends & Market Uncertainties

- Key trends: important forces whose consequences have not yet unfolded.
  - Development of VR/AR industry and devices.
  - VR industry is working on a set of standards.
- Key uncertainties: Important forces whose outcomes are not very predictable.
  - Does VR/AR become a successful industry?
  - Are there enough popular use cases for 360 video ?

# Scenario Construction

360 video:

Becomes mainstream

Remains niche

Successful

## The future is value driven

- Multitude of available options for HW & SW.
- High competition

## Limited future markets

- Exploration of new opportunities for 360 video

VR is:

Unsuccessful

- Not possible

## The future remains 2D

- 360 video applications remains niche market
- Investments scaled back

# Value Network Configuration

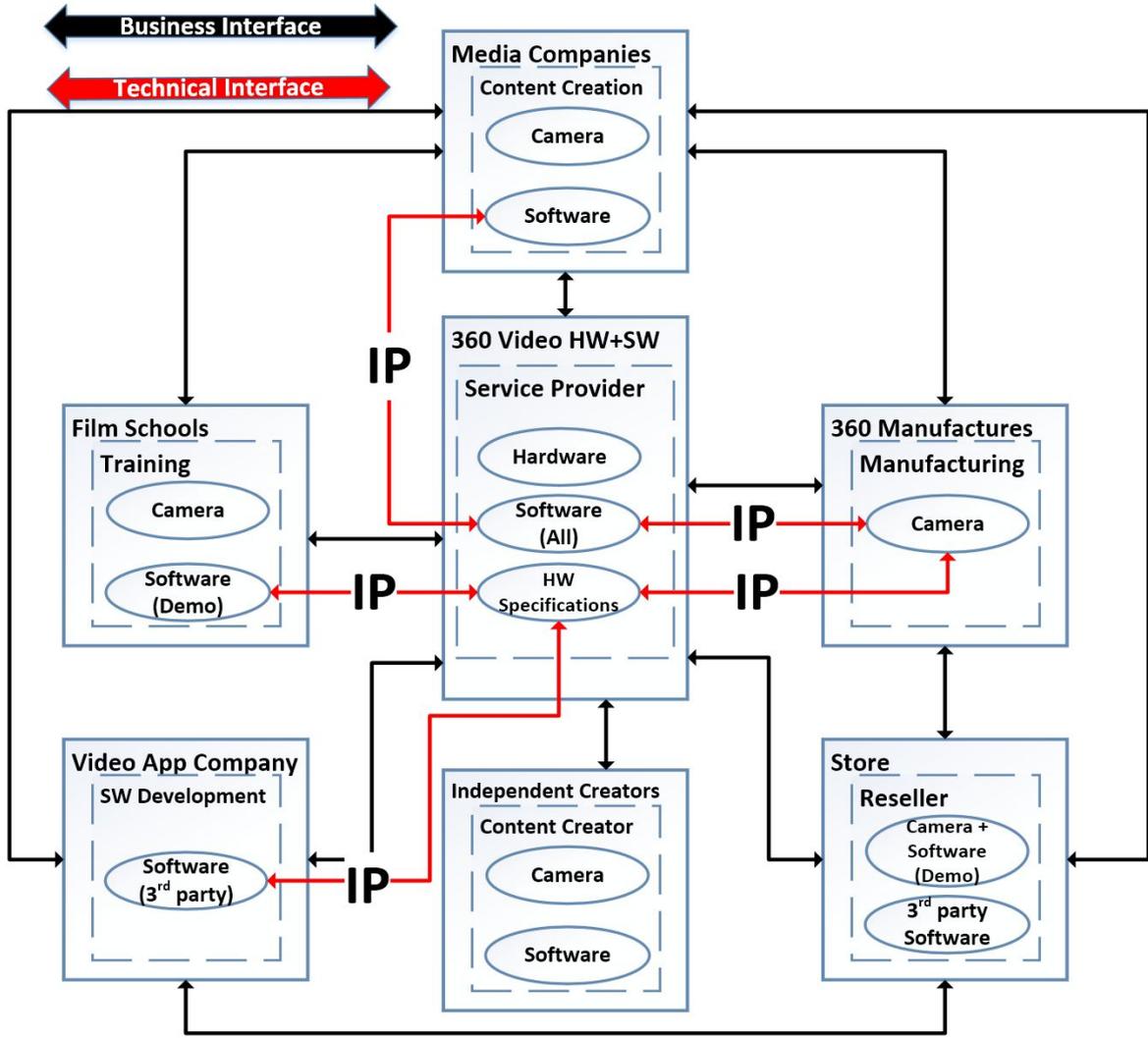
## Technical Components:

- Hardware
- Software
- HW Specifications
- Camera (i.e. Hardware)
- Creation App and Demo Software (i.e. Software)

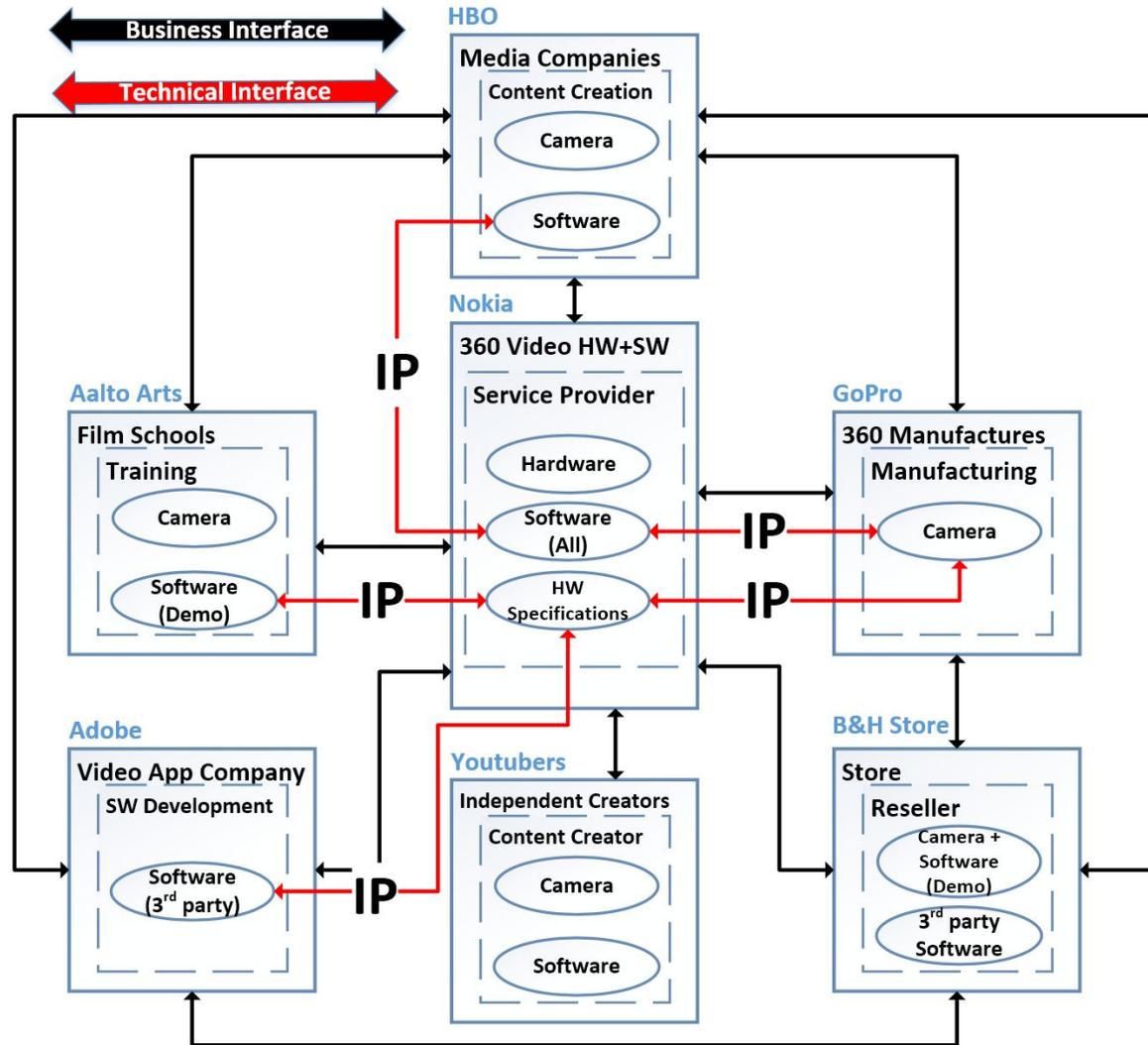
## Roles:

- Service Provider
- Content Creation
- Manufacturing
- Training
- SW Development
- Reseller

# Customer Choice Driven VNC

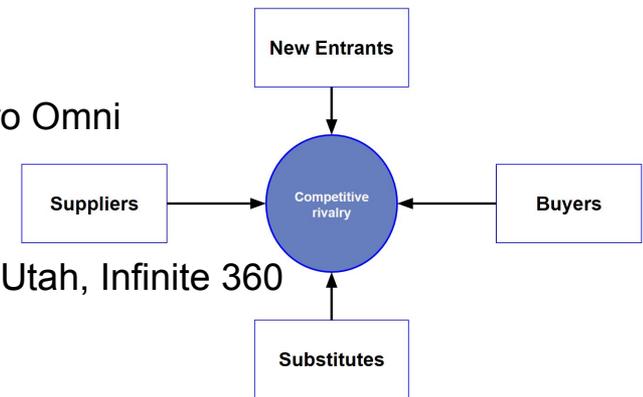


# Customer Choice Driven VNC



# Porter's Five Forces

- **Threat of new entrants**
  - The barriers of entry are essential factor for new entrants
  - The barriers: investment requirements, differentiation and access to distribution channels
  - Samsung, Kodak, LG, Nikon, GoPro
- **Threat of substitutes**
  - The price/performance ratio, competing products
  - Facebook Surround360, Google JUMP Odyssey, GoPro Omni
- **The bargaining power of buyers**
  - A buyers market can affect the price of the product
  - Creator examples: Proxi VR, Bandwidth, University of Utah, Infinite 360
- **The bargaining power of suppliers**
  - Nokia is producing the camera and software
- **Competitive rivalry**
  - Nokia has dominant position since it has first-mover advantage in the industry of professional 3D 360 degree cameras
  - Jaunt (professional 360 camera and software solution)
- **Power of complementary**
  - VR headset market proliferation



# Quick Scan

## Service domain:

- Selling the Ozo 3D 360 video camera
- Possibility of creating 3D 360 video

## Technology domain:

- Ozo software and media transfer
  - Possibilities: Offline processing, live streaming
  - Limitations: Data throughput and storage, ergonomics

## Organization domain:

- Refer to VNC Slide for organizational arrangements and VNC structure.
- Nokia, Media companies (HBO), Independent Creators (YouTubers), Film Schools (Aalto), Video App Company (Adobe), Store (B&H Store), 360 Manufacturers (GoPro).

## Finance domain:

- Network configuration provides balanced revenue streams and benefits, both tangible and intangible, between the actors involved.

# Critical Success Factors

## CSFs for customer value

- Compelling Value Proposition
- Clearly Defined Target Group
- Unobtrusive Customer Retention
- Acceptable Quality of Service

## CSFs for network value

- Acceptable Profitability
- Acceptable Risks
- Sustainable Network Strategy
- Acceptable Division of Roles

# Critical Design Issues in Service Domain

**Targeting:** Target the ecosystem of current and upcoming media creators alongside other HW manufacturers and SW developers involved in the 3D 360 video market.

**Creating value:** Enabling 3D 360 video capture and editing, and providing the camera specifications to promote hardware innovation and adoption.

**Branding:** Forming partnerships with film schools and media creators, emphasizing the seamlessness and immersion of 3D 360 footage through marketing, and promoting compatibility with other software and hardware throughout the (3D) 360 video industry.

**Trust:** Providing world class customer support, continuous updates and transparency regarding camera software and hardware.

**Customer retention:** Providing the best hardware and software package with a convenient subscription model while allowing the option of choice for either the hardware or software components.

# Critical Design Issues in Technology Domain

**Security:** Maintaining good and up to date coding standards and practises as well as not introducing any new security vulnerabilities.

**Quality of service:** Focus on solving the hardware and software issues that are identified via customer feedback.

**System integration:** Publishing the camera specifications opens up the possibility for 3rd party compatible software while actively working with other camera manufacturers ensures integration of competing hardware. Furthermore, the software can be tested for compatibility through a demo version.

**Accessibility:** Software is easily available to try, camera hardware specifications are provided, and partnerships with film schools broadens accessibility.

**Management of user profiles:** A profile is created upon registration of the SW and the user is responsible for its maintenance.

---

# Critical Design Issues in Organizational Domain

**Partner selection:** Form long-term partnerships with reputable film schools and media companies, and select (3D) 360 video hardware & software manufacturers to advance the adoption of Ozo hardware and/or software.

**Network openness:** Network is as open as possible without disclosing proprietary innovation for maximum customer reach and intercompatibility.

**Network governance:** Software quality and compatibility will determine the dominant actor and entry/exit costs are similar to the ones in the current industry.

**Network complexity:** Low level of complexity due to network openness.

# Critical Design Issues in Financial Domain

**Pricing:** Pricing strategy is set in order to achieve maximum market share and adjusted based on competitor offerings.

**Investments:** Investments aimed at resolving issues raised by customer feedback, creating intangible benefits and promoting the Ozo brand.

**Division and valuation of cost and revenue between actors:** Network configuration provides balanced revenue streams and benefits, both tangible and intangible, between the actors involved.

# Conclusions

- Viable business model proposition that takes into account associated risks.
- VNC provides scaling ability for every actor involved
- Broad applicability of model.
- New possibilities by open sourcing or licensing either hardware, software or both.

**THANK YOU**  
**Questions?**