An attempt at the interpretation of the K67 kiosk (1966) using 3D technologies

A part of a doctoral thesis: 3D Technologies as a Support for Industrial Design Museum Exhibition (Faculty of Arts, University of Ljubljana Slovenia)

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- K67 Short overview of the K67 kiosk
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- The Hungry Dragon fast food kiosk between physical and virtual environment
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- 3D digitisation of existing K67 units in cooperation with public

"UFO at the pedestrian zone?" At the beginning of the 1970's the K67 kiosk set up also at the Marienplatz, the main square in Münich (Saša J. Mächtig Archive).
K67 Kiosk System, 1966

Designer: Saša J. Mächtig  
Producer: Imgrad, Ljutomer

The system consists of several modular units and fillers that can be freely composed together.

The K67 kiosk is one of the most recognizable Slovenian industrial design icons. It is made of reinforced polyester and polyurethane.

The Museum of Modern Art (MoMA) in New York included K67 in the 20th century design collection.
Due to its applicability kiosks, assembled in different formulations, for several decades served as the newspaper kiosks, entry gates, small restaurants and bars, flower shops, gas stations, reporter cabins etc. Most of them were installed in the former Yugoslavia and in other Central and Eastern European countries.

Today the K67 kiosks owners replace with new facilities of other designers / producers, due to the wear material. A few still can be seen on our streets.

Production of the K67 was abolished more than a decade ago (2000).
2D digitisation author’s designs (relevant for creating a 3D-model)
3D digitisation of some important details
3D modeling of the K67 kiosk elements
based on the collected information
(2D digitisation, 3D digitisation, photographs, ...)
3D computer models of the K67 kiosk elements (24 elements)

<table>
<thead>
<tr>
<th>Units</th>
<th>Fillers</th>
<th>Canopies</th>
<th>Shelves</th>
<th>Legs</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>V</td>
<td></td>
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<tr>
<td>1. primary</td>
<td>2. secondary</td>
<td>3. tertiary</td>
<td>4. quaternary</td>
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<tr>
<td>B</td>
<td>V</td>
<td>S</td>
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The Hungry Dragon (Lačni zmaj) fast food kiosk

**Designer:** Saša J. Mächtig  
**Graphics:** Ranko Novak in Kostja Gatnik  
**Producer:** Imgrad, Ljutomer  
**Year of implementation:** 1979  
**Location:** Ljubljana Castle, Ljubljana

Photo: Janez Pukšič
Ljubljana Castle, Ljubljana

At the location, where the Hungry Dragon in the 1980’s was set up, today is a parking place.
3D computer models of the K67 kiosk elements (24 elements)

1. primary
   - units

2. secondary
   - fillers
   - canopies

3. tertiary
   - shelves

4. quaternary
   - legs

Red signed elements used to make a 3D computer model of the Hungry Dragon
applying textures on a 3D model
3D computer model of the Hungry Dragon kiosk
Location of the Hungry Dragon at Ljubljana Castle today
Kiosk K67 - Prehrambeni kiosk Lačni zmaj
avtor: Saša J. Mächting, grafike: Ranko Novak, Kostja Gatnik
proizvajalec: Lmgrad
leto izvedbe: 1979
lokacija: Ljubljanski grad, Ljubljana

Augmented reality mobile application (simulation)
1979 – photograph of the real kiosk

2012 – 3D computer simulation
3D computer models of the Hungry Dragon kiosk elements
Simulation of a 3D printing build box
3D printing of the elements
removing excess powder (for reuse)
blowing (forced air) the excess powder off the printed parts
infiltration of the printed parts
Assembling of 3D printed models of the Hungry Dragon kiosk (scale 1:20)

Material: plaster-based powder, water-based binder, cyanoacrylate (super glue), adhesive tape
„3D puzzles“ serious game
Make your own kiosk K67 (Sestavi svoj kiosk K67)
3D computer model of seven selected units of the K67 kiosk for traveling exhibition *Silent Revolutions: Contemporary Design in Slovenia*
Simulation of a 3D printing build box
Monocrome 3D printed elements
Surface finished 3D printed elements

- the effect of glossy plastic
- RAL color system
- Plexiglas (right on the picture)
Creating the composition in cooperation with Saša J. Mächtig, author of the original K67 kiosk
Different compositions
The **model** was exhibited at the *Silent Revolutions: Contemporary Design in Slovenia* traveling exhibition organized by the Museum of architecture and design

**Locations:**
Milano, Beograd, Maribor, Helsinki (2012)
Vienna, Moscow (2013)

**Curator:**
Maja Vardjan

**Partners from Slovenia:**
Ministry of Culture
Ministry of Forein Affairs
Ministry of the Economy
Public Agency of the Republic of Slovenia for Entrepreneurship
Government Communication Office
Slovenia Tourist Board
London Design Festival 2011, Tent London

Photo: Andrew Youngson
Dutch Design Week 2011
Zona Ventosa
Eindhoven

Triennale Design Museum
Milano

Photo: Keimpe Dijkstra

Photo: Giordano Marco Riboli
3D digitisation of existing K67 units in cooperation with public

> 3D model from photographs (photogrammetry)
> inclusion of users in the process of evaluation and documentation of heritage; information sharing
Non-professional use
A set of photographs + software for creating 3D-model from photographs (123D Catch Beta, ipd.)
izvoz 3D-modela v obliki predupodobljene animacije

> možnost objave na YouTubeu
Video (prerendered animation):
https://www.youtube.com/watch?v=nrJZ4Ruwan6w&list=UU_gUMdvrk9YRjLyexNfBJKg

> partial interactivity - the camera moves around the 3D model; the model is not turning by us
A model of heritage interpretation using 3D technologies

Example: the Hungry Dragon fast food kiosk
An attempt at the interpretation of the K67 kiosk using 3D technologies is made in collaboration with its author Saša J. Mächtig during the research program of Kaja Antlej, Young Researcher from business (Generation 2009) in IB-PROCADD d.o.o. company and and Doctoral Study in Heritology (Heritage Studies), Faculty of Arts, University of Ljubljana.

Project is made in cooperation with: Kaja Antlej (research and interpretation), Kristjan Celec (3D-digitsation and data editing), Darja Ljubič (3D-modeling), Menaf Sinani (3D-printing), Simon Demšar in Luka Planinc (2D-digitisation of designs) and others. Used equipment: 3D printer Spectrum Z510 (Z Corporation), ZPrint (Z Corporation), ZEdit (Z Corporation), 3D scanner ZScanner 800 (Z Corporation), Geomagic Studio (Geomagic), Magics (Materialise), Rhinoceros (Rhinoceros), Photoshop (Adobe), CorelDraw (Corel), 2D-scanner HD 4230 (Contex), Nextimage (Contex).

Mentors of the research program: Edvard Sternad, IB-PROCADD d.o.o. (development mentor), Prof. Slavko Dolinšek, Ph.D., Institute for Innovation and Development of University of Ljubljana (external research mentor), Assist. Prof. Mateja Kos, Ph.D., National Museum of Slovenia (pedagogical mentor).

Doctoral thesis title: *3D Technologies as a Support for Industrial Design Museum Exhibition.*
Doctoral thesis mentor: Assist. Prof. Mateja Kos, Ph.D., comentor: Assist. prof. Jasna Horvat, Ph.D.

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