

Anita Theis

A forecast on the development of the 3D TV market in the US

Will 3D TVs become the next big thing
in our living rooms?



Anchor Academic Publishing

disseminate knowledge

Anita Theis

A forecast on the development of the 3D TV market in the US: Will 3D TVs become the next big thing in our living rooms?

ISBN: 978-3-95489-500-7

Fabrication: Anchor Academic Publishing, an Imprint of Diplomica® Verlag GmbH, Hamburg, 2013

All rights reserved. This publication may not be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

Dieses Werk ist urheberrechtlich geschützt. Die dadurch begründeten Rechte, insbesondere die der Übersetzung, des Nachdrucks, des Vortrags, der Entnahme von Abbildungen und Tabellen, der Funksendung, der Mikroverfilmung oder der Vervielfältigung auf anderen Wegen und der Speicherung in Datenverarbeitungsanlagen, bleiben, auch bei nur auszugsweiser Verwertung, vorbehalten. Eine Vervielfältigung dieses Werkes oder von Teilen dieses Werkes ist auch im Einzelfall nur in den Grenzen der gesetzlichen Bestimmungen des Urheberrechtsgesetzes der Bundesrepublik Deutschland in der jeweils geltenden Fassung zulässig. Sie ist grundsätzlich vergütungspflichtig. Zuwiderhandlungen unterliegen den Strafbestimmungen des Urheberrechtes.

Die Wiedergabe von Gebrauchsnamen, Handelsnamen, Warenbezeichnungen usw. in diesem Werk berechtigt auch ohne besondere Kennzeichnung nicht zu der Annahme, dass solche Namen im Sinne der Warenzeichen- und Markenschutz-Gesetzgebung als frei zu betrachten wären und daher von jedermann benutzt werden dürften.

Die Informationen in diesem Werk wurden mit Sorgfalt erarbeitet. Dennoch können Fehler nicht vollständig ausgeschlossen werden und der Verlag, die Autoren oder Übersetzer übernehmen keine juristische Verantwortung oder irgendeine Haftung für evtl. verbliebene fehlerhafte Angaben und deren Folgen.

© Diplomica Verlag GmbH

<http://www.diplomica-verlag.de>, Hamburg 2013

EXECUTIVE SUMMARY

This research study answers the question of whether 3D TV will become a new trend or if it is a hype that will eventually fail to establish itself.

The paper is divided into a market research and a target group research. Both deal with the situation within the United States as the US has one of the highest market shares in 3D globally.

3D TV was introduced in 2010 and within that year the 3D TV sales made out 4% (3.2mio) of all TV sales. Within the US, 3% of the households purchased a 3D TV so far. According to E. Rogers' book "Diffusion of Innovation" whose theory is used as a guideline throughout the whole research paper, those 3% make out the category of innovators.

In order to reach out to other categories of the adopter categorization as well, the 3D TV technology has to face economic, sociological and technological challenges. Those challenges as well as the trends and developments influence the adoption of the technology. Those influencing aspects can be grouped into five categories: relative advantage, compatibility, complexibility, observability and trialability. The research determines how the different aspects concerning the 3D technology influence these categories in order to come up with possible forecast of 3D TV.

The relative advantage is mainly influenced by the target group's perception of 3D TV. While 3D TV aims to add an experience domain to the traditional experience of 2D TV, this is not especially valued among the target group. The price of 3D TV sets however does play a significant role – many consider the prices of 3D as too high. However the experience teaches that the prices are likely to decrease due to the price setting strategy called "price-skimming". The most important factor concerning compatibility is the unfavorable launch-date of 3D TVs in the US. In 2010 most people have just bought an HDTV and now are satisfied with the technology they have and do not see any reason to buy a new TV any time soon. Other factors influencing the compatibility are the need to wear glasses, which are expensive and uncomfortable. Also the digital revolution plays a role – TVs in general lose their influence while computers with the help of internet have the role of a multi-media device that makes TVs redundant. On the positive side, the increased production of 3D content that fits the target group's profile makes 3D perfectly compatible with the target group's values.

Though 3D TV is a rather complex technology, especially at this time now that there is new technology developed all the time, creating an information jungle – the target group research shows that the target group is surprisingly well educated about the technology and that this education positively influences the perception towards 3D TV. Trialability/Observability – those two categories are grouped together within the research. Outside of the movie theaters, the trialability/observability is pretty limited. However there is a positive correlation between trialability/observability and the perception towards 3D. That shows that the people that actually have the chance to watch 3D at some place do like it and have an increased probability to purchase a 3D TV.

In the end and compared with the target group research, it seems as if the 3D TV technology will actually make it and become a new trend.

PREAMBLE

This research study would not have been possible without the help and the endless support of my friends, family and the team behind Story House Productions in Washington, DC.

Conducting an extensive research study such as this one cannot be done without a group of people that offers support – not only concerning the needed knowledge, but also mentally. Therefore, this paper will never be a work that has been done all by myself, but was only possible with the help of a lot of people.

First of all I want to thank the team of Story House Productions in Washington, DC for giving me the great opportunity to work with and for them, and for all the knowledge and competences that I have gained.

I want to thank Katharina Osterholt for not only being a great friend during hard times, but also for sharing knowledge and in being an awesome motivator.

James P. Tanabe – not only for proof-reading, but also for your belief in me and your great friendship!

There were a lot more people that have supported me in different ways and without whom I would not be where I am right now.

I want to thank everyone who believed in me – even at times when I did not.

Anita Theis

CONTENT

EXECUTIVE SUMMARY	5
PREAMBLE.....	6
CONTENT	7
LIST OF ABBREVIATIONS.....	9
INTRODUCTION	10
<i>Problem Statement & Main question</i>	10
Research Questions	11
METHODOLOGY	13
<i>Data used</i>	13
Tertiary Information	13
Secondary information	13
Primary information	13
<i>Constraints and Limitations</i>	13
Budget	13
Constant changes in the sector.....	13
PART 1 –DESK-RESEARCH.....	15
RESULTS	16
<i>What is 3D TV?</i>	16
How is the 3D effect created?	16
3D – from 1838 to 2010.....	16
3D Costs and Revenues.....	17
<i>The extra value of 3D</i>	18
<i>What is the market position of 3D TV in the US?</i>	19
Consumer’s attitude towards 3D.....	19
<i>The Challenges of 3D TV</i>	20
Economic challenges.....	21
Technological Challenges.....	21
Sociological challenges	23
<i>Trends and Development of the 3D TV market</i>	24
3D Content.....	24
3D TVs.....	25
Prices	26
3D Glasses.....	26
3D online streaming.....	27
<i>How does The consumer-adoption-process work?</i>	28
ANALYSIS	30
<i>Relative Advantage</i>	30
<i>Compatibility</i>	31
<i>Complexibility</i>	32
<i>TrialAbility/Observability</i>	32
CONCLUSION.....	33
PART 2 – TARGET GROUP RESEARCH.....	35
RESEARCH DESIGN & METHODOLOGY	36
<i>Problem statement</i>	36
<i>Target group</i>	36
<i>Sample Size</i>	37
Adjustment of the sample size	37
<i>Topics</i>	38
<i>Research Questions</i>	38
Decisions of making the questionnaire.....	38
Testing of the questionnaire.....	40
<i>Fieldwork</i>	40
Online survey	40
Paper Version.....	41

<i>Process of the fieldwork</i>	41
Determining data	41
Control of the fieldwork.....	41
Control with the help of accessible data.....	41
Bias	42
RESULTS	44
<i>Research Question 1 – How are the innovators of the 3D TV technology characterized?</i>	44
<i>Research Question 2 – What’s the target group’s TV viewing behavior and How affiliated are they with new technology in the TV market?</i>	46
<i>Research Question 3 - What is the target group’s Perception Towards 3D TV?</i>	48
<i>Research Question 4 – How educated is the target group about 3DTV?</i>	51
<i>Research Question 5 – What are the obstacles to adapt to 3D TV?</i>	53
ANALYSIS	54
<i>Analysis of the research questions</i>	54
How are the innovators of the 3D TV technology characterized?	54
What is the target group’s TV viewing behavior and how affiliated are they with the technology in the TV market?	55
What is the target group’s Perception towards 3D TV?	56
How educated is the target group about 3D TV?.....	57
What are the obstacles to adapt to 3D TV?	57
<i>How does the target group’s perception towards 3D TV influence the adoption rate of 3D TV?</i>	58
Relative Advantage	58
Compatibility.....	58
Complexity.....	59
Triability/Observability	59
PART 3 - CONCLUSION & DISCUSSION	60
EXPLANATORY NOTES	62
SOURCES.....	63
APPENDIX	i
<i>Appendix 1 – Graphics</i>	i
<i>Appendix 2 – Questionnaire</i>	xi

LIST OF ABBREVIATIONS

CTAM - Cable & Telecommunications Association for Marketing

HDTV - High Definition Television

LCD - Liquid Crystal Display

LED - Light-emitting Diode

VOD - Video on Demand

INTRODUCTION

The 3D technology is almost as old as the movie theaters and was invented by Charles Wheatstone in 1838. His discovery was followed by the production of the very first 3D movies in 1922 (Zone, 2007, p1). But despite of its early invention this technology had to go through a lot of ups and downs, changes and improvements for almost 90 years, before it made its debut to where TV established itself in the 1920s: the consumers' living rooms.

2010 was the year in which the third dimension was introduced to private homes and has not been restricted to the movie theaters anymore ("An introduction to 3D Television", 2010). Today, in 2011, the 3D technology is improved continuously in order to satisfy the consumer. But that does not make it easier to introduce it to the target group: Constant changes and developments create an information jungle for the consumer who therefore lacks the knowledge to make a well-informed decision about adopting to the technology. Because of that the danger is that 3D TV will fail to reach out to the broad mass.

PROBLEM STATEMENT & MAIN QUESTION

The major TV manufacturers such as Sony, Samsung, Panasonic or Toshiba introduced their first 3D TV sets in early 2010 reaching out to a global target group.

By the end of 2010, studies conducted by the Nielsen Company and Renub Research showed that only 2% of the US citizens have bought a 3D TV – globally a total of approximately 3.2 million 3D TV sets were sold, making out 4% of all TV sales in 2010.

The forecasts of 3D TV have been very ambivalent throughout: While some predictions expect 3D TV to become a major success for the entertainment industry and the new standard in the consumers' living rooms within the next three to five years, other studies however conclude that the introduction of 3D TV had been too early and call it a hype that soon will be forgotten.

By taking the theory about diffusion of innovation into account, it seems the 3D TV technology has only been adapted by the category of innovators so far – the first 2.5% of people that adapt to a new product or technology. Several different reasons could account for the slow adoption rate: from the consumer's perception of 3D TV to the challenges that this new market has to face.

At the same time however, the investment into 3D TV is high for both TV manufacturers as well as 3D content providers. Their challenge is to increase the adoption and reach out to a broader target group in order to turn 3D TV into a successful new niche product that has the chance to become a new trend and a new standard.

The key to success lies in the consumer – only if they are convinced of the new technology they be triggered to adapt to it.

This research is therefore determined to find an answer to the question of whether or not 3D TV will be able to increase its adoption among the target group and therefore become successful within the next 3 to 5 years.

This research is basically divided into two parts: Part 1 consists of an in-depth market and desk research of 3D TV and includes the challenges, trends and developments of this technology. Part 2 consists of a target group research that carries the assumptions and conclusions of the market research part further and tests those on the target group directly. The results of both research parts then together will be able to answer the main question.

RESEARCH QUESTIONS

Several research questions were set up in order to find an answer to the main question of this research.

Part 1:

1. What is 3D TV?
2. What is the extra value of 3D TV?
3. What is the market position of 3D TV as of early 2011 in the United States of America?
4. What are the challenges of 3D TV?
5. What are the trends and developments of 3D TV up to Q1 2011 worldwide and with a special focus on the US?
6. How does the adoption process of a new technology usually progress and how did the adoption process of the 3D TV technology progress in the US since its introduction in 2010?

Part 2:

7. How does the target group's perception towards 3D TV influence the adoption rate of 3D TV?

JUSTIFICATION OF RESEARCH

This research provides an in-depth insight into the market situation of 3D television and both its challenges and developments. This is complemented by a target group research about the consumer's perception of 3D TV and the possibilities of increasing the adoption of this innovation. By providing insight into different studies that have been conducted about 3D TV, this research paper unravels all the available information and puts them into a new light to give an indication whether 3D TV will make its way to ubiquity or oblivion.

Everett M. Rogers (Diffusion of Innovation, 2003, 5th ed.) defined five characteristics that influence the adoption rate of an innovation. Based on his book, this dissertation determines in how far those characteristics favor or disfavor the adoption process of 3D TV and how current trends and developments within the 3D TV sector might improve this process. These conclusions are then used in a target group research in order to determine whether they are feasible and will lead to a higher adoption rate of the technology within the next 3 to 5 years.