

DentiNect: An emerging player in digital dentistry and Orthodontics: The Past, Present and Future

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Abstract

DentiNect was an original brain child of the author & her team that she conceived during her residency by simply identifying a problem in the existing global orthodontic community and devising its potential solution. The idea was well appreciated and bore fruit by being endorsed by Pakistan Association of Orthodontists (PAO) in 2019.

Keywords: DentiNect; tele-orthodontics; digital orthodontics

Background

The idea of Digital Dentistry has been in practice for more than 03 decades from CBCT, facial imaging, E-models, CAD-CAM, robotic arch wires and rapid prototyping. However, all of these digital applications exist in independent modes either are inaccessible or very expensive. In midst of such advances a new domain of dentistry “Tele-Orthodontics” that has not been quite talked about has emerged through “**DentiNect: 24/7 Intelligent Oral Health Solutions changing dentistry through Connected Care**”

DentiNect is a digital platform with growing acceptance and is targeting the unmet need demand - ratio between the specialist orthodontists, orthodontic residents and general dental practitioners. The platform supports direct patient- doctor contact points, has multiple inbuilt diagnostic tools that are accessible through cloud services making it extremely cost effective, efficient & user friendly. DentiNect can be a good potential

alternative for expensive centralized diagnostic software’s.

Introduction

In recent years Pakistan has been pushed to accelerate towards digitalization with friendly tax exemption policies, interest free loans , initiatives like PIAIC (President Initiative for Artificial Intelligence & Computing), Kamyab Jawan Scheme, Prime ministers “Digital Pakistan Vision”. A number of private - public partnerships’ have emerged as “Technology Incubators” where startups are guided and trained in innovation & entrepreneurship. Existing incubators in Pakistan are 20 that is almost 100% increase in past 07 years. Pakistan has been a hotspot for investors, just to name a few noticeable unicorns with strong Pakistani presence are Afiniti, Careem, KeepTruckin.

Where does DentiNect fit?

DentiNects soft launch inaugural was done by Dr. Arif Alvi, president of Pakistan, a fine orthodontist and patron in chief PAO at “Excellence through Synergy”, 7th Pakistan International Orthodontic Conference, PAO. The president drew DentiNect parallels with 4th industrial revolution calling it “the dire need of hour”.

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Challenges and Solutions faced whilst creating and co-creating DentiNect

Though embarking a journey “DentiNect” in patriarchal society hasn’t been easy but it has evolved a rather resilient and optimistic mindset where the challenges faced with potential solutions have a high impact learning outcomes. The only way to thrive was to envision a great future.

Challenges faced were:

- 1- Non ICT background- (learnt basic programming & languages)
- 2- Lack of funding & resources (self-funded)
- 3- Team building coherence from IT, Finance and business backgrounds (making the team believe in future vision)
- 4- Time management between training and DentiNect (still learning)
- 5- Conversion of original Orthodontic paradigm into software language (guiding the IT team full time)
- 6- Convincing the orthodontic community to participate (through a functional prototype and repeated trial- testing’s)

DentiNect VS other Competitors:

S.No	Features	DentiNect	Others
1	Residents-Doctor AI-ML	Yes	No
2	GDPR Compliant	Yes	No
3	Network sharing	Yes	No
4	Patient Inputs/ Reviews	Yes	No
5	Workflow Management	Yes	No
6	Decentralized Ceph Access	Yes	No
7	History Sheets	Yes	No
8	Data Archives	Yes	No

9	Indirect supervision	Yes	No
10	Resident portfolio	Yes	No
11	Additional Income streams	Yes	No
12	Pricing	Yes	No
13	Private Practice Portfolios	Yes	No

Where Does DentiNect Stand in a Fast Paced Digital space: Past, Present and Future?

- The word “Digital” is redefining conventional processes by establishing online, fully automated processes through digital signals with little or no need for human interaction. The estimated cost reduction per patient through tele-health can be between 30%-50% and on full scale adaptation can reduce the overall health costs by 16 billion dollars. This stands true for struggling economy like Pakistan where annual budget spending on healthcare is only 0.5% or 50billion PKR.

Who will Project benefit from DentiNect?

The entire population pyramid from patients, healthcare practitioners, providers, givers, residents, PG trainees, dental students, enablers in both private and public sectors including the tiers of primary and secondary healthcare delivery facilities will benefit from the project. The impact will be on greater disease control, self care, easy and affordable accessibility to healthcare, systematized healthcare delivery through four modes of preventive, promotive, curative, and rehabilitative services with expected reduction in healthcare overheads, targeted budget & friendlier schemes.

DentiNect Features through History



Figure 1: Prototype

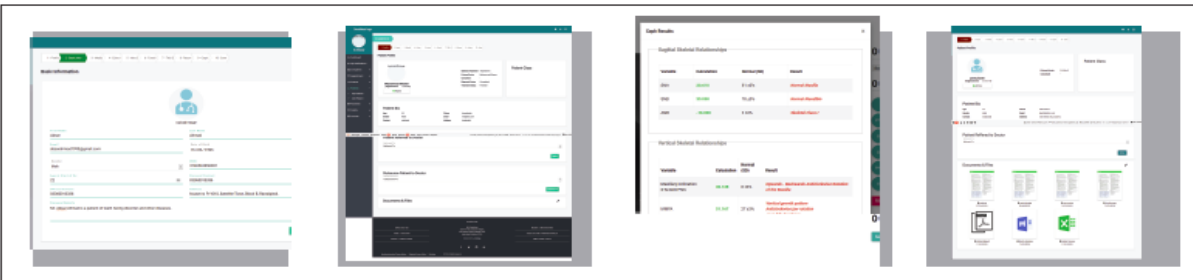


Figure 2: MVP 1.0

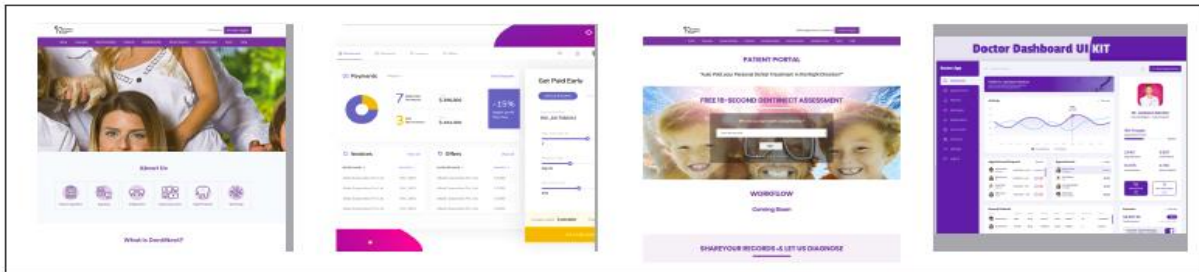


Figure 3: MVP 2.0



Figure 4: MVP 3.0

Present: What is the value proposition of existing DentiNect platform?

1. DentiNect has created innovative, fast freemium diagnostic technology that will help clinicians to be better equipped in

remote yet accurate diagnosis of patients in absence of specialized skill set.

2. DentiNect technology stack simplifies the way dentists; practices and oral health providers work together helping them to be more productive by resourceful time management, patient handling and efficient skill utilization.
3. DentiNect's Collaboration technology will enable local teams to securely share information within and across the borders to gather expert opinion converting meaningless and scattered information in to actual clinical insight.
4. DentiNect's open source academia aims to transform academic research by creating a centralized scientific platform based on indirect supervision, networking and latest evidence.
5. DentiNect platform will enhance patient's seamless WiFi personal experience by letting them engage directly to oral health care providers, practices and insurances. Skipping prolonged waiting times and cutting on treatment costs.

Future:

Is DentiNect an ambitious brainchild of an over enthusiastic millennial orthodontist? Or a grandiose of an over projected vision? Or an absolute necessity of an unforeseen future?

Answer to that future is our current reality, choose and decide for yourself to become a part of "Digital Revolution" or dust to tales of the old.

An implementation of such model in dental services can in the future be extended to other healthcare domains on a larger scale serving purpose economy and sustainability where everyone in fractured healthcare delivery system of Pakistan can be benefitted.

(See the Roadmap Figure year 2016-2022)

Conclusions

Creativity driven by originality of ideas, vigorous approach and pursuit of excellence are brand values of DentiNect. The dental teams need to focus on upgrading skills by focusing on technology driven outcomes. The process of automation will replace time consuming tasks and DentiNect is perfect platform for global dental industry to collaborate on bigger scale with primal focus laid on building a sustainable future.

DentiNect Roadmap 2016-2022

