



Ultrasonic Imaging System

MPR Designs Device that Changes the Standard Practice

Practice Areas



Medical Devices



Diagnostics



Laboratory Instruments



Analytical Instruments



Biotechnology



Pharmaceuticals

Product Types



Durables



Disposables



Packaging

Service Areas



Research and Development



Voice of the Customer



Conceptualization



Proof-of-Concept



Detailed Engineering



Industrial Design



Design for Manufacturing



Supply Chain



Regulatory



Intellectual Property



Scale-Up



Fundraising



Device Certification

CHALLENGE

A start-up company in the dental industry wanted to take a new concept for a digital imaging and diagnostic device for non-invasively detecting and monitoring treatment of periodontal disease, from a university laboratory environment to the clinical practice setting.

SOLUTION

Working closely with the company, MPR applied its First Principles innovation process to address several previously undetected technical issues with hardware, software and fluidics design technologies. The MPR team then created a working prototype using an embedded Microsoft Windows XP operating system, automated controls and a screen-based user interface. MPR's digital signal processing experts developed a cutting-edge algorithm to interpret the ultrasonic data and convert it into easily discernible images of key anatomical features. MPR also supported the company through strategic consulting services by developing the 510(k) FDA submittal and supporting the company in its animal and human trials.

RESULTS

Developed in just 12 months, the resulting compact, chair-side device alters the previous methodology for detecting and measuring periodontal disease by utilizing a non-invasive tool to measure pocket depth, providing more efficient, effective and patient-friendly treatment.

TIMELINE 12 Months

